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A Sourcebook for Poverty Reduction Strategies



Volume 2: Macroeconomic and Sectoral Approaches

*Edited by
Jeni Klugman*



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Part 3

Macroeconomic and Structural Issues

Chapter 12

Macroeconomic Issues

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Please Note

This chapter has been compiled to help guide the development or strengthening of poverty reduction strategies. It is not intended to be prescriptive, nor does it aim to provide a definitive solution to the difficult issues that countries face in putting together a poverty reduction strategy. It is intended only to be suggestive and to be selectively used as an informational resource. It does not reflect the official policies or approaches of either the World Bank or the International Monetary Fund (IMF). It is an evolving document that will be revised in light of comments and feedback received, and in light of country experience in developing and strengthening poverty reduction strategies.

12.1 Introduction

Poverty is a multidimensional problem that goes beyond economics to include, among other things, social, political, and cultural issues (see chapter 1, “Poverty Measurement and Analysis” and box 12.1). The fact that solutions to poverty therefore cannot be based exclusively on economic policies, but require a comprehensive set of coordinated measures lies at the heart of the rationale underlying comprehensive poverty reduction strategies.¹ Economic growth, however, remains the single most important factor influencing poverty, and macroeconomic stability is essential for high and sustainable rates of growth.² Macroeconomic stability must therefore be a key component of any poverty reduction strategy.

Macroeconomic stability by itself does not ensure high rates of economic growth. In most cases, sustained high rates of growth also depend upon key structural measures, such as regulatory reform, privatization, civil service reform, improved governance, trade liberalization, and banking sector reform. Many of these are discussed at length in other chapters of this book. Growth alone is in its turn insufficient for poverty reduction. Growth associated with progressive distributional changes, for example, will have a greater impact on poverty than growth that leaves distribution unchanged. Policies that improve the distribution of income and assets within a society, such as land tenure reform, pro-poor public expenditure, and measures to increase the access of the poor to financial markets, are thus essential to a country’s poverty reduction strategy.³

To safeguard macroeconomic stability, the government budget, including the country’s poverty reduction strategies, must be financed in a sustainable, noninflationary manner. The formulation and integration of a country’s macroeconomic policy and poverty reduction strategy is an iterative process. Poverty reduction strategies need first to be articulated (that is, objectives and policies specified), then costed, and finally financed within the overall budget in a noninflationary manner. The amount of finance, much of which will be on concessional terms, is, however, not necessarily fixed during this process: If credible poverty reduction strategies cannot be financed from available resources, World Bank and IMF staff should and will assist countries in their efforts to raise additional financial support from the donor community. Nonetheless, in situations where financing gaps remain, a country must revisit the intermediate objectives of its strategy and reexamine its priorities. Except in cases where macroeconomic imbalances are severe, there will usually be some scope for flexibility in setting short-term macroeconomic targets. The objective of macroeconomic stability should not be compromised, however.

This chapter is organized as follows: Section 12.2 draws upon recent literature to outline key empirical facts about growth and the implications of those facts for macroeconomic policy. Section 12.3 discusses how macroeconomic policies may vary depending on whether a country is in a state of instability, stabilization, or stability. Section 12.4 provides a description of the iterative process for the integration of a country’s poverty reduction strategy and its macroeconomic and budgetary framework. It also discusses fiscal, monetary, and exchange rate policies that would be supportive of the objectives of sustainable growth, low and stable inflation, and, in turn, poverty reduction. Finally, section 12.4 also discusses policies to insulate the poor against the impact of shocks to an economy.

12.2 The Links Between Macroeconomic Policy and Poverty Reduction

12.2.1 Growth matters

Economic growth is the single most important factor influencing poverty.⁴ Numerous statistical studies have found a strong association between national per capita income and national poverty indicators, using both income and nonincome measures of poverty. One recent study of 80 countries, covering a period of four decades, found that on average the income of the bottom one-fifth of the population rose one-for-one with the overall growth of the economy as defined by per capita gross domestic product (GDP) (Dollar and Kraay 2000). Moreover, the study found that the effect of growth on the income of the poor was on average no different in poor countries from that in rich countries, that the poverty-growth relationship had not changed in recent years, and that policy-induced growth was as good for the poor as it was for the overall population. Another study that looked at 143 growth episodes also found that the “growth effect” dominated, with the “distribution effect” being important in only a minority of cases

Box 12.1. Definition and Measurement of Poverty

The World Bank's 2000 *World Development Report* defines poverty as an unacceptable deprivation in human well-being that can comprise both physiological and social deprivation. Physiological deprivation involves the nonfulfillment of basic material or biological needs, including inadequate nutrition, health, education, and shelter. A person can be considered poor if he or she is unable to secure the goods and services to meet these basic material needs. The concept of physiological deprivation is thus closely related to, but can extend beyond, low monetary income and consumption levels. Social deprivation widens the concept of deprivation to include risk, vulnerability, lack of autonomy, powerlessness, and lack of self-respect. Given that different definitions of deprivation often go beyond physiological deprivation and sometimes give greater weight to social deprivation, local populations (including poor communities) should be engaged in the dialogue that leads to the most appropriate definition of poverty in a country.

(White and Anderson forthcoming). These studies establish association, but not causation. In fact, the causality could well go the other way. In such cases, poverty reduction could in fact be necessary to implement stable macroeconomic policies or to achieve higher growth.

Studies show that capital accumulation by the private sector drives growth. Therefore, a key objective of a country's poverty reduction strategy should be to establish conditions that facilitate private sector investment. There is no magic bullet to guarantee increased rates of private sector investment. Instead, in addition to a sustainable and stable set of macroeconomic policies, a country's poverty reduction policy agenda should in most cases extend across a variety of policy areas, including privatization, trade liberalization, banking and financial sector reforms, labor markets, the regulatory environment, and the judicial system. The agenda should certainly include increased and more efficient public investment in a country's health, education, and other priority social service sectors.⁵

12.2.2 Macroeconomic stability is necessary for growth

Macroeconomic stability is the cornerstone of any successful effort to increase private sector development and economic growth. Cross-country regressions using a large sample of countries suggest that growth, investment, and productivity are positively correlated with macroeconomic stability (Easterly and Kraay 1999). Although it is difficult to prove the direction of causation, these results confirm that macroeconomic instability has generally been associated with poor growth performance. Without macroeconomic stability, domestic and foreign investors will stay away and resources will be diverted elsewhere. In fact, econometric evidence of investment behavior indicates that in addition to conventional factors (that is, past growth of economic activity, real interest rates, and private sector credit), private investment is significantly and negatively influenced by uncertainty and macroeconomic instability (see, for example, Ramey and Ramey 1995).

12.2.3 Macroeconomic instability hurts the poor

In addition to low (and sometimes even negative) growth rates, other aspects of macroeconomic instability can place a heavy burden on the poor. Inflation, for example, is a regressive and arbitrary tax, the burden of which is typically borne disproportionately by those in lower income brackets. The reason for this is twofold. First, the poor tend to hold most of their financial assets in the form of cash, rather than in interest-bearing assets. Second, they are generally less able than are the better off to protect the real value of their incomes and assets from inflation. In consequence, price jumps generally erode the real wages and assets of the poor more than those of the nonpoor. Moreover, beyond certain thresholds, inflation also curbs output growth, an effect that will affect even those among the poor who infrequently use money for economic transactions.⁶ In addition, low output growth that is typically associated with instability can have a longer-term impact on poverty (a phenomenon known as "hysteresis"). This phenomenon typically manifests itself in shocks to the human capital of the poor. In Africa, for instance, there is evidence that children from poor families drop out of school during crises. Similarly, studies for Latin American countries suggest that adverse terms-of-trade shocks are in part responsible for the decline of schooling attainment (see, for example, Behrman, Duryea, and Szekely 1999).

12.2.4 Composition and distribution of growth also matter

Although economic growth is the engine of poverty reduction, it works more effectively in some situations than in others.⁷ Two key factors that appear to determine the impact of growth on poverty are the distributional patterns and the sectoral composition of that growth.

In as much as the benefits of growth are translated into poverty reduction through the existing distribution of income, then more equal societies will be more efficient transformers of growth into poverty reduction. A number of empirical studies have found that the responsiveness of income poverty to growth increases significantly as inequality is lowered.⁸ This finding is supported by a recent cross-country study that found that the more equal the distribution of income in a country, the greater the impact of growth on the number of people in poverty (Ravallion 1997). Others have suggested that greater equity comes at the expense of lower growth and that there is a tradeoff between growth and equity when it comes to poverty reduction.⁹ A large number of recent empirical studies, however, have found that there is not necessarily such a tradeoff¹⁰ and that equity in its various dimensions is growth enhancing.¹¹

The sectoral composition of growth also can determine the affect that growth will have on poverty. Conventional wisdom has it that growth in sectors of the economy where the poor are concentrated will have a greater impact on reducing poverty than growth in other sectors. For example, it is often argued that in countries where most of the poor live in rural areas, agricultural growth reduces poverty because it generates income for poor farmers and increases the demand for goods and services that can easily be produced by the poor (see chapter 15, “Rural Poverty”).¹² Various country-specific and cross-country studies also have shown that growth in the agricultural and tertiary sectors has had a major effect on reducing poverty, while growth in manufacturing has not.¹³ This reinforces the case for tariff-free access to the markets of industrialized countries for agricultural exports from low-income countries. The linkage may be more complex over the long run, however. While faster growth in agriculture may address rural poverty in the short term, reliance on agricultural activity may also intensify output variability, which in turn would contribute to increasing rather than decreasing poverty. A more diversified economy with a vibrant manufacturing sector might offer the best chances for sustainable improvement in living standards in the long run.

12.2.5 Implications for macroeconomic policy

The implications of these empirical findings for macroeconomic policy are threefold. First, in light of the importance of growth for poverty reduction and of macroeconomic stability for growth, the broad objective of macroeconomic policy should be the establishment or strengthening of macroeconomic stability. Policymakers should therefore define a set of attainable macroeconomic targets (that is, growth, inflation, external debt, and net international reserves), with the objective of maintaining macroeconomic stability, and pursue macroeconomic policies (fiscal, monetary, and exchange rate) consistent with those

Box 12.2. Macroeconomic Stability

Macroeconomic stability exists when key economic relationships are in balance; for example, between domestic demand and output, fiscal revenues and expenditure, and savings and investment, as well as the balance of payments. These relationships, however, need not necessarily be in exact balance. Imbalances such as fiscal and current account deficits or surpluses are perfectly compatible with economic stability provided that they can be financed in a sustainable manner.

There is no unique threshold between stability and instability for each macroeconomic variable. Rather, there is a continuum of combinations of levels of key macroeconomic variables, including growth, inflation, fiscal deficit, current account deficit, and international reserves, that together can indicate macroeconomic instability. The combination of these factors can make it relatively easy to identify a country in a state of macroeconomic instability (for example, large current account deficits financed by short-term borrowing, high and rising levels of public debt, double-digit inflation rates, and stagnant or declining GDP) or stability (for example, current account and fiscal balances consistent with low and declining debt levels, inflation in the low single digits, and rising per capita GDP). However, there is a substantial gray area in between where countries enjoy a degree of stability, but where macroeconomic performance could clearly be improved.

Finally, macroeconomic stability depends not only on the macroeconomic management of an economy, but also on the structure of key markets and sectors. To enhance macroeconomic stability, countries need to support macroeconomic policy with structural reforms that strengthen and improve the functioning of these markets and sectors.

targets. In cases where macroeconomic imbalances are less severe, a range of possible targets may be consistent with the objective of stabilization. Precise targets can then be set within that range, in accordance with the goals and priorities of a country's poverty reduction strategy (see section 12.4.2).

Second, most developing countries will likely have substantial scope for enhancing the quality of growth—that is, the degree to which the poor share in the fruits of such growth—through policies aimed at improving income distribution. These policies, which could include land tenure reform, changes in marginal and average tax rates, and increases in pro-poor social spending, often are politically charged and usually require supporting structural and governance reforms that would empower the poor to demand resources or ensure that resources intended for them are not diverted to other sectors of the population. Because these topics pertain broadly to political economy rather than exclusively to macroeconomics, they are beyond the scope of this chapter. But they reinforce the point that economic growth alone is not sufficient for poverty reduction and that complementary redistributive policies may be needed to ensure that the poor benefit from growth.

Finally, while issues regarding the composition of growth also go beyond strict macroeconomics, several general policy observations can be made. There is a general consensus that policies that introduce distortions in order to influence growth in a particular sector can hamper overall growth. The industrial policies pursued by many African developing countries in the 1960s have long been discredited (World Bank 1982). Instead, strategies for sector-specific growth should focus on removing distortions that impede growth in a particular sector. In addition, policymakers should implement policies that empower the poor and create the conditions that would permit them to move into new as well as existing areas of opportunity, thereby allowing them to better share in the fruits of economic growth. The objectives of such policies should include creating a stable environment and level playing field conducive to private sector investment and broad-based economic growth; removing the cultural, social, and economic constraints that prevent the poor from making full use of their existing asset base and that deny them access to markets; and increasing the human capital base of the poor through the provision of basic health and education services. Using these policies and the redistributive policies described above, policymakers can target “pro-poor” growth—that is, they can attempt to maximize the beneficial impact of sustained economic growth on poverty reduction.

12.3 Macroeconomic Stability and Economic Growth

Broadly speaking, two considerations underlie macroeconomic policy recommendations. First, there needs to be an assessment of the appropriate policy stance to adopt in a given set of circumstances; that is, should fiscal or monetary policy be tightened or loosened. Second, the choice must be made of the specific macroeconomic policy instruments that would be beneficial for a country to adopt (for example, the use of a nominal anchor or a value-added tax [VAT]). In practice, these two considerations are closely linked. Adjusting a policy stance is often done via the adoption of a new instrument or the modification of an existing one. More important, both considerations are essential to efforts to enhance an economy's stability.

The policy stance taken must fit each country's particular situation, which will fall into one of three broad classes: (1) instability/disequilibrium, (2) stabilization (for example, transition from instability to stability), and (3) stability/steady economic growth. This section briefly discusses how macroeconomic policies can contribute to stability. For countries that enjoy stable macroeconomic conditions, there is somewhat greater flexibility in the choice of an appropriate stance on macroeconomic policy. The central issue for these countries is to ensure that the financing of their poverty reduction strategies does not jeopardize macroeconomic stability (see section 12.4).

12.3.1 Sources of instability

There are two main sources of economic instability: exogenous shocks and inappropriate policies. Exogenous shocks—for example, terms-of-trade shocks, natural disasters, and reversals in capital flows—can throw an economy into disequilibrium and require compensatory action. For example, many low-

income countries have a narrow export base, often centered on one or two key commodities. Shocks to the world price of these commodities can therefore have a strong impact on the country's income. Diversified economies also are routinely hit by exogenous shocks, but their greater diversification means that such shocks usually would need to be particularly large or long lasting to destabilize the economy of such a country. Alternatively, a disequilibrium can be self-induced by poor macroeconomic management: for example, an excessively loose fiscal stance can increase the aggregate demand for goods and services, placing pressure on a country's external balance of payments and on domestic price levels. Economic crises at times are the result of a combination of external shocks and poor management.

12.3.2 Stabilization

In most cases, addressing instability (that is, seeking stabilization) will require policy adjustment, whereby a government will introduce new measures, possibly combined with new policy targets, in response to a change in circumstances.¹⁴ Adjustment will typically be necessary if the source of instability is a permanent (that is, systemic) external shock or the result of earlier, inappropriate macroeconomic policies. If the source of instability can be clearly identified as a temporary shock, such as a one-time event, it may be appropriate for the country to merely accommodate it.¹⁵ Identifying whether a shock is temporary or is likely to persist is easier said than done, however. Since uncertainty often surrounds such a judgment, it is usually wise to err on the side of caution by assuming that an adverse shock will largely persist and by basing the policy response on the appropriate adjustment.

In most circumstances where adjustment is necessary, both monetary (or exchange rate) and fiscal instruments will have to be used. In particular, successful adjustment to a permanent unfavorable shock that worsens the balance of payments will often require a sustained tightening of the fiscal stance, as this is the most immediate and effective way to increase domestic savings and to reduce domestic demand—two objectives typically at the center of stabilization programs.

Adjustment policies may contribute to a temporary contraction of economic activity, but this contingency should not be used to argue against implementing adjustment policies altogether because the alternative may be worse. Attempting to sustain aggregate demand through unsustainable policies will almost certainly aggravate the long-run cost of a shock, and could even fail in the short-run to the extent that it undermines confidence. In the long run, the restoration of macroeconomic stability will deliver the greatest benefits to the poor. The appropriate policies to protect the poor during adjustment are to maintain, or even increase, social expenditures and where feasible to adopt compensatory measures that insulate against or offset temporary adverse impacts to the fullest extent possible.¹⁶ This is best done by devoting resources to the establishment of effective social safety nets¹⁷ as an enduring part of a country's poverty reduction strategy rather than as a response to crisis. Countries that lack such resources/safety nets could be forced to either subject their poor to the short-term adverse effects of stabilization or to delay the pace at which macroeconomic adjustment proceeds, and to therefore delay the corresponding long-term benefits to economic growth and poverty reduction.

Countries in macroeconomic crisis typically have little choice but to stabilize quickly, but for countries in the gray area of partial stability, finding the right pace may prove difficult. In some cases, a lack of financing will drive the pace of stabilization. Where financing is not a constraint, however, policymakers will need to assess and carefully weigh the various factors on a case-by-case basis when choosing the most appropriate pace of stabilization.

12.3.3 Elements of macroeconomic stability

Macroeconomic policies influence and contribute in a variety of ways to the attainment of rapid, sustainable economic growth aimed at poverty reduction. By pursuing sound economic policies, policymakers can send clear signals to the private sector. The extent to which they are able to establish a track record of policy implementation will influence private sector confidence, which will in turn affect investment, economic growth, and poverty outcomes.

Prudent macroeconomic policies can result in low and stable inflation. High inflation hurts the poor by lowering growth and by redistributing real incomes and wealth to the detriment of those in society

least able to defend their economic interests. It can also introduce high volatility in relative prices and make investment risky. Rapid disinflation—except where the starting point is very high inflation—can also have short-run output costs that need to be weighed against the costs of allowing inflation to continue unchecked.

By moving toward debt sustainability, policymakers will help create the conditions for steady and continuous progress on growth and poverty reduction by removing uncertainty as to whether or not a government will be able to service new debt. By keeping domestic and external debt at levels that can be serviced in a sustainable manner without unduly squeezing nondebt expenditure, policymakers can also ensure that adequate domestic resources are available to finance essential social programs.

Inappropriate exchange rate policies distort the composition of growth by influencing the price of tradable versus nontradable goods. Household survey data for a number of countries indicate that the poor tend to consume relatively larger amounts of nontradable goods while generating relatively more of their income from tradable goods (Sahn, Dorosh, and Younger 1997). In addition to distorting trade and inhibiting growth, an overly appreciated exchange rate therefore can impair the relative incomes and purchasing power of the poor.

By building and maintaining an adequate level of net international reserves, a country can weather a temporary shock without having to reduce essential pro-poor spending. External shocks can be particularly detrimental to the poor because they can lower real wages, increase unemployment, reduce nonlabor income, and limit private and net government transfers. The level of adequate reserves depends on the choice of exchange rate regime.

12.4 Growth-Oriented Macroeconomic Policies and Poverty Outcomes

Recent data indicate that many developing countries are at present in a state of macroeconomic stability (tables 12.1–12.3). When formulating a country’s poverty reduction strategy, policymakers need to assess and determine what is the most appropriate combination of key macroeconomic targets that would preserve macroeconomic stability in their particular circumstances. Three key issues are discussed in this section: (1) how to finance poverty-reducing spending in a way that does not endanger macroeconomic stability, (2) what policies can improve macroeconomic performance, and (3) what policies can protect the poor from domestic and external shocks.

12.4.1 Financing poverty reduction strategies

Once a country has developed a comprehensive and fully costed draft of its poverty reduction strategy, it will need to ensure that the strategy can be pursued and financed in a manner that does not jeopardize its macroeconomic stability and growth objectives.¹⁸ To ensure that this is achieved, policymakers need to integrate their poverty reduction and macroeconomic strategies into a consistent framework. The following paragraphs present a conceptual framework that could be useful to policymakers in determining if their poverty reduction strategy is consistent with their macroeconomic objectives.

Given that it is difficult to determine beforehand what the growth target should be, policymakers may wish to consider developing alternative macroeconomic scenarios that take into consideration possible variations in the rate of economic growth. Such scenarios could be usefully discussed with stakeholders and development partners with a view to assessing the impact of lower-than-projected economic growth on key macroeconomic targets and poverty outcomes and to developing appropriate contingencies. The most likely or “base case” scenario can then be used as the basis for carrying out an initial attempt aimed at integrating the macroeconomic and poverty reduction strategies into a consistent framework. Once this has been accomplished, similar exercises could be carried out regarding the other contingency scenarios for reference during the implementation stage of the strategy.

Figure 12.1 shows the various macroeconomic linkages and constraints within a country and highlights the main tradeoffs facing policymakers. The starting point is the initial articulation of the country's poverty reduction strategy, based on discussions with representatives of the government, stakeholders, and development partners. Ideally, these discussions will have resulted in the development of a comprehensive action plan that identifies priority sectoral policies to be pursued in support of poverty reduction, including in the areas of education, health, and rural infrastructure. Given that poverty is multidimensional, the action plan will also likely include priority measures for governance, structural reform, and other relevant areas, each of which may have budgetary implications.

The first step is to provide a full costing of the envisaged poverty reduction strategy. A comprehensive system for budget formulation of poverty reduction strategies requires the development of medium-term expenditure frameworks (MTEFs), which currently exist in only a few countries (for example, Ghana and Uganda). Details of how such costing exercises can be carried out are presented in chapter 6, "Public Spending."

The second step involves an assessment of the government's spending program with regard to priority spending, nondiscretionary spending, and discretionary nonpriority spending. When conducting such an assessment, policymakers should consider the scope for reallocating existing government spending into priority areas and away from nonproductive, nonpriority spending, as well as from areas where a rationale for public intervention does not exist.

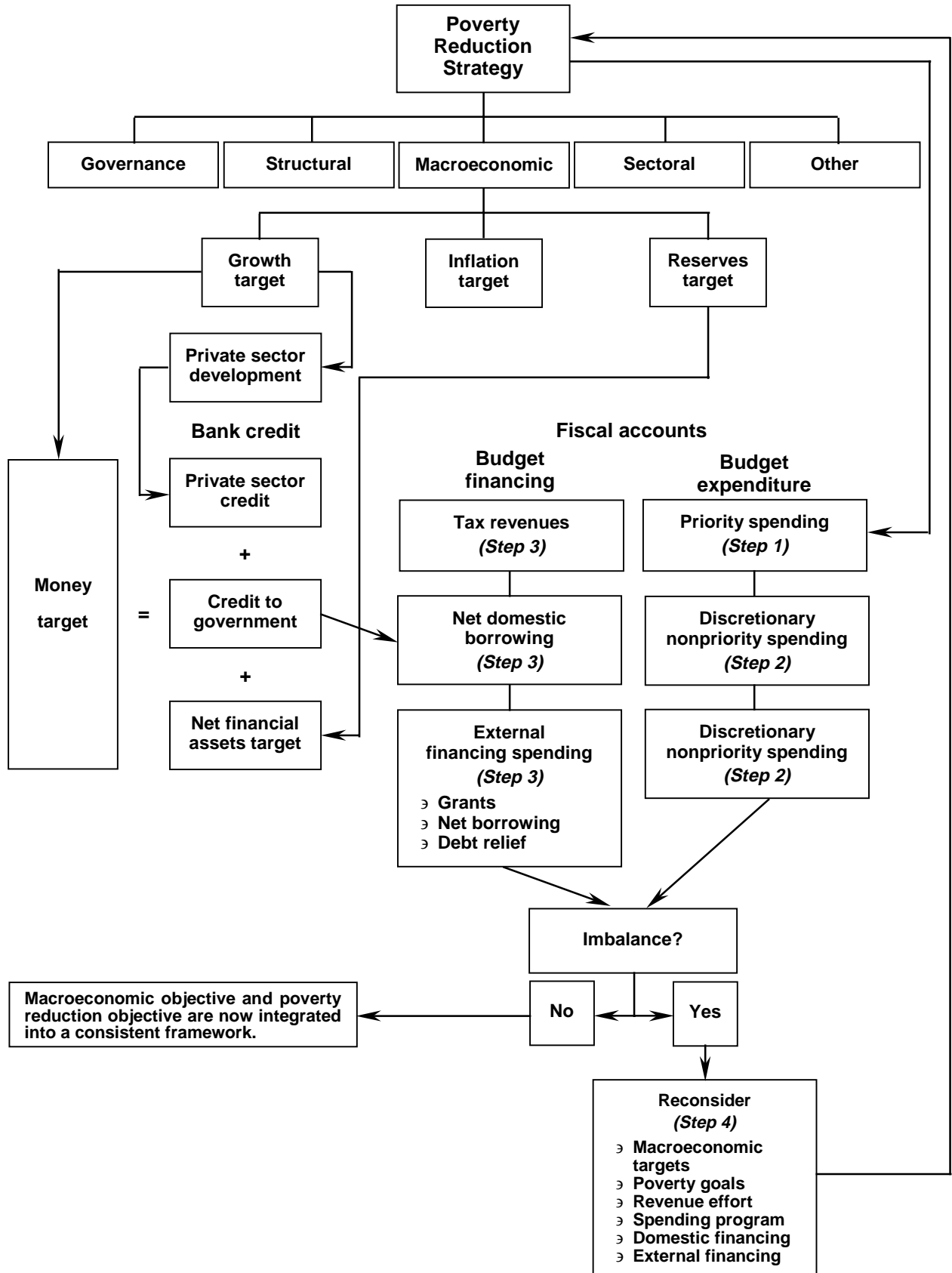
The third step involves an assessment of domestic and external sources of budget finance. This would include a review of (1) the existing tax and nontax revenue base, including the likely effect of any changes in the tax system envisaged under the poverty reduction strategy; (2) the scope for financing public spending through net domestic borrowing in light of the need to maintain macroeconomic stability and to ensure adequate availability of credit to in support of private sector development and economic growth; and (3) the scope for external financing (for example, grants, net external borrowing, and debt relief) that is realistic and sustainable under existing circumstances.

Once policymakers have carried out these assessments, they can then determine if the desired poverty reduction strategy can be financed in a manner consistent with the country's growth and stability objectives. There are no rigid, predetermined limits regarding a country's fiscal stance (such as, for example, "the budget deficit must not be more than x percent of GDP"). Rather, arriving at an appropriate, integrated poverty reduction and macroeconomic framework will require juggling a large number of parameters and weighing the tradeoffs between multiple objectives. The linkages in figure 12.1 illustrate that this is an iterative process. In this regard, quantitative frameworks to assist policymakers in assessing the distributional implications of their macroeconomic policies are particularly useful (see box 12.3).

If there remains an imbalance between spending and expected financing that could jeopardize realizing a country's macroeconomic growth and stability objectives, one option would be to ascertain the extent to which additional external financing may be available. As discussed earlier, policymakers would first need to assess the extent to which accommodating such expenditure could place pressure on the price of nontraded goods and jeopardize stability. Since the development of a poverty reduction strategy involves a participatory process that includes the country's development partners, the case for additional donor support can be examined. To the extent possible, donors should be encouraged to make medium-term aid commitments in support of the poverty reduction strategy so that the country can be confident that its new spending programs can be sustained.¹⁹

If the desired poverty reduction program cannot be financed in a manner consistent with the country's economic stability and growth objectives, policymakers will need to reconsider these parameters. Key questions would include: Is there further scope for domestic revenue mobilization? Can discretionary nonpriority spending be cut back more? Is there scope for cutting back certain priority spending without undermining the poverty reduction objective? Can the domestic financing target be relaxed without jeopardizing macroeconomic stability or private sector development objectives? Can the macroeconomic targets be modified in a way that would not undermine the interrelated objectives of rapid economic growth, low and stable inflation, and poverty reduction? The answers to these questions will determine the extent to which the desired poverty reduction programs can be pursued.

Figure 12.1. Financing Poverty Reduction Strategies in a Sustainable Manner



Box 12.3. Quantitative Frameworks for Assessing the Distributional Impact of Macroeconomic Policies

In developing poverty reduction strategies, policymakers benefit from a quantitative framework that they can use to assess the distributional impact of the macroeconomic policy options under consideration. The links between macroeconomic policies and poverty are complex, and a quantitative framework that identifies the critical relationships on which the outcome depends can assist in the assessment of these tradeoffs.

Such a framework should be capable of identifying some of the critical tradeoffs in poverty-reducing macroeconomic policies. For example, how do the costs (in terms of poverty) of higher spending and higher fiscal deficits compare with the benefits of targeting that spending on the poor? Second, the framework should be consistent with both economic theory and basic data availability, such as national accounts and household income and expenditure surveys, to be able to foster a dialogue between conflicting parties on these issues. Third, and most important, the framework should be simple enough that government officials can use it on their desktop computers. It should not make undue demands on data, and it should be based on readily available spreadsheet software.

World Bank staff are developing alternative quantitative frameworks for use in evaluating some of the macroeconomic aspects of poverty reduction strategies.^a It is expected that other quantitative frameworks will be developed to assist country teams in this regard. In developing this particular framework, the authors opted for a modular approach that allows different models to be incorporated as alternative subcomponents of the overall framework.

a. See Devarajan and others (2000).

12.4.2 Fiscal policy

Fiscal policy can have a direct impact on the poor, both through the government's overall fiscal stance and through the distributional implications of tax policy and public spending. Structural fiscal reforms in budget and treasury management, public administration, governance, transparency, and accountability can also benefit the poor through inducing more efficient and better-targeted use of public resources. As indicated above, there is no rigid, predetermined limit on what would be an appropriate fiscal deficit; this should instead be assessed based on the particular circumstances facing a country, its medium-term macroeconomic outlook, and the scope for external budgetary assistance. The terms on which external assistance is available are also important. There is a strong case, for instance, for allowing higher grants to translate into higher spending and deficits, to the extent that those grants can reasonably be expected to continue in the future, and provided that the resources can be used effectively.

With regard to the composition of public expenditure, policymakers need to assess not only the appropriateness of a proposed poverty reduction spending program but also of planned nondiscretionary and discretionary nonpriority spending. They should take into particular consideration the distributional and growth impact of spending in each area and should place due emphasis on spending programs that are pro-poor, such as certain programs in health, education, and infrastructure, and on the efficient delivery of essential public services. In examining these expenditures, policymakers should evaluate the extent to which government intervention in general, and public spending in particular, can be justified on grounds of market failure or redistribution.

Policymakers must also ask themselves whether the envisaged public goods or services can be delivered efficiently to their intended beneficiaries and, if not, whether mechanisms or incentives can be put in place to achieve efficient delivery. Countries should begin by assessing their administrative capacity at both the national and subnational levels to deliver well-targeted, essential public services in support of poverty reduction. Policymakers should consider the extent to which both technical assistance and the private sector can play a role in improving the delivery of these services.

In the context of medium-term budget planning, policymakers should consider the scope for reallocating government spending into priority areas²⁰ and away from nonproductive spending—including spending in areas where a rationale for public intervention does not exist. Operation and maintenance expenditure tied to capital spending should also be carefully reviewed. The quality of public expenditure could be assessed in the context of a public expenditure review with the assistance of multilateral or bilateral donors. Policymakers could then assess the new poverty reduction projects and activities that have been identified in the context of the poverty reduction strategy and integrate them into the preliminary spending program. They should attempt to rank the poverty programs in order of relative importance in line with the country's social and economic priorities, the identified market failure/redistribution criteria, and the country's absorptive capacity in light of existing institutional and administrative constraints. If spending cuts are deemed necessary in the context of the integrated poverty

reduction/macroeconomic framework, policymakers should refer back to the ranking of the spending program according to the relative importance and priority assigned to each activity.

A key aspect of any poverty reduction strategy is an assessment of the impact of the existing tax and nontax system on the poor. An important medium-term objective for many developing countries will be to raise domestic revenue levels with a view to providing additional revenue in support of their poverty reduction strategies.²¹ The existing revenue base should be reviewed relative to its capacity to provide for the poverty spending requirements from nonbank domestic financing. Revenues should be raised in as economically neutral a manner as possible, while taking into consideration equity concerns and administrative capacities (see box 12.4).

In a developing country, allocational effects mean that the tax system in particular should not attempt to affect savings and investment: experience indicates that aggregate savings and investment tend to be insensitive to taxes, with the result that the tax system typically only affects the allocation of those aggregates across alternative forms. As regards equity, the tax system's direct and indirect impacts on the poor should be assessed. It is difficult to have a tax system that is both efficient and progressive, particularly in countries that lack a well-developed tax administration. Governments should therefore seek to achieve a distribution of tax burdens that is seen as broadly fair rather than use the tax system to achieve a drastic income redistribution.

Tax policy should aim at moving toward a system of easily administered taxes with broad bases and moderate marginal rates. To the extent that some revenue provisions may be regressive, they should be offset through the expenditure system; for example, transitory, well-targeted food subsidies could offset the impact of a broad-based consumption tax and cushion the adverse impact of adjustment policies on the poor. Finally, where revenue systems are administered by a civil service that is constrained in terms of human resources, technical support, and funding, countries should rely heavily on final withholding and keep to the absolute minimum any exemptions, special provisions, or multiple rates.

The scope for domestic budgetary financing will depend on a number of factors, including the sustainable rate of monetary growth, the credit requirements of the private sector, the relative productivity of public investment, and the desired target for net international reserves. Sacrificing low inflation (through faster monetary growth) to finance additional expenditure is generally not an effective means to reduce poverty because the poor are most vulnerable to price increases. At the same time, since private sector development stands at the center of any poverty reduction strategy, governments need to take into account the extent to which public sector borrowing crowds out the private sector's access to credit, thereby undermining a country's growth and inflation objectives. At times, public sector borrowing can also "crowd in" private sector investment by putting in place the critical infrastructure necessary for private enterprise to flourish. Given that at any time there is a finite amount of credit available in an

Box 12.4. Tax Policy

The best tax systems typically include most or all of the following elements:

- ③ *A broad-based consumption tax, such as a VAT, preferably with a single rate, minimal exemptions, and a threshold to exclude smaller enterprises from taxation. The VAT generally should extend through the retail sector and should apply equally to domestic production and imported goods and services. It should cover agricultural products and inputs, subject to a threshold that should exclude small farmers.*
- ③ *Excise taxes should apply to petroleum products, alcohol, and tobacco; should be collected at the point of production or import; and should apply equally to domestic production and imports.*
- ③ *Taxes on international trade should play a minimal role. Import tariffs should have a low average rate and a limited dispersion of rates to reduce arbitrary and excessive rates of protection. Exemptions should be kept at a minimum, and nontariff barriers should be avoided altogether. Exporters should have duties rebated on imported inputs used for producing exports, and export duties should generally be avoided.*
- ③ *The personal income tax should be characterized by only a few brackets and a moderate top marginal rate, by limited personal exemptions and deductions, by a standard exemption that excludes persons with low incomes, and by extensive use of final withholding.*
- ③ *The corporate income tax should be levied at one moderate rate. Depreciation allowances should be uniform across sectors, and there should be minimal use of tax incentives other than permitting net operating losses to be carried forward for some reasonable period of time.*

The use of a simplified regime for small businesses and the informal sector may complement these major taxes. Real property taxes may also be used if they can be administered appropriately, though this may be difficult in developing countries.

economy, policymakers must therefore assess the relative productivity of public investment versus private investment and determine the amount of domestic budgetary financing that would be consistent with the need to maintain low inflation and support sustainable economic growth.

The amount and type of external resources available to finance a budget will vary depending on the circumstances facing a country. Countries that have access to external grants need to consider how much is available and sustainable under existing circumstances. The same is true in the case of external debt, but policymakers also need to determine if the terms on such borrowing are appropriate and if the added debt burden is sustainable. To the extent that a country is benefiting from, or may benefit from, external debt relief under the enhanced Heavily Indebted Poor Countries (HIPC) Initiative, net resource flows—flows that are predictable over the medium term—will be freed up to finance poverty-related budgetary expenditure. Domestic debt reduction could also represent a viable use of additional concessional foreign assistance, since it would permit government resources to be directed at priority poverty expenditure and free up additional domestic credit for use by the private sector.

There may be a limit to the amount of additional external financing that a country deems to be appropriate, however. For example, there may be absorptive capacity constraints that could drive up domestic wages and prices, and appreciate the exchange rate and render the country's exports less competitive, thereby threatening both stability and growth. The magnitude of such pressures depends on how much of the additional aid is spent on imports versus domestic nontraded goods and services. There may also be uncertainty regarding aid flows, especially over the medium term, as well as considerations regarding long-term dependency on external official aid. In the absence of medium-term commitments of aid, policymakers should therefore choose to be cautious in assuming what levels of assistance will be forthcoming in the future.

12.4.3 Monetary and exchange rate policies

Monetary and exchange rate policies can affect the poor primarily through three channels: inflation, output, and the real exchange rate. Inflation hurts the poor because it acts as a regressive tax and curbs growth. Fluctuations in output clearly have a direct impact upon the incomes of the poor, and monetary and exchange rate policies affect these fluctuations in two ways. First, changes in the money supply can have a short-run effect on real variables such as the real interest rate,²² which in turn affects output. Second, a country's chosen exchange rate regime can either buffer or amplify exogenous shocks. Finally, the real exchange rate²³ can affect the poor in two ways. First, it influences a country's external competitiveness and, hence, its growth rate. Second, a change in the real exchange rate (through, for example, a devaluation of the nominal rate) can have a direct impact on the poor.²⁴

Given that monetary and exchange rate policies affect the poor through their effect on inflation, output, and the real exchange rate, it might seem at first glance that policies that target all three of these variables should therefore be used. However, although monetary and exchange rate policies may affect the poor through all of these channels, the monetary authorities cannot necessarily control the size and nature of the resulting impact. For example, changes in the money supply may affect output and employment in the short run, but they do so in a way that is at best uncertain and imperfectly understood. As a result, the monetary authorities are typically unable to exploit this impact systematically. Monetary and exchange rate policies similarly are unable to manipulate the real exchange rate beyond a short period: active use of these policies to pursue a particular short-run exchange rate goal (which may be inconsistent with underlying economic fundamentals) could therefore introduce instability.

Monetary and exchange rate policies should target those variables over which they have the most control, namely, the long-run impact of inflation on the rate of growth. Broadly speaking, this can be achieved by setting a single objective for monetary and exchange rate policies: the attainment and maintenance of a low and stable rate of inflation. In practice this means (1) choosing, and firmly committing to, an inflation rate target within the context of the overall poverty reduction strategy and the associated macroeconomic framework, (2) setting a target in the single-digit-a-year range, the precise target depending on the country's history of inflation and stage of development, (3) adopting the required policies to achieve that target, and (4) employing monetary and exchange rate policies primarily

to pursue, overtly or otherwise, additional or alternative objectives. Formulated and implemented in this way, monetary and exchange rate policies can form the basis for a stable macroeconomic environment.

Improving inflation performance

In some cases, it may be desirable to target a lower rate of inflation. What policies can help meet this objective? Ultimately, this question has to be answered on a case-by-case basis; policymakers should, however, consider two general policies that are essential parts of any effort to improve inflation performance: strong, sustained fiscal adjustment and the use of a nominal anchor and other measures (for example, inflation targeting) to enhance policy credibility.

Fiscal adjustment

A loose fiscal stance can put upward pressure on prices through the channels of aggregate demand and financing. A loose stance increases the demand for domestic goods, and this, in the absence of a corresponding increase in supply, puts upward pressure on prices. It can also increase demand for imports, putting downward pressure on the value of the domestic currency and, hence, in a flexible exchange rate regime, upward pressure on the price of imported goods. Furthermore, if a loose fiscal stance is financed by printing money, this will expand the money supply and tend to increase inflation.

In theory, if inflationary pressures from the fiscal stance are transmitted exclusively through the financing channel, they can be reduced without fiscal adjustment if alternative, sustainable sources of financing, such as external financing, are available. In practice, however, some fiscal adjustment is typically also necessary because either the amount of alternative finance is insufficient or the fiscal stance is putting upward pressure on prices through the aggregate demand channel. Evidence shows that successful disinflation episodes have typically been accompanied by sizable and sustained fiscal adjustment (Phillips 1999). Countries that wish to target a significantly lower rate of inflation therefore need to ensure that the corresponding fiscal adjustment is adequate.

Credibility and nominal anchors

Setting policy targets is important; consistently achieving those targets is equally important. When targets under a policy are regularly missed, the policy loses credibility. If a policy lacks credibility, the private sector will not believe that the authorities are truly committed to their policy targets and therefore will not fully factor those targets into its inflation expectations, for example, when setting wage bargains. This can result in an inflation bias—that is, higher inflation outcomes brought on solely by the lack of policy credibility itself.

Credibility can sometimes be enhanced by imposing restrictions on policy (that is, limiting the degree of discretion of the monetary authorities) or by adopting specific institutional arrangements. For example, the adoption of a fixed exchange rate regime involves a commitment to exchange domestic currency for foreign currencies at a predefined rate. This imposes an automatic discipline upon domestic monetary policy. In effect, control over monetary policy is surrendered to the central bank of the country whose currency has been chosen as the peg—typically a low-inflation country—which, in turn, imparts credibility to the domestic policy objective of achieving low inflation.

More generally, evidence shows that inflation performance has been better in countries using a nominal anchor (Phillips 1999). Using a nominal anchor involves specifying and committing to a predetermined path for a nominal variable—such as the exchange rate (the fixed exchange rate discussed above would be a nominal anchor) or a money aggregate—that is to a certain degree under the control of the authorities.²⁵ If the variable threatens to deviate from its targeted path, the authorities take corrective action.²⁶ In this way, inflation, and inflationary expectations, can be anchored.

In some countries, fixed exchange rate regimes have clearly been effective in establishing and maintaining low inflation. There is empirical evidence that inflation performance has been better in countries running fixed exchange rate regimes (see, for example, Ghosh and others 1995). However, the choice of a fixed exchange rate has to be based on broader considerations than simply its merits as a nominal anchor.

In particular, the underlying structural features of an economy need to be supportive of a fixed regime—for example, the degree of price rigidity, the nature of its predominant exogenous shocks, or the degree of political support (these issues are discussed below). Adopting a fixed exchange rate regime to serve only temporarily as a nominal anchor is risky because exiting a fixed regime once inflation performance is satisfactory can be difficult. Moreover, if a country's economic conditions are not supportive or political support for the policy is insufficient, the peg could come under pressure that could force a costly abandonment of the regime and thus undermine the original objective of stabilizing inflation.

Both types of nominal anchors restrict the use of monetary instruments.²⁷ A standard critique has been that, although the use of a nominal anchor may improve inflation performance, it comes at the cost of reducing the discretion of the authorities to respond to short-run shocks. In practice this tradeoff may not be significant, however. Even if the monetary authorities have full discretion,²⁸ as discussed above, their ability to influence short-run output movements systematically is limited. Moreover, their ability to exercise discretion is likely to be limited by the need to preserve or enhance policy credibility.

Inflation targeting has in recent years been adopted as the monetary regime in an increasing number of industrialized and developing countries. It is typically and preferably associated with a flexible exchange rate system. Inflation targeting sets an inflation target for the central bank and gives the responsibility for achieving that target to the bank. To enhance accountability, credibility, and efficiency, the central bank in an inflation-targeting regime is generally required to be extremely transparent about its operations and to explain its decisions to the public, publishing, in most cases, a regular inflation report.

In the long run, however, only policies to which the authorities are fully committed can be credible. Imposing restrictions on policy when the necessary policy commitment is absent (or even should the private sector erroneously suspect a lack of commitment) can have disastrous results. For example, the belief on the part of the private sector that a country's authorities are not committed to defending its fixed exchange rate may lead to a speculative attack on the peg. Although devices exist that may accelerate the attainment of credibility for a policy, there is no substitute for actual commitment to the policy, as demonstrated through sustained adherence to a prudent macroeconomic stance.

External shocks and the choice of exchange rate regime

The choice of exchange rate regime—fixed or flexible—depends crucially on the nature of the economic shocks that affect the economy and on the structural features of the economy that may either mitigate or amplify these shocks. Choosing a fixed exchange rate regime when the underlying features of the economy are not supportive leaves a country exposed to the possibility of an external crisis, which can result in the abandonment of the peg. In addition, shocks to output can have a strong impact on the poor. Since different exchange rate regimes have different insulating properties according to the type of shock, choosing the regime that best insulates the economy will serve to moderate fluctuations in output and thereby best serves the poor.

For example, if the predominant source of disturbance to an economy is shocks to the terms of trade, a flexible exchange rate regime may be best because the nominal exchange rate is free to adjust in response to the shock and bring the real exchange rate to its new equilibrium (see, for example, Devarajan and Rodrik 1992). Alternatively, if domestic monetary shocks predominate, such as shocks to the demand for money, output may be best insulated by a fixed exchange rate that allows these shocks to be absorbed by fluctuations in international reserves. Of course, one of the challenges facing the policymaker is to identify which shocks are predominant in a particular economy.

The structural features of the economy may also affect the impact a particular shock has on the economy, as well as the insulating properties of exchange rate regimes. For example, if an economy is characterized by a significant degree of nominal wage rigidity, wages will not fully adjust, at least in the short run, in response to small real shocks; hence, the effect of those shocks on output will be amplified. In these circumstances, even if domestic monetary shocks are important, a flexible exchange rate regime may well be preferable (in contrast to the conclusions above). Another important structural feature is the degree of an economy's openness. Typically, the more open an economy is, the greater is its exposure to external shocks.

This would argue generally in favor of a flexible exchange rate regime. However, if an open economy is sufficiently diversified (that is, it trades a wide range of goods and services) and if its prices are sufficiently flexible, then a fixed exchange rate may be preferable because the volatility of flexible exchange rates may impede international trade and thus lower external demand (although the evidence on this is mixed). In conclusion, the various pros and cons of fixed versus flexible exchange rate regimes need to be carefully assessed and weighed on a case-by-case basis—again, there is no universal right answer.

12.4.4 Policies to insulate the poor against shocks

The problem of how to protect the poor against macroeconomic shocks has two parts: how to cushion the impact of shocks on the poor, in particular during times of crisis or adjustment, and how to insulate the poor from the consequences of shocks by removing distortive policies.

Social safety nets

Sound macroeconomic policies will help a country to reduce its exposure to macroeconomic shocks, but there is no cost-effective policy that will ensure against all possible shocks. It is therefore crucial to have social safety nets in place to ensure that poor households are able to maintain minimum consumption levels and access to basic social services during periods of crisis (see chapter 17, “Social Protection”). Social safety net measures are also necessary to protect the poor from shocks dealt to them during periods of economic reform and adjustment.²⁹ Safety nets include public work programs, limited food subsidies, transfers to compensate for income loss, social funds, fee waivers, and scholarships for essential services such as education and health. The appropriate mix of measures will depend on the particular characteristics of the poor and their vulnerability to shocks, and the measures should be well targeted and designed in most cases to provide temporary support.

Equally important, the resources allocated to social safety nets should be protected during economic crisis or adjustment, when fiscal tightening may be necessary. Governments should have budgetary guidelines approved by their legislatures that prioritize and protect poverty-related programs during periods of crisis and provide a clear course of action that ensures access of the poor to basic social services during periods of austerity (see Lustig forthcoming). As discussed below, countercyclical fiscal policies can also ensure the availability of funds for financing safety nets during periods of crisis.

It is important that safety nets are operating before an economy is hit by a shock (see World Bank 2000). However, if a shock occurs before the appropriate safety nets are in place, “second best” social protection policies may be necessary. Although food subsidies have been found to be inefficient and often ill targeted, and although most reform programs call for their reduction or even elimination, existing food subsidies prevented widespread malnutrition and starvation in the wake of the 1998 East Asian financial crisis in countries such as Indonesia, which lacked a comprehensive safety net. In the context of a country’s reform process, however, such subsidies should be replaced with better-targeted and less distorting transfers to the poor.

Removing market distortions and distortive policies

In addition to pursuing favorable economic policies and putting in place appropriate social safety nets, there are specific structural reforms that governments can undertake to insulate the poor from the adverse consequences of shocks. Most of these have to do with addressing the mechanisms through which the impact of shocks is transmitted to the poor (see box 12.5).

To the extent that asset market distortions prevent the poor from saving and insulating themselves against shocks, policies to remove these distortions can be valuable.³⁰ For instance, foreign exchange controls can force the poor to hold their assets in domestic currency, whose value typically declines with adverse shocks. Relaxing these controls in a well-managed fashion could give the poor access to safer assets, such as foreign currency, that can protect them from devaluations—a typical outcome following negative shocks.³¹ Similarly, severe financial repression, such as controlled interest rates, can impede the

ability of the poor to save.³² Properly managed, financial liberalization policies can therefore have the additional benefit of increasing self-insurance for the poor.

Policies that increase borrower information and relax barriers to access to credit markets can help the poor reduce consumption volatility because credit availability makes them less dependent on current income. Also, to the extent that collateralized credit allocation amplifies the effects of negative shocks by reducing the access of small and medium-sized firms to credit when asset prices fall, policies promoting better financial sector credit allocation mechanisms, based on project profitability and borrower information, could reduce the incidence of shocks being transmitted through this channel to the poor and reduce the indirect effects on the poor of lost employment opportunities.³³

Finally, and most important, governments can do a lot to reduce the procyclical nature of their fiscal policies by saving rather than spending the windfalls that follow positive shocks and, ideally, using those savings as a buffer for expenditures against negative shocks. A cautious approach would be for the government to “treat every favorable shock as temporary and every adverse one as permanent,” although judgment would also depend on, among other things, the availability of financing (Little, Cooper, and Rajapatirana 1993). However, even this rule of thumb may not be enough. Governments need to find ways of “tying their hands” to resist the pressure to spend windfall revenues (Devarajan 1999). For example, when the source of revenue is publicly owned, such as oil or another natural resource, it may be appropriate to save the windfall revenues abroad, with strict rules on how much of it can be repatriated. Countries such as Colombia, Chile, and Botswana have tried variants of this strategy, with benefits not just for overall macroeconomic management but also for protecting the poor during adverse shocks, since saved funds during good times can be applied to the financing of safety nets during crisis.

Box 12.5. How Shocks Harm the Poor: Transmission Channels

Credit markets, as well as safe asset markets for appropriate saving, are major instruments for coping with income volatility. Distortions in these markets curtail the ability of the poor to follow consumption-smoothing patterns. Government behavior in response to shocks is also a major determinant of the effects of these shocks on the poor. Financial sector behavior can also amplify the effects of shocks.

- 3 *Distortions in asset markets.* To self-insure against shocks, agents need to be able to save in assets whose value does not fall when they are needed to compensate for a fall in income. Such saving instruments are typically composed of foreign assets, domestic financial assets, and domestic real assets. Government controls on these asset markets can impede the ability of the poor to use these savings instruments and can cause them to channel their savings into less effective instruments.³⁴
- 3 *Access to and structure of credit markets.* Access of the poor to credit markets, which can buffer the effects of shocks, is extremely limited, in part as a consequence of inadequate information for potential borrowers. The structure of credit markets can also indirectly affect the poor. Firms may find that access to credit is typically collateralized: shocks that drastically reduce the value of collateral will therefore also reduce the access to credit of borrower firms, amplifying the effect of shocks when those firms become credit-constrained. As it is typically the poor that are employed by small firms that depend on collateralized credit, severe downturns therefore can dramatically reduce employment and consequently also the welfare of the poor.
- 3 *Procyclical fiscal policy.* During booms, some governments have decreased export commodity taxes, reduced revenue collection effort, or heavily increased expenditures, amplifying the effects of positive shocks. These policies can make adjustment more severe during busts, with the expenditure cuts that follow a negative shock sometimes falling on social programs and transfers to the poor—just when they are most needed. Examples of these policies include the experience of Côte d’Ivoire in 1976–79 and Colombia in 1975–80. It has also been argued that synchronizing tax policies with shocks tends to obscure the information content of prices on which agents make their saving decisions, leading in many cases to lower saving rates than needed to buffer future adverse shocks (Collier and Gunning 1999).
- 3 *Financial sector vulnerability and transmission to other sectors.* Shocks can also be amplified through the banking system. For example, a negative terms-of-trade shock can adversely affect bank liquidity by reducing demand for domestic deposits, forcing banks to curtail credit rollover and spreading the shock throughout the economy (Inter-American Development Bank [IADB] 1995 and Hausmann 1999). Similarly, a sudden stop in capital flows can render many nontradable goods producers bankrupt because of big swings in relative prices; this may in turn create financial turmoil as loans become nonperforming, spreading the effect of the shock across the financial system (Calvo 1998). Bankruptcies in the nontradable sector may translate into unemployment of the urban poor.

**Table 12.1. Real GDP Growth
(annual percentage change)**

	1994	1995	1996	1997	1998	1999	1994-99 average
High-growth countries							
Mozambique	7.5	4.3	7.1	11.3	12.0	9.0	8.5
Sudan	4.0	25.2	4.0	6.7	5.0	4.0	8.2
Vietnam	8.8	9.5	9.3	8.1	5.8	4.2	7.6
Uganda	6.4	11.5	9.1	4.7	5.6	7.8	7.5
Bhutan	8.1	6.8	5.5	7.8	7.1	7.0	7.1
India	7.9	8.0	7.3	5.0	6.1	6.2	6.8
Togo	16.8	6.8	9.7	4.3	-1.0	3.0	6.6
Myanmar	7.5	6.9	6.4	5.7	5.0	...	6.3
Lao PDR	8.2	7.0	6.8	7.0	4.0	4.0	6.2
Angola	1.4	11.3	11.7	6.6	5.0	-0.1	6.0
Eritrea	9.8	2.9	6.8	7.9	3.9	3.0	5.7
Armenia	5.4	6.9	5.9	3.3	7.2	5.5	5.7
Ethiopia	3.5	6.1	10.9	5.9	-1.0	7.0	5.4
Côte d'Ivoire	2.0	7.0	6.9	5.9	4.5	4.3	5.1
Benin	4.4	4.6	5.5	5.7	4.5	5.0	5.0
Bangladesh	3.8	5.5	5.0	5.3	5.1	4.3	4.8
Senegal	2.9	4.7	5.2	5.0	5.7	5.1	4.8
Rwanda	-50.2	34.4	15.8	12.8	9.5	5.9	4.7
Nicaragua	3.3	4.3	4.7	5.1	4.0	6.3	4.6
Nepal	8.2	3.5	5.3	5.0	2.3	3.4	4.6
Burkina Faso	1.2	4.0	6.0	4.7	6.2	5.2	4.6
Malawi	-10.2	15.4	9.0	4.9	3.1	4.5	4.5
Chad	10.2	1.0	3.7	4.1	8.1	-1.0	4.4
Guinea	4.0	4.4	4.6	4.8	4.4	3.7	4.3
Mali	0.9	6.2	3.2	6.8	3.3	5.3	4.3
Mauritania	4.6	4.6	5.5	3.2	3.2	4.3	4.2
Ghana	3.3	4.0	4.6	4.2	4.7	4.4	4.2
Cambodia	4.0	7.6	7.0	1.0	1.0	4.5	4.2
Niger	4.0	2.6	3.4	3.3	8.3	2.3	4.0
Lesotho	3.4	4.5	10.0	8.0	-5.0	2.5	3.9
Zimbabwe	6.8	-0.5	8.7	3.7	2.5	1.2	3.7
Pakistan	3.9	5.1	5.0	1.2	3.3	3.9	3.7
Yemen, Republic of	-3.6	7.9	2.9	8.1	4.8	2.2	3.7
Central African Republic	4.9	7.2	-4.0	5.2	4.7	3.4	3.6
Mongolia	2.3	6.3	2.4	4.0	3.5	2.7	3.5
Cameroon	-2.5	3.3	5.0	5.1	5.0	4.4	3.4
Tanzania	1.4	2.6	4.3	4.0	3.5	4.3	3.4
Georgia	-11.4	2.4	10.5	11.0	2.9	2.0	2.9
Gambia, The	0.2	0.9	2.2	4.9	4.7	4.2	2.9
Kenya	2.6	4.4	4.1	2.1	1.8	1.6	2.8
Madagascar	0.0	1.7	2.1	3.7	3.9	4.7	2.7
Indonesia	7.5	8.2	7.8	4.7	-13.2	0.2	2.5
Nigeria	0.1	2.5	4.3	2.7	1.8	1.0	2.1
Solomon Islands	5.2	7.0	3.5	-0.5	-7.0	4.0	2.0
São Tomé and Príncipe	2.2	2.0	1.5	1.0	2.5	2.5	2.0
Low-growth countries							
Congo, Republic of	-5.5	4.0	6.3	-2.4	3.6	-0.7	0.9
Haiti	-8.3	4.4	2.7	1.4	3.1	...	0.7
Zambia	-3.4	-2.3	6.5	3.4	-2.0	1.3	0.6
Uzbekistan	-5.2	-0.9	1.7	2.5	4.4	...	0.5
Guinea-Bissau	3.2	4.4	4.6	5.4	-28.1	8.7	-0.3
Kyrgyz Republic	-20.1	-5.4	7.1	9.9	1.8	...	-1.3
Congo, Dem. Republic of	-3.9	0.7	-0.9	-5.7	3.0	...	-1.4
Comoros	-5.3	-3.9	-0.4	0.0	0.0	1.0	-1.4
Azerbaijan	-24.3	-11.8	1.3	5.8	10.0	10.0	-1.5
Burundi	-3.9	-7.3	-8.4	0.4	4.8	-1.0	-2.6
Sierra Leone	3.5	-26.6	28.7	-17.6	-0.8	-8.1	-3.5
Tajikistan	-19.0	-11.8	-4.4	2.3	8.2	...	-4.9
Turkmenistan	-17.3	-7.2	-6.7	-11.3	5.0	...	-7.5
Ukraine	-22.9	-12.2	-10.0	-3.0	-1.7	-2.0	-8.6
Moldova	-31.2	-1.4	-7.8	1.3	-8.6	-5.0	-8.8
Afghanistan	...	...	...	...	...	...	...
Korea, Dem. People's Rep. of	...	...	...	...	...	...	...
Liberia	...	...	...	...	...	...	...
Somalia	...	...	...	...	...	...	...

Source: Country authorities.

**Table 12.2. GDP Deflator
(annual percentage change)**

	1994	1995	1996	1997	1998	1999	1994-99 average
Low-inflation countries							
Gambia, The	3.8	4.0	2.9	5.0	1.3	5.2	3.7
Guinea	2.9	5.5	2.8	2.4	5.0	4.0	3.8
Bangladesh	3.4	6.7	3.8	1.0	5.3	8.9	4.9
Comoros	9.4	8.0	2.3	3.5	3.0	3.0	4.9
Ethiopia	2.6	12.7	1.0	3.2	9.7	1.9	5.2
Mauritania	6.4	4.4	4.6	5.5	9.9	1.9	5.5
Cameroon	11.0	17.0	5.4	2.7	1.1	-1.2	6.0
Uganda	6.8	9.4	4.6	3.9	10.7	3.0	6.4
Central African Republic	22.8	10.3	1.8	0.8	1.7	1.3	6.5
Senegal	27.8	5.9	0.9	2.3	2.2	1.6	6.8
Nepal	7.4	6.3	7.8	7.3	3.3	9.2	6.9
India	9.7	8.6	7.9	5.6	8.9	5.5	7.7
Lesotho	7.5	8.9	8.6	8.0	8.4	7.2	8.1
Burkina Faso	27.8	9.8	4.2	2.2	3.1	1.6	8.1
Niger	32.7	5.4	4.7	3.1	3.0	3.0	8.7
Eritrea	22.2	11.3	2.9	2.7	2.7	12.6	9.1
Cambodia	8.9	9.1	7.1	9.2	17.0	5.7	9.5
Bhutan	9.3	9.8	11.4	14.7	5.9	7.8	9.8
Mali	27.9	18.4	5.4	1.0	4.0	2.2	9.8
Solomon Islands	11.5	7.1	12.1	8.1	12.0	...	10.2
Pakistan	12.9	13.8	8.4	13.3	7.8	5.5	10.3
Côte d'Ivoire	41.7	9.6	2.7	3.2	3.1	2.7	10.5
Nicaragua	7.8	10.9	11.6	9.2	12.9	13.9	11.1
Togo	33.8	12.2	5.1	11.4	2.7	1.1	11.1
Vietnam	14.5	19.5	6.1	12.1	8.9	5.8	11.2
Benin	33.5	15.4	6.7	4.7	4.2	3.5	11.3
Chad	43.4	8.6	11.6	2.7	4.1	-2.1	11.4
Congo, Republic of	36.8	22.6	-3.0	7.5	-19.1	24.1	11.5
Burundi	6.7	15.3	19.0	23.3	12.1	0.6	12.8
Kenya	35.2	11.2	8.7	15.5	10.6	5.0	14.4
Rwanda	18.0	51.3	10.5	15.6	2.6	-2.4	15.9
High-inflation countries							
Tanzania	28.2	28.9	22.3	18.5	19.3	11.6	21.5
Indonesia	7.8	9.9	8.7	12.6	73.1	17.2	21.6
Madagascar	41.6	45.2	17.8	7.3	8.4	9.8	21.7
Haiti	35.6	31.0	21.2	16.3	12.7	...	23.4
Nigeria	27.8	56.0	36.9	1.4	21.6	11.9	25.9
Sierra Leone	20.1	63.7	3.0	16.8	27.0	25.0	25.9
Myanmar	22.1	19.4	23.0	32.9	34.0	...	26.3
Yemen, Republic of	33.2	54.8	39.6	12.9	-9.3	26.8	26.3
Ghana	30.1	43.2	39.8	19.5	17.0	11.5	26.9
Guinea-Bissau	23.2	44.7	48.6	35.5	7.6	3.1	27.1
Mozambique	59.4	52.0	40.9	11.1	3.8	5.2	28.7
Mongolia	66.6	42.5	33.5	24.4	11.5	2.8	30.2
Zambia	56.6	36.9	24.3	25.9	23.2	25.6	32.1
Malawi	26.2	90.3	40.4	13.5	23.2	46.4	40.0
Lao PDR	7.7	19.7	13.9	17.7	84.0	125.4	44.7
Kyrgyz Republic	180.9	42.0	35.3	19.3	8.5	...	57.2
São Tomé and Príncipe	73.5	74.5	50.8	100.2	37.1	16.0	58.7
Sudan	80.8	41.1	107.4	64.9	28.9	...	64.6
Moldova	278.1	38.7	30.5	12.9	8.0	37.3	67.6
Tajikistan	236.2	285.0	397.9	100.2	49.9	...	213.8
Ukraine	953.5	415.5	66.2	18.1	13.2	...	293.3
Azerbaijan	1,428.6	545.7	26.4	9.2	-8.3	4.8	334.4
Uzbekistan	1,238.6	370.9	81.6	70.5	33.2	...	359.0
Turkmenistan	1,022.1	705.7	1,174.3	61.6	13.5	...	595.4
Armenia	4,107.3	161.2	19.6	17.7	11.2	1.1	719.7
Georgia	9,349.2	162.7	40.2	7.0	3.4	15.0	1,596.3
Angola	2,170.7	1,886.1	5,421.8	93.6	60.9	412.6	1,674.3
Congo, Dem. Republic of	26,762.4	466.4	613.1	187.3	15.0	...	5,608.8
Afghanistan	...	...	...	...	...	...	...
Korea, Dem. People's Rep. of	...	...	...	...	...	...	...
Liberia	...	...	...	...	...	...	...
Somalia	...	...	...	...	...	...	...

Source: Country authorities.

Table 12.3. Primary Surplus*
(as a percentage of GDP)

	1994	1995	1996	1997	1998	1994–98 average
Surplus/low-deficit countries						
Mauritania	2.4	6.5	11.4	8.2	8.4	7.4
Kenya	8.3	7.3	6.2	6.2	5.8	6.8
Lesotho	8.1	6.3	6.5	2.1	-4.5	3.7
Congo, Republic of	-1.1	5.9	7.0	4.4	2.2	3.7
Cameroon	-2.2	3.2	5.0	5.4	4.1	3.1
Zambia	5.2	3.8	2.1	3.5	0.1	3.0
Côte d'Ivoire	1.4	3.2	3.8	3.0	2.6	2.8
São Tomé and Príncipe	...	...	-0.3	11.3	-2.8	2.7
Nigeria	0.5	8.1	7.5	3.3	-6.9	2.5
Senegal	1.6	2.7	2.1	2.2	1.7	2.1
Tanzania	0.6	-0.5	1.2	4.7	2.2	1.6
Zimbabwe	0.0	-0.7	0.7	-0.4	8.0	1.5
Benin	0.8	-0.5	2.1	2.0	3.3	1.5
Bhutan	-0.5	0.1	2.0	-2.1	3.0	0.5
Myanmar	0.0	0.0	0.0	0.0	0.0	0.0
Indonesia	1.1	1.4	1.1	-0.5	-3.3	0.0
Vietnam	...	-0.6	-0.2	-0.8	-1.6	-0.8
Gambia, The	2.6	-2.9	-5.3	-1.4	2.9	-0.8
Madagascar	-3.0	-1.1	-0.2	0.7	-1.8	-1.1
Uganda	-2.3	-1.9	-0.9	-0.9	0.4	-1.1
Niger	-4.5	-1.5	1.4	-1.1	-0.4	-1.2
Mali	-2.0	-1.7	0.2	-1.1	-1.6	-1.2
Guinea	-2.0	-1.3	-1.7	-1.3	-1.8	-1.6
Burkina Faso	-1.8	-2.2	0.3	-2.3	-2.1	-1.6
Mozambique	-4.2	-1.6	-1.5	-1.3	-1.4	-2.0
Ethiopia	-4.3	-1.4	-3.2	0.7	-2.1	-2.1
Malawi	-16.2	1.0	2.3	-5.2	7.0	-2.2
Central African Republic	-7.6	-2.8	-1.5	-0.9	0.6	-2.5
Ghana	-4.4	-2.1	-4.4	-2.7	0.1	-2.7
Rwanda	-7.0	0.0	-4.1	-1.3	-1.9	-2.9
Togo	-6.2	-3.0	-3.0	0.2	-3.0	-3.0
High-deficit countries						
Chad	-3.5	-3.4	-4.0	-2.9	-4.1	-3.6
Solomon Islands	-5.5	-5.3	-4.4	-4.9	0.1	-4.0
Burundi	-2.8	-3.1	-8.3	-3.4	-2.7	-4.1
Bangladesh	-4.6	-5.3	-4.4	-4.3	-4.2	-4.5
Haiti	-1.8	-8.3	-7.6	-3.1	-4.0	-5.0
Sierra Leone	-4.5	-7.8	-4.4	-5.0	-5.1	-5.4
Pakistan	-6.0	-5.9	-7.0	-6.4	-5.5	-6.2
Lao PDR	...	-4.5	-5.9	-8.1	-7.2	-6.4
Nepal	-7.0	-6.6	-7.5	-7.3	-7.8	-7.2
Angola	-8.1	-16.5	1.1	...	...	-7.8
India	-8.8	-7.9	-7.8	-8.5	-9.4	-8.5
Nicaragua	-11.4	-11.0	-10.2	-7.6	-5.0	-9.0
Mongolia	-22.8	-4.1	-8.2	-8.6	-11.3	-11.0
Eritrea	...	...	...	...	-27.3	-27.3
Afghanistan	...	...	...	...	...	...
Cambodia	...	...	...	...	...	...
Comoros	...	...	...	...	...	...
Congo, Dem. Republic of	...	...	...	...	...	...
Guinea-Bissau	...	...	...	...	...	...
Korea, Dem. People's Rep. of	...	...	...	...	...	...
Liberia	...	...	...	...	...	...
Somalia	...	...	...	...	...	...
Sudan	...	...	...	...	...	...

*Negative sign indicates a primary deficit.

Source: Data provided by the authorities.

Notes

1. There is an emerging consensus on how to make actions at the country level—and the support of development partners—more effective in bringing about sustainable poverty reduction. This consensus indicates a need for poverty reduction strategies that are (1) country driven, with broad participation of civil society, elected officials, key donors, and relevant international finance institutions;

- (2) outcome oriented; and (3) developed from an understanding of the nature and determinants of poverty. Under the new framework, the country-led strategy would be presented in a Poverty Reduction Strategy Paper (PRSP). PRSPs are expected to become a key instrument for a country's relations with the donor community.
2. "Macroeconomic stability" describes a situation in which key economic relationships are broadly in balance and sustainable.
 3. These points are reflected in the design of programs supported by the IMF's Poverty Reduction and Growth Facility (PRGF), which are derived from a country's own poverty reduction strategy. The strategy itself should be based on fully integrated macroeconomic, structural, and social policies. See *Key Features of IMF Poverty Reduction and Growth Facility (PRGF) Supported Programs*, August 16, 2000, available at <http://www.imf.org/external/np/prgf/2000/eng/key.htm>.
 4. Examples include the relationship between infant mortality rates and per capita income, the ratio of female to male literacy and per capita income, and average consumption and the incidence of income poverty. In all three cases, national poverty indicators improved as per capita income rose. (See also World Bank 2000.)
 5. There is little empirical evidence that public sector capital expenditure has a positive impact on growth, reflecting the tendency such investment in the past to be wasteful or inefficient. This does not mean public investment is unimportant—only that efficiency considerations must be central in any public investment program. (See Easterly and Rebelo 1993; Devarajan, Swaroop, and Zou 1997.)
 6. Empirical evidence confirms a strong negative relationship between inflation and economic growth at all but the lowest levels of inflation. (See Fischer 1993; Bruno and Easterly 1998; Ghosh and Phillips 1998; Sarel 1996.)
 7. For any given increment in per capita income, the impact on poverty will depend on how that increment is distributed across the population. While growth is almost always accompanied by a reduction in income poverty and negative growth is accompanied by an increase in poverty, for any given growth rate, the impact on poverty can vary substantially.
 8. See Ravallion (1997); Datt and Ravallion (1992); and Kakwani (1993).
 9. To the extent that people with high incomes save a larger proportion of their income than do those with low incomes, policies that redistribute income in favor of the lower-income population may impede savings and, to the extent that such savings are channeled into productive investment, long-term growth.
 10. This refers to developing economies, where often income (and wealth) inequality is acute. In general, there is likely to be a point beyond which greater equity is incompatible with adequate labor and enterprise incentives, which, in turn, would be detrimental to growth. (See Alesina and Rodrik 1994; Bénabou 1996; Birdsall and Londoño 1997; Deininger and Squire 1998; Perotti 1992, 1993, 1996; Persson and Tabellini 1994.)
 11. By increasing the human capital of the poor, redistributive policies can increase the productivity of the workforce, thereby enhancing growth. Others have argued that there is also a political economy channel—in countries with greater income equality there is greater political support for public policies that are more conducive to growth. (See Alesina and Rodrik 1994; Persson and Tabellini 1994.) For empirical support for this effect, see Deininger and Olinto (2000), Thomas and Wang (1998), Klasen (1999), and Dollar and Gatti (1999). For dissenting views, see Forbes (2000) and Li, Xie, and Zou (1999).
 12. It is also often argued that if growth results in the expansion of low-skilled employment, then the poor are more likely to be the beneficiaries of that growth. One recent cross-country study (Fallon and Hon 1999) found that the more labor-intensive the growth pattern, the faster the decline in the incidence of poverty.
 13. See Datt and Ravallion (1998) Thorbecke and Jung (1996), Timmer (1997), and Bourguignon and Morrisson (1998).

14. In certain cases, the return to a steady growth state may also require structural reform and measures to improve the functioning of markets.
15. Broadly speaking, this means leaving the underlying stance of macroeconomic policy unchanged (or, in some cases, the stance may be adjusted temporarily to mitigate the impact of the shock) and adjusting policy targets in a way that takes into account the impact of the shock. However, if such a policy stance cannot be financed in a noninflationary way, then some adjustment will also be necessary.
16. A key feature of programs supported by the IMF's PRGF is to assess the distributional impact of key macroeconomic policies and to put in place the countervailing measures needed to protect the poor. See *Key Features of IMF Poverty Reduction and Growth Facility (PRGF) Supported Programs*, August 16, 2000, available at <http://www.imf.org/external/np/prgf/2000/eng/key.htm>.
17. Social safety nets are designed to mitigate the possible adverse effects of reform measures on the poor. These instruments include temporary arrangements as well as existing social protection measures reformed and adapted for this purpose, such as limited food subsidies, social security arrangements for dealing with various life cycle and other contingencies, and targeted public works. See also chapter 18, "Social Protection," and Chu and Gupta (1998).
18. Even if the strategy can be fully financed with concessional resources, policymakers will need to assess the degree to which poverty-reducing spending may place pressure on the price of nontraded goods and thereby threaten stability.
19. Ensuring that there is appropriate flexibility in fiscal targets and supporting the efforts of the authorities to secure commitments of higher donor flows when warranted are key features of the IMF's PRGF-supported programs. See *Key Features of IMF Poverty Reduction and Growth Facility (PRGF) Supported Programs*, August 16, 2000, available at <http://www.imf.org/external/np/prgf/2000/eng/key.htm>.
20. "Priority areas" are defined as those activities identified as crucial for poverty reduction.
21. For a discussion of tax policy and developing countries, see Tanzi and Zee (2000).
22. The real interest rate represents the real cost of borrowing—that is, the cost in terms of goods—and is approximately equal to the nominal interest rate minus the expected rate of inflation.
23. The real exchange rate represents the relative price of a basket of goods in two countries. It is commonly measured by multiplying the nominal exchange rate by the ratio of consumer price indices in the two countries. If the real exchange rate appreciates, the basket of goods becomes more expensive in the home country. This can happen if either the home currency appreciates or the home country's prices rise relative to those of the foreign country.
24. For example, recent studies have shown that in some countries the association of income with tradable goods and consumption with nontradable goods is stronger for the poor than for other income groups. In these countries, this implies that a depreciation or devaluation of the domestic currency would make the country's exports more attractive and stimulate demand for tradable goods. Since the income of the poor is tied to the production and export of tradables, this would in turn increase their income while the cost of their consumption of nontradables would remain unchanged. All other things being equal, this would have a beneficial distributive impact on the poor.
25. Other nominal variables can also serve as anchors. What is essential is that the variable targeted be nominal, and not real, because real variables cannot provide an anchor for nominal prices. For example, countries that have targeted the real exchange rate have generally had worse inflation performance than other countries. (See Phillips 1999.)
26. The two most commonly used nominal anchors are a fixed exchange rate and a money aggregate, such as reserve money or broad money. Under a fixed exchange rate regime, whenever the market rate threatens to depart from the predetermined rate, the monetary authorities buy or sell foreign exchange for domestic currency to ensure that the exchange rate remains fixed. Similarly, under a

- monetary anchor, the monetary authorities specify a predetermined path for a monetary aggregate, and tighten or loosen the monetary stance when the aggregate threatens to depart from that path.
27. Under a fixed exchange rate, the monetary authorities give up control of the money supply. Under a monetary anchor, the authorities cannot pursue an exchange rate target.
 28. If there are no explicit policy targets, the monetary authorities have full discretion. This differs from the concept of independence of the monetary authorities.
 29. To minimize their adverse effects on the poor, reform programs should be designed with the poor and vulnerable in mind. The mix and sequencing of reform measures should be designed to minimize the hardships brought about by the program. The appropriate mix and sequencing cannot, however, ensure that adverse effects will be removed entirely; hence social safety nets are needed to mitigate the possible short-run adverse effects on the poor. In some cases it may be appropriate to delay reforms until adequate safety net measures can be put in place. (See Chu and Gupta 1998.)
 30. Contrary to what some may believe, the poor do save, to smooth consumption over time as well as to guard against adverse shocks. For a recent analysis, see Deaton and Paxson (2000).
 31. Also, capital controls that drive a wedge between domestic and world real interest rates make it possible to extract an inflation tax, which especially hurts the poor.
 32. For many countries, domestic asset holdings of the poor are mainly composed of currency, so it would seem that this channel is not relevant. But this may just reflect the fact that low controlled interest rates provide a disincentive to save in bank deposits. Removing financial distortions could shift the allocation of domestic assets in favor of deposits and, to the extent that market interest rates account for expected inflation, insulate the savings of the poor from inflation.
 33. Collateralization may be initially the only way for small firms to gain access to credit markets, but its amplification effects should not be understated. Instead, policies that reduce informational problems (that is, the reason for collateralization) should be implemented.
 34. For example, in Ethiopia, livestock prices (often the poor's only asset) fall during a drought because of farmers selling their cattle to compensate for the bad harvest.

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Chapter 13

Trade Policy

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13.1 Introduction

There is a preponderance of cross-country evidence that trade liberalization and openness to trade increase the growth rate of income and output.¹ In addition, numerous individual country studies over the past three decades suggest that “trade does seem to create, even sustain higher growth” (Bhagwati and Srinivasan 1999). A country’s trade policy is the key link in the transmission of price signals from the world market to the national economy. Undistorted price signals from world markets, in combination with the exchange rate, allow resource allocation consistent with comparative advantage, thereby increasing productivity. An open trade and investment regime encourages integration into the global trading environment and the import of diverse and modern technologies that are important for productivity improvements.²

Trade, growth, and the poor. Growth in incomes of the poor is strongly related to overall growth in the economy—although the relationship differs substantially from country to country. The link of overall growth to poverty reduction has been demonstrated both in cross-country analyses (Dollar and Kraay 2000), and for individual countries.³ Trade liberalization can therefore be expected to help the poor overall, given the positive association between openness and growth. However, in the short run, liberalization may have a negative impact on some of the poor, depending on their sources of income and the impact of liberalization on the prices of goods and services the poor consume. There is therefore a need to examine the impact of trade liberalization in some detail to help to design policies that would protect those among the poor who may be adversely effected, especially in the short run.

Characteristics of the poor. Knowledge of how the poor obtain and how the poor spend their income is important in designing pro-poor policies (see Annex K). Food is by far the most important item of expenditure. In Bangladesh, for example, food represents about 73 percent of the total expenditures of the poor, with fuels, housing, and clothing combined accounting for just 21 percent.⁴ The sale of unskilled labor tends to be the most important source of income for the poor, complemented by the value of “own consumption”—that is, the imputed value of what the poor consume from their own production.⁵

In general, the impact on the sources of income of the poor will be a more important determinant of the effect of liberalization than the effect on the prices of the things that they consume. The reason is that trade reform will affect many relative prices, some of which will move in offsetting directions. As the poor generally have limited assets, the most important of which is low-skilled labor, the impact on wages and employment therefore dominates.

Complementary policies and institutions. While a liberal trade policy is necessary for growth and poverty reduction, it is not sufficient in itself to promote trade growth. When trade reform has been implemented in an unstable macroeconomic environment or has been implemented without any effort being made to strengthen trade-related domestic institutions or without appropriate complementary policies, it has often either been reversed or has failed to stimulate growth. This chapter will discuss important “behind-the-border” reforms that should accompany trade liberalization to effectively allow a country to integrate into world markets. Such reforms should include development of a regime that encourages investment and competition, including openness to foreign direct investment (FDI), so that business services are supplied at competitive prices, and should include macroeconomic policies that encourage stable prices and a competitive real exchange rate.⁶ Although the poor are very diverse, they frequently work in the rural sector and in the urban informal sector. Thus, policies that affect agricultural and labor markets are important complements to trade reform for the poor.

Political economy of protection and the poor. Even when trade reform would benefit the poor and the economy broadly, it will often be resisted. The sectors that receive the greatest protection under the existing system will be aware of the benefits they gain from that protection, and will oppose reform. The expansion of exports that reform would support is likely to be economy-wide, often with new and sometimes unexpected industries emerging; the employment and income gains from reform are thus likely to be diffuse, and the same is true for the consumers who would gain from the reform through lower prices and greater choice. It is this diffuse nature of the gains to consumers and producers that explains why those who oppose liberalization—the beneficiaries under a protected trade system—often

are dominant in political lobbying. The redistributive effects of trade reform can be a major factor impeding the launch of welfare-improving policy changes (Rodrik 1998).

Barriers to trade are typically put in place to protect domestic producers from international competition, and usually benefit powerful interest groups, not the poor. Nontariff barriers are especially pernicious in this regard as they effectively result in transfers from consumers, including the poor, to license holders. These so-called rents arise because the restriction on imports results in domestic prices that are above the world price. In the case of a tariff barrier, the government collects the revenue that is implied by the difference between the world price and the tariff-inclusive domestic price, but in the case of a nontariff barrier this implicit revenue is captured by those who hold the license to import. There is evidence that in developing countries such rents are a major cause of inefficiency, as companies and individuals seek to obtain import licenses and to influence policy in general (Krueger 1974). Import license holders are often among the wealthiest members of society. Thus, in addition to the inefficiency costs of trade protection, protection will often transfer income toward the rich and away from the poor. The negative effect of trade reform on the incomes of those who benefit from the existing trade structure, and the positive effect on the incomes of those who suffer under existing arrangements, can in percentage terms, be much larger than the (average) economy-wide income effects of liberalization. This is because trade policy is inherently a redistributive policy.

Structure of this chapter. Section 13.2 of this chapter describes briefly the experience with successful trade policy reform and discusses adjustment costs and the implications for the poor. Section 13.3 discusses and evaluates the principal trade policy instruments and institutions. Section 13.4 closely examines agriculture and business services, which are likely to be of particular importance for a poverty reduction strategy. Section 13.5 discusses and evaluates the most important complementary policies, as well as general and trade policy-specific safety nets. Section 13.6 briefly summarizes the principal points in a successful strategy for using trade for poverty reduction. A framework for analysis of the short-term and long-term impact on the poor of trade reform is provided in technical note K.1.⁷

13.2 Trade Policy Reform, Growth, and Poverty Reduction

13.2.1 Models of successful trade integration and poverty reduction

In the last 40 years of the 20th century, several countries have been highly successful in increasing incomes and reducing poverty. Most notable is the experience of the East Asian and Southeast Asian economies, especially Singapore, Hong Kong, Japan, Taiwan (China), and the Republic of Korea. In the final 15 years of the century, Chile and Mauritius also saw remarkable increases in income. All of these countries dramatically increased their exports (and trade to GDP ratio), raised incomes, and reduced poverty and are now active participants in the global trading environment. There are no examples of countries that have significantly reduced poverty without significantly increasing their exports. Although export expansion is thus the common element to all the success stories of poverty reduction, there are considerable differences in the models of trade policy that these countries and economies have adopted. The success stories may be grouped into three broad categories:

- **Economy-wide trade liberalization.** Hong Kong, Singapore, and Chile are examples of economies that adopted liberal trade regimes without nontariff barriers. Hong Kong and Singapore practiced free trade (zero tariffs), while Chile employed low uniform tariffs.
- **Protection with offsetting policies for exporters.** Some economies that experienced rapid growth in trade and GDP did so in the context of trade regimes characterized by significant import controls on the domestic market. Korea, Taiwan (China), and Japan (in the early stages) are the main examples. The key to understanding these experiences is to look at all of the factors that affect competitiveness and the incentives to producers to sell in the domestic versus the export market. Protection creates incentives to produce and sell to the domestic market. Protection of intermediate products and services creates a bias against export industries, because it raises their costs relative to potential competitors in world markets. Success has been achieved in the East Asian cases by managing elaborate systems that offset the bias against exports (see box 13.1). The experiences of nearly all other developing countries that protect their domestic markets are quite different.

Notably, the institutions needed for effective implementation of duty drawback systems (see section 13.3.1) have been shown to be weak in most Sub-Saharan African countries (World Bank 2000c). This suggests that the Korean model is not recommended for most developing countries given institutional capacity constraints and the risk of capture by special interests that will obtain rents.

- 3) **Protection with export processing zones.** In a protected trade regime that discourages exports, export processing zones (EPZs) may be used to place exporters on a footing similar to that of producers for the domestic market, by providing tariff-free access to intermediate inputs and reducing regulatory constraints. Mauritius since 1985 has expanded exports significantly and reduced poverty through the employment of EPZs in a trade regime that was not liberal overall. However, while many other countries have introduced EPZs, few have actually succeeded in stimulating exports substantially and on a sustainable basis through this mechanism. There is a role for EPZs in countries with institutional constraints (Watson 2000), although there are potential pitfalls (see section 13.3.7).

The most practical way of stimulating trade and opening up an economy to the international market is through the use of a liberal trade regime, rather than through a complex structure of protection and export incentives. Duty drawback mechanisms are generally ineffective in developing countries. Lobbying for protection and subsidies engenders corruption and inefficiencies that hurt the poor. These problems can be avoided by simple and transparent protection regimes of low uniform tariffs. For low-income countries with weak trade-related institutions, EPZs can be an effective vehicle to promote exports, not only because they allow duty-free access to imported inputs, but also because they provide a means to deal with infrastructure and public sector service-related weaknesses that impede investment (Watson 2000).

13.2.2 Adjustment costs of trade liberalization: Impact on the poor

Political dynamics and a fear of adjustment costs can inhibit trade reform efforts, even if international evidence generally supports the view that the adjustment costs to the economy of trade liberalization are small in relation to the benefits (Matusz and Tarr 2000). Papageorgiou, Choksi, and Michaely (1990) concluded, for 19 developing countries, that trade liberalization did not generally result in decreased employment, even in the short run. Compared with the pre-liberalization period, manufacturing employment was larger one year subsequent to the completion of liberalization in all but one of the 12 countries for which data were reported, and manufacturing employment was higher in 12 of 13 cases during the liberalization period compared with the levels registered prior to liberalization. Parker and others (1995) and Harrison and Revenga (1995) performed similar but less extensive studies for industrialized market economies, with similar results.

It is useful to bear in mind that small and medium-sized enterprises (SMEs) account for a substantial share of new income earning opportunities. About 20 percent of all start-ups in six African economies and the Dominican Republic were SMEs (Liedholm and Meade 1995). The high start-up rate, where the business environment is supportive, adjustment to trade reform can be rapid. In general, the magnitude of dislocation caused by liberalization may not be significantly larger than dislocations associated with the everyday workings of the economy in many countries.

Box 13.1. How Korea Overcame the Anti-Export Bias of Protective Trade Policies

During the 1960s and 1970s especially, the Republic of Korea had relatively high import tariffs and also used nontariff barriers. Both exports and the economy nonetheless grew rapidly. In principle, tariffs impose a bias against exports by making production for the home market more profitable than production for overseas markets. Korea managed an elaborate system that offset the bias against exports. Two of the most important mechanisms used were an efficient temporary admission system (supplemented in the 1980s by a duty drawback system) that allowed tariff-free access to intermediate inputs for exporters (and “indirect” exporters), and the provision to exporters (and indirect exporters) of preferred access to working capital at interest rates that were considerably lower than the interest rates paid by firms supplying the domestic market. The development and enforcement of these policies over a long period required strong political will, supported by a broad national consensus, and a highly competent administration.

Source: Westphal and Kim (1977), Westphal (1991), and Rhee, Ross-Larson, and Pursell (1984).

Private adjustment costs can be substantial or can be small, depending on the size of subsidies (direct and indirect) prior to reform and on whether or not the markets function well. Evidence shows that adjustment costs are typically short term and end when workers find a job. In developing economies, trade liberalization should favor labor, since exports will typically be labor-intensive. Significant shifts within an industry typically occur after trade liberalization, tending to minimize the dislocation of factors of production since some sectors will expand while others contract. Moreover, the duration of unemployment for most industries is not high, especially where workers were not earning substantial rents in their original job. Finally, in many industries normal labor turnover exceeds the dislocation caused by trade liberalization, so that downsizing where necessary could be accomplished without layoffs.

It is difficult to disentangle the effects of trade liberalization from other events occurring simultaneously, but generally manufacturing employment increases subsequent to trade liberalization. Overall, individual country studies suggest that adjustment costs are low relative to the gains from liberalization; however, the extremely poor may be incapable of sustaining themselves even for short periods under adverse adjustment costs. There may also be some poor groups that do not gain, and others of those that should eventually gain may lose in the short run. Complementary policies—particularly the provision of an efficient social safety net—are therefore necessary to minimize adjustment costs and to help make trade reform work effectively for the poor. In general, attaining and sustaining a high rate of economic growth is a key factor in improving outcomes for the poor over time.

13.3 Trade Policy Instruments and Institutions

The first step in developing trade policy for growth and poverty reduction is to understand how the present trade regime works, including nontariff barriers and to whom licenses and permits are issued. Other important questions to answer include the following:

- ⊃ What is the structure of the tariff (including its dispersion, exemptions, and rebates)?
- ⊃ How much revenue comes from tariffs?
- ⊃ What policies are in place that may tax or subsidize exports?
- ⊃ Are trade-related institutions, such as standards organizations, export finance, and marketing facilities, adequate to support an expansion of exports?
- ⊃ Does the pattern of protection favor the income of the poor or a segment of the poor, and can policies be designed to assist the poor during the transition?

This section describes the principal trade policies and the institutions that influence the flow of goods and services, and suggests how these might be evaluated. Complementary policies to trade reform are discussed in section 13.5

13.3.1 Nontariff barriers

Nontariff barriers include mechanisms such as quotas, licenses, and monopoly rights to import. Nontariff barriers encourage competing interests to lobby for import licenses, an activity (known as “rent seeking”) that wastes valuable resources. Nontariff barriers also lack transparency, and thereby may allow protection to escape scrutiny. As discussed above, the political economy of protection suggests that import controls (and sometimes export controls) are usually put in place to benefit powerful interest groups, not to help the poor.

13.3.2 The tariff regime

Most low-income developing countries have differentiated tariff structures with significant tariff escalation (Michalopoulos 1999). The underlying motivations include fiscal objectives, import substitution, and the political weight of vested interests. Because tariff escalation affords high “effective” protection to final goods producers, the development of intermediate industries is discouraged.

A uniform tariff conveys a number of advantages (Tarr 2001), the most important of which is that the gains to industry lobbying are much smaller (and may be negative). Indeed in Chile, which has had a uniform tariff since 1979, a progressive reduction of the uniform tariff from 11 to 6 percent, to be accomplished by 1 percent per year reductions between 1998 and 2003 was supported by industry groups and passed by the legislature.

A uniform tariff greatly simplifies customs operations and direct administrative costs, and eliminates opportunities for avoidance, and, hence, corruption (which may have positive spillover effects into other dimensions of government activity).

Customs and other officials in low-income countries have tended to argue that implementing uniform tariffs is not feasible in practice. However, Chile, El Salvador, and the Kyrgyz Republic have successfully introduced tariff structures with very small dispersion, and Hong Kong, Singapore, and Estonia have a uniform tariff of zero.

Uniformity does not imply that there can be no exemptions for products of social importance, such as essential medicines or mosquito nets (Bannister and Thugge 2001). However, care should be taken that such exceptions target only products that are critical to attain social and public health objectives.

13.3.3 Emergency protection, antidumping, and other trade remedies

Liberalization of trade gives rise to adjustment pressures as import competition intensifies. For this reason, reform programs often reduce tariffs and other trade barriers gradually, ideally in conjunction with measures to facilitate adjustment. However, in some instances imports expand so rapidly that governments choose to intervene by raising trade barriers. Import surges that create serious difficulties for a domestic industry may also occur independently of liberalization. An effective response in such cases could be a safeguard measure that imposes a temporary duty on all imports of the product concerned. This is only justified if both the domestic industry is seriously injured by import competition, and protection is in the national interest (that is, the associated costs to consumers would be less than the benefits that would accrue to producers). Safeguard actions should be temporary, lasting no more than two or three years, with the objective of facilitating industry adjustment to increased competition. Tariffs are preferred to quotas, for reasons of transparency and political economy.

Many countries tend to use “antidumping” as a safeguard instrument where imports are sold for less than is charged for them in the exporter’s home market. That is, duties are imposed to offset price discrimination across markets. This is ill-advised. Antidumping is an instrument that is easily captured by industries to raise the price of imports, and requires the use of scarce administrative resources. If there is a need to raise protection because imports are hurting domestic industry, it is preferable to use WTO-consistent safeguard actions, which suggest that countries consider the impact of taking action on the economy as a whole, including the poor, as opposed to simply on the affected industry.⁸ In practice, however, the question of whether or not it is in the nation’s interest to offer protection to an industry under competition is seldom asked.

Antidumping instruments are not a preferred option. However, where antidumping procedures are used, efforts should be made to establish procedures that require the national interest and the impact on the poor to be taken into account prior to the imposition of an antidumping duty.

13.3.4 Special customs regimes for exporters

Tariffs on imports hurt exports in various ways. In order to compensate, countries have developed compensatory measures for exporters. Programs like duty drawback (involving the repayment of duties paid on imported inputs that are embodied in subsequent exports) and temporary admission (defined below), if properly administered, can allow exporters duty-free access to imported intermediates. Although the more general exchange rate bias against exports that results from protection remains,⁹ provision of tariff-free access to imported intermediates for exporters can be crucial. This is also the case

for countries with uniform tariffs, although the need for duty-free access obviously declines as the average level of the tariff falls.

The main problem with duty drawback schemes is that their administration can be costly and cumbersome, particularly when tariffs are high. Exporters in many countries complain of delays in repayment and sometimes a lack of repayment, which is particularly detrimental to small and medium-sized enterprises and small farmer organizations. When tariffs are high there is also the risk of fraudulent claims (Mitra 1992). Empirical evidence suggests that in countries that do not have well-functioning public administrations, duty drawback is ineffective.

Temporary admission may be more effective at allowing tariff-free access to intermediate inputs. Rather than require payment of duties on imported inputs, this mechanism requires firms to document, ex post, that the relevant inputs were used in the production of exports. This approach encounters the problem of “leakage” of goods into the domestic economy. A frequently used option to control such leakage is the bonded warehouse—or, on a greater scale, an export processing zone (see section 13.3.7).

13.3.5 Export subsidies

Export subsidies may be appropriate to offset market failures; including, for example, information problems faced by individual firms seeking to enter new markets. In practice, countries have often used such subsidies indiscriminately, in part to offset the anti-export bias created by other policies. To be effective and not distort incentives, such policies should be horizontal in nature, not sector-specific. While subsidies can stimulate exports, this may come at a huge cost to the budget. The impact will be regressive if subsidies accrue to rich exporters. Using subsidies to offset the negative effect of other policies (such as protection) on exports is also inappropriate: in such cases, a better approach would be to reduce import protection and introduce instruments such as drawback or EPZs.

Countries that are members of the WTO have become more constrained in the use of export subsidies, although there is an exemption for the least-developed countries with per capita incomes of less than US\$1,000.

The main problem with export subsidies is their use by high-income countries for agricultural commodities. This has a destabilizing effect on world prices and is highly detrimental to producers in developing countries.

13.3.6 Export taxes

Developing countries often impose export taxes on primary commodity exports. In some cases, such as the extraction of minerals, these are imposed instead of royalties as a way to raise public revenue. In other cases, export taxes have been used to support local processing industries, which often has an adverse effect on the poor (see box 13.2).

Export taxes result in lower prices being paid to farmers for their commodities than the prevailing price in world markets. Elimination of such taxes would raise the incomes of farmers, the majority of whom tend to be poor, but would reduce the profitability of processing facilities that may employ poor urban labor. Examples include cocoa and coffee processors in West Africa that buy cocoa and coffee beans at prices below the export price; textile firms in Pakistan, India, and francophone West Africa that obtain domestic cotton at favorable prices from parastatal export monopolies or as a result of export taxes or restrictions (see box 13.3); leather processing firms in India that buy local and partly processed hides at low prices as a result of cascading export taxes; cashew nut processors in Mozambique that benefit from export taxes on raw cashew nuts; and cashmere wool processors in Mongolia that benefit from the price-reducing effect of an export tax on raw cashmere. In all of these cases the export taxes and restrictions have both efficiency and equity effects.

In most cases, the net poverty effect of removing export taxes and restrictions would be strongly positive. There are many more poor farmers that would benefit from export tax removal than there are industrial workers who might lose, and the highest incidence of severe poverty is usually found in rural

Box 13.2. Madagascar's Marketing Board for Vanilla Exports: Taxing the Poor

In 1960, the international market for natural vanilla was dominated by Madagascar, the world's lowest-cost producer of high-quality bourbon vanilla. Controlling 60 percent of world exports of natural vanilla, Madagascar organized a bourbon vanilla cartel with the Comoros and Réunion, setting high export prices and restricting supply by regulating its domestic market through a marketing board which fixed low producer prices and required licenses to grow, prepare, and export vanilla.

If the marketing board were to be assessed by the effect it had on export prices of vanilla from Madagascar, it was a clear success: the export price of vanilla increased from US\$10 per kilogram in the late 1960s to more than US\$65 per kilogram in the early 1990s. However, Madagascar's share of world markets declined to 30 percent as Indonesia took advantage of high world prices to develop its own export capacity, so that the total value of Madagascar's exports constant throughout the 1970s and 1980s.

Who benefited from the bourbon vanilla cartel and the marketing board's domestic policies? Indonesian producers were the winners, Madagascar's producers the losers. The average annual production of each of Madagascar's 60,000 small producers is 130 kilograms, for an average income of US\$650 per plantation. Estimates of producer prices that would have prevailed in Madagascar had the marketing board been abolished are close to US\$26 per kilogram, well above the US\$5 price fixed by the board. Taking into account the increase in production that such a change in prices would have generated, abolition could have increased vanilla producer incomes eightfold.

An alternative to free trade would have been to eliminate intervention in the domestic market but to exploit Madagascar's market power in international markets through an export tax. Estimates suggest that the optimal export tax would have been close to US\$25 per kilogram, instead of the US\$61 implicit tax that was imposed on producers.

Why were these policies not adopted? A possible explanation is that taxation of small producers generated an important income redistribution from the rural poor to the urban elite.

Source: De Melo, Olarreaga, and Takacs (2000).

areas. For example, the cashmere export tax in Mongolia reduces the incomes of about 250,000 goat-herding families, most of whom are poor and the poorest of which are heavily dependent on income from cashmere. In contrast, there are only about 2,000 workers employed in cashmere processing. Moreover, part of the income the export tax transfers from the goat herders goes to the owners of the processing firms (Filmer 2001, and Takacs 1994).¹⁰ As is generally the case, safety net options for those adversely impacted by export tax elimination should still be carefully considered, especially when the impact on processors is severe (see section 13.5.6).

Box 13.3. Rural Poverty, Cotton, and Parastatals in West Africa

In most of francophone Africa, the national parastatal company is the sole authorized purchaser and processor of seed cotton, and is the sole seller of the products of ginning: cotton lint and cotton seed. It also supplies inputs to the farmers, owns and operates all the cotton gins, and provides the transport needed to supply the inputs to the farms, the seed cotton from the farms to the gins, the lint to the ports or to local textile firms, and the seed to local oil mills or to other markets. It is also responsible for the sale of the lint, nearly all of which is exported.

Cotton has proved to be an economically very efficient crop, and has made major contributions to the development of rural areas, exports, poverty reduction, and growth. The share of cotton lint exports increased from about 4 percent of world trade in cotton in the mid-1970s to about 15 percent in 1997. However, the absence of any competition in the purchase of seed cotton from farmers means that farmers have been paid prices for their seed cotton that tend to be far below competitive levels. In terms of lint equivalent, seed cotton prices in the francophone African countries have generally been within a range of 40 to 50 percent of the export price of cotton lint, compared to ratios averaging almost 90 percent in India and around 80 percent in Zimbabwe.

Detailed comparative analysis of costs shows that only a small part of the low francophone African seed cotton prices can be explained by higher transport and operating costs. More important are high government taxes, including special taxes on parastatal profits and export taxes on cotton lint; implicit taxes from the sale of lint to domestic textile firms at low prices; and periodic costly management mistakes and corrupt practices. Simulations suggest that removing this taxation would generate large percentage increases in seed cotton prices for farmers (from 45 percent in Cameroon to 87 percent in Burkina Faso), expand output, and increase real farm incomes. Another problem with parastatals is that they typically impose pan-territorial prices, whereby they pay the same price for all locations and at all times of the crop year. These subsidies for transport and storage eliminate any incentive for private provision of these services and result in production in socially inefficient locations. Parastatal monopolies also prevent the development of private credit services.

Allowing private firms to provide the services of the parastatal and permitting farmers to contract with private firms could in the long run be expected to greatly improve efficiency and to introduce distributional advantages for poor farmers. However, it is important to pay attention to supporting services and markets (such as credit and transportation) during the transition to a market-based system. It is also possible that the elimination of pan-territorial pricing would have a negative effect on poor farmers that are located in isolated regions. As is frequently the case, not all would necessarily gain, a fact that underlines the need for a social safety net.

Source: Pursell (1998).

13.3.7 Export processing zones

Export processing zones (EPZs) are enclaves for export production, especially of nontraditional exports, that are often used where economy-wide trade reform is impeded or in which infrastructure and regulatory requirements cannot be met on a national basis. Effective EPZs have reflected the following characteristics: clear private property rights and investment regulations, no restrictions on foreign exchange, tariff-free imports for export production, moderate levels of taxation, streamlined administrative procedures, and private sector management. Some of the most successful EPZs are in Mauritius, where in 1994 EPZs generated 71 percent of gross exports and employed 17 percent of the work force. Mexico has also had successful EPZs. Such zones can also have a significant effect on female employment. EPZs in Bangladesh tend to employ women (70 percent of Chittagong EPZ employees are women, a much higher ratio than the national average), and in the Dominican Republic, EPZ employment was an important factor in decreasing the proportion of women among the poor from 23 percent to 16 percent in the period 1986–1993 (Madani 1999).

Experience has shown that development of EPZs, including provision of infrastructure and management, should be privately handled. Publicly developed and managed EPZs have typically been unsuccessful. Attracting investment into EPZs is a function of many factors, including some that are national in nature, such as political stability and sound macroeconomic management. An overvalued exchange rate will discourage exporting from EPZs just as much as from the rest of the economy. In general, the conditions for EPZs success involve the same complementary policies that are required to make a trade reform successful. Consequently, EPZs are best regarded as transitional mechanisms to be used in the pursuit of an overall liberal trade regime.

13.3.8 Other trade-related institutions

In addition to the commercial policy instruments discussed above, there are a number of other trade-related institutions that can have important implications for the impact of trade reforms. These include customs clearance, export finance, product standards, and access to information on market opportunities.

Efficiency and transparency in the area of *customs clearance* is an important determinant of the costs associated with trade. Burdensome and redundant procedures (red tape) can give rise to substantial uncertainty and are often associated with rent seeking and corruption. Minimizing the scope of discretion by simplifying the clearance process as much as possible, including by adopting international standards for classification of goods, eliminating most exemptions, and providing officials with training and appropriate information technology, are important dimensions of trade reform.

Export finance is a major constraint inhibiting exports in many low-income developing countries, arising from overall weaknesses in the financial sector, particular difficulties in assessing the creditworthiness of traders and/or because traders do not have sufficient collateral. To the extent that the poor are involved in trading activities, they may face special difficulties in obtaining access to the trade credit they need—just as they face difficulties in accessing other parts of the financial sector. While trade finance should be left to the private sector, any effort to expand exports and to promote increased opportunities for the poor in the export sector needs first to investigate whether credit is a problem. If so, remedies should be sought as part of the overall effort to increase access to finance for low-income producers.

Product standards based on international norms are important to poverty reduction. When used appropriately exchange is facilitated, and safety, health, quality, or preservation of the environment is better assured. As the poor have less access to information and do not have the resources to buy higher-quality goods and services, they are more dependent than the better-off on efficient standardization and consumer protection regimes.

This presents a dual challenge: to reform regulations and establish efficient testing, certification, and laboratory accreditation requirements to facilitate exports, while at the same time attaining sanitary, phytosanitary, and product standards. Both technical and financial assistance may be needed. Institutional arrangements need to be developed to ensure that poor firms (such as farmers, small producers, and artisans) have access to standards organizations—through cooperatives and similar collective

organizations—and are not unduly penalized because of their use of labor-intensive production technologies.

Marketing of exports internationally is a challenging task for all low-income countries, which must overcome problems of lack of information, product and country recognition, and concerns about quality. Foreign partners and FDI can be helpful in providing the necessary contacts and advice, but frequently it is necessary also to organize a local association of exporters or producers. Where the producers are a large number of small poor farmers, cooperatives and similar ventures can be helpful in ensuring that the potential benefits from exports are realized by the poor. Marketing boards have been used in a number of countries, sometimes with adverse repercussions for farmers, as in the case of vanilla in Madagascar (see box 13.2).

13.3.9 International cooperation: Regional integration and the WTO

Most developing countries are members of regional integration agreements (RIAs). From the viewpoint of the efficiency of resource allocation, however, RIAs between developing countries (so-called South–South agreements) are likely to hurt member countries because low-priced imports from non-partner countries are replaced with higher-priced products from partner countries (World Bank 2000b).¹¹ A solution to this problem is for member countries to lower their external trade barriers, thereby reducing the inefficient displacement of non-partner country imports: by lowering external trade barriers sufficiently, a harmful RIA can be turned into a beneficial one.

The effects of an agreement among developing countries are likely to be asymmetric, with the poorer member countries losing at the expense of higher-income members (World Bank 2000b). This is in part due to the fact that the better-developed country produces protected manufactured goods that are imported on balance by the less developed country at a higher price to its partner country for imports it could buy more cheaply on international markets. This problem emerged in the 1960s in the East African community, where Kenya gained and Tanzania and Uganda lost, and in the Central American common market, where El Salvador gained and Honduras lost. In both cases, the more advanced country resisted external tariff reduction, which led to resentment and subsequent breakdown in implementation of the agreements.

Potential losses of the poorer member country. In fact, the losses from regional trade arrangements can be reduced by lowering external trade barriers. In terms of implementation, as in the cases of the planned Free Trade Agreement of the Americas or the ASEAN Free Trade Agreement, each country can lower its tariffs independently and can thus protect itself from adverse consequences. For a customs union such as the West African Economic and Monetary Union or MERCOSUR, the member countries must agree to jointly lower the common external tariff. Customs unions among developing countries should therefore be approached cautiously, since tariff policy is taken out of the hands of national policymakers.

Space constraints prohibit a detailed discussion of the WTO, which has many provisions that constrain the use of trade-related policies by members, including developing countries (see box 13.4). See www.worldbank.org/trade and www.wto.org for more information and references to the literature. A major relevant dimension of the WTO from a poverty perspective lies in the reciprocal liberalization of trade barriers. Although most major industrialized markets provide preferential access for exports from developing countries, especially from the least developed nations, trade restrictions are prevalent, especially for agricultural products, apparel, and other labor-intensive products.

13.4 Sector Issues

The manufacturing sector has typically been most favored by protection. Much of the forgoing discussion focuses implicitly on reforms in that sector. Trade reforms directed toward agriculture and service sectors can also provide significant opportunities for poverty reduction, as explained below.

Box 13.4. The WTO and Poverty Reduction

The WTO agreements involve legal commitments by governments regarding the rules and policies they follow in the conduct of international trade in goods and services. As such, the agreements contain no explicit references or direct links to policies affecting poverty. Their impact derives from the trade policies that governments have committed to pursue based on their WTO commitments. More than 100 of the 140 WTO members are developing countries. (The WTO does not define what constitutes a developing nation; this is largely left to self-selection.) Almost all of the more than 30 countries seeking to accede to the WTO are also developing countries or economies in transition.

Within the WTO agreements, developing countries are supposed to receive favorable treatment (usually referred to as “special and differential” treatment) aimed at addressing their particular circumstances in international trade. The poorest of the developing countries—the 49 countries on the UN list of least-developed countries (LDCs)—are provided with additional favorable treatment. The special and differential treatment provisions involve five sets of measures: (1) developing countries are given more flexibility in terms of their own trade policies; for example, they have not had to reduce their tariffs significantly in previous multilateral trade negotiations and they do not have to bind all their tariffs; (2) exports of developing countries can be charged lower preferential tariff rates in industrialized or other developing country markets; (3) developing countries are given longer transition periods to implement provisions contained in some WTO agreements; (4) industrialized countries are supposed to provide developing countries with technical assistance to help them implement the commitments they have assumed; and (5) industrialized countries are to implement their WTO commitments in a manner favorable to developing country interests.

WTO provisions in general, and those which apply to developing countries in particular, tend to be permissive in terms of the trade policies an individual country can pursue, and, hence, do not tend to constrain these policies in ways that would harm the poor. On the contrary, they are on the whole supportive of trade and foreign direct investment policies that would tend to promote poverty reduction. Moreover, the availability in the WTO of an effective dispute settlement mechanism and the guarantee of MFN (“most favored nation”) treatment for all its members can be of special importance to developing countries in their dealings with more powerful industrialized country trading partners. Thus, it is important for all developing countries to be members of the WTO.

At the same time, the permissiveness of the WTO special and differential treatment provisions has been a problem for LDCs, enabling developing countries to maintain higher levels of domestic protection that have harmed their own economies. Furthermore, export subsidies, which are often used to offset the disincentives of protection, are a drain on the budget, and, hence, are not affordable and cannot be relied upon to provide the sustainable, labor-intensive export growth that would help alleviate poverty.

Source: Hoekman and Kostecki (2001) and McCulloch, Winters, and Cirera (2001). See also <http://www.wto.org/>

13.4.1 The importance of agriculture

Trade reforms affecting agriculture will critically impact its overall poverty impact (see chapter 15, “Rural Poverty”). Agricultural importables (mainly staples) are typically protected, while agricultural exportables are often subject to export taxes. Agriculture as a whole has tended to be taxed indirectly through protection of the manufacturing sector, and overvaluation of the real exchange rate (Schiff and Valdes 1992 and 2000), as well as through the operation of marketing boards or similar parastatals. Trade reform, which should cover both agriculture and manufacturing, will therefore typically raise agriculture’s domestic terms of trade and help the rural poor. The same is true for macroeconomic fiscal policies that result in a real exchange rate that is closer to a sustainable equilibrium.

Some of the rural poor, however, may lose. Foremost among these are people who are employed or who produce in highly protected, low-productivity sectors. Examples include maize in Mexico, wheat in Morocco, and various import-competing crops in many developing countries. Where the mobility of the rural poor is limited, reduced tariffs in their sector is likely to hurt that sub-group, especially in the short term, as prices of their output fall. Over time farmers can change their output mix toward crops with relatively higher prices. In northeast Brazil, the switch to more profitable crops after trade liberalization and devaluation greatly reduced the negative real income effects for small farmers (Lopez and Romano 2000).

In implementing trade reform, one option is to gradually phase out tariffs according to a preannounced schedule. This is what was agreed for maize in the NAFTA negotiations between the United States and Mexico. Experience shows that otherwise reforms with long transition periods (typically of more than five years) will lack credibility and will be susceptible to defeat by lobbyists. The ability to shift to production may depend on complementary reforms, for example, restructured land arrangements, additional capital, or access to water. If markets for these factors are poorly developed, farmers may be unable to take advantage of new opportunities. Where poor farmers are hurt in the short run, compensation policies such as improving rural infrastructure and public works are also important.

Fluctuating world prices. The liberalization of a country's agricultural trade policies means not only that the country must adjust to the price levels prevailing in international markets, but also that it must adjust to the fluctuations in world prices of agricultural commodities. In many countries, the impact of these fluctuations on the domestic economy is a major motivation for interventions that would separate the domestic and international markets. National export and import controls, parastatals or marketing boards, and variable tariffs all reduce the size of the international market in which a commodity is freely traded and thus increase the sensitivity of international prices to exogenous shocks such as bumper harvests and crop failures. For example, international trade in rice is equivalent to only 5 percent of world rice production. The extent to which some of the largest producer and consumer countries subject import or exports to discretionary government controls is key.¹² Policies aimed at stabilizing domestic prices can have a large impact on prices in the narrow international market, in turn leading to pressures to maintain or increase trade interventions elsewhere. For this reason, all countries have a common interest in reducing the instability of world prices by opening their domestic markets and removing policies that keep domestic markets separate from world markets.

Even with more open global markets, agriculture prices are inherently less stable than the world prices of manufactured goods and the prices of services.¹³ Most small countries, however, cannot individually have any perceptible effect on the level or volatility of world commodity prices. Trade liberalization in any individual country, if fully implemented, will often (but not always) mean that domestic commodity prices, including prices at farm level, will become more unstable.¹⁴ Farmers in many countries have repeatedly shown that they can adjust rapidly and efficiently to relative price changes. For the approach of sheltering farmers from price fluctuations to be welfare improving, the extra income of the groups that benefit from interventions must outweigh the net economic losses consequent on distorted consumer prices and changes in the government's fiscal position. In the short run, safety nets are important to protect poor farmers from large negative price shocks (see chapter 17, "Social Protection"). From a medium- to long-term perspective, it is generally better to target low income groups with actions that would increase the ability of farmers and workers to switch between crops, complemented with welfare and workfare programs, until a reasonable degree of flexibility and responsiveness is achieved.

It is important to recognize that once a price stabilizing policy has been introduced it is difficult, if not impossible, to stop the politically powerful from using the policy to shift the long-term price in their favor. Commodity marketing boards and parastatal monopolies have often stabilized prices at low levels relative to world prices, implying the heavy taxation of small farmers and the transfer of resources to governments and local processing interests, with adverse repercussions for rural poverty. For import substitutes, the forces of political economy generally point in the opposite direction, with interventions originally justified in the name of price stabilization (such as the price band schemes introduced in Latin America during the 1990s) often becoming de facto price support schemes keeping prices artificially high.

OECD intervention. Export subsidies on products such as meat, dairy products, and grain depress prices on world markets, and thus also on the domestic markets of developing countries. Some countries (such as Japan) maintain high barriers against imports of wheat, rice, and other agricultural commodities, but policies such as these contribute to world market price instability, constrain exports, and increase import competition. While most low income countries produce commodities such as fruits, nuts, and vegetables that do not compete with subsidized and protected meat, milk, and grain, for some low-income countries (for example, Mali and Burkina Faso, which are meat producers) and middle-income developing countries such as Argentina or Brazil, EU export subsidies are a major factor constraining agricultural exports.

Trade policies which depress agricultural prices tend to benefit consumers. The impact of such policies on farmers, however, depends on whether or not the farmer is competing with subsidized imports; whether or not the subsidies vary significantly over time; and whether the farmer is a net buyer or net seller of the commodities concerned. If there is no domestic production of the subsidized products, there is no need for intervention, as subsidized prices are beneficial to consumers. The situation is more complex where there is domestic production of the commodities concerned. Households that are net buyers of the subsidized product will gain, and subsistence farmers will be unaffected. The urban poor will also generally gain from lower prices. What is most important from a policy point of view is

therefore whether the gains to the non-rural poor are larger than the losses incurred by the rural households that are net sellers. This requires information to ascertain whom and how many subsistence producers, net buyers, and net sellers exist. The nature of the labor force engaged in production on farms that are net sellers is important, since those workers who own land may be able to cut their losses by shifting to subsistence farming, whereas landless laborers face loss of their source of income without having subsistence farming to fall back on.

A key issue is whether the OECD export subsidies are permanent or transitory. If the subsidies are permanent, it will be in the country's interest to ignore the subsidy for policy purposes because the economic costs of protection to the economy outweigh the benefits to domestic producers. If the subsidies are transitory (and there are capital market or other imperfections), there is a case for temporary protection for those tariff lines subject to competition from subsidized exports so that adjustment costs can be minimized.

In an agricultural sector with a large number of households that are net sellers of OECD-subsidized commodities, it is sometimes argued that higher tariffs on agricultural imports would be appropriate. This would increase the domestic price, thus helping to offset the effect of the subsidy and allowing domestic producers to compete. However, as noted above, differentiated import tariffs distort producer and consumer choices and reduce efficiency. Insofar as developing countries have tariffs that are greater than average on the agricultural imports in question, there is a case for not reducing these tariffs as much or as rapidly as tariffs on other products,¹⁵ given the adjustment costs associated with the downsizing of agricultural production and with the subsequent expansion, after export subsidies and OECD protection are reduced.

However, it is impossible to accurately offset the impact of OECD policies on world prices, as the information requirements for countervailing policies are substantial. There is also a risk that protection may become entrenched and continue even if the foreign protection and export subsidies are removed. More fundamentally, trade intervention is a second-best approach to dealing with the problem. The best policy is to maintain pressure on the EU and other OECD countries within the WTO context for the phase-out of export subsidies and protection of agriculture. Domestically, the policy focus should be on determining the size and nature of the population affected by OECD trade practices in the short run (that is, the number of net sellers of protected commodities).

Trade policy as an instrument for poverty reduction

Trade policy can be a useful instrument through which to pursue rural poverty reduction objectives in certain situations.

- ⊃ First, trade policy can be used to deal with temporary import surges that have a significant negative impact on the livelihood of poor farmers. In such cases a special safeguard mechanism may be considered, under which temporary protection can be sought if there is severe downward pressure on domestic prices of products that are important to incomes of the poor. Guidance on the general design of any such safeguard mechanism is set out in section 13.3.3.
- ⊃ Second, where the overall policy regime discriminates against agriculture—that is, policy favors industrial production and/or urban consumers of food—a case could be made in favor of higher protection for poor farmers in low-income countries. Although a more efficient approach would be to lower protection for industry, thereby offsetting any prevailing policy bias against the rural poor, contexts where this cannot be achieved or is achieved gradually, there may be a case for maintaining higher rates of protection on agricultural commodities as a “second-best” policy.
- ⊃ Third, trade policy can be used in situations where complementary policies, including safety nets, are inadequate and a significant number of the poor are engaged in production of tradable commodities that are sold domestically. In this situation, agricultural trade policy reform should be gradual, involving a preannounced schedule of tariff reductions.

The potential negative impacts of agricultural reform can be attenuated by currency devaluation, and by implementing complementary reforms in the markets for land, credit, and water, to enable farmers to take advantage of the new opportunities, to adjust to changed incentives, and to benefit from

the reform (see chapter 15, “Rural Poverty”). As noted above, in all cases there is a need for careful prior analysis before reforms are pursued.

For the least developed countries, duty-free access to industrial country markets is a valuable opportunity to be exploited if the standards and rule-of-origin requirements imposed under preferential arrangements can be met. By allowing exported goods to sell at high prices overseas and imported goods to be bought at world prices, such preferential arrangements provide a double benefit. Preferential access provides a positive incentive to produce goods for sale in the protected markets of the OECD countries that grant such access, markets which are both larger than their own and offer higher prices due to protection.¹⁶

13.4.2 The role of services

Services account for a rising portion of GDP in even the lowest-income countries. An efficient service sector contributes to the balance of payments, because it is a key determinant of the competitiveness of firms. Key sectors that influence the ability of firms to participate in world trade are telecommunications, transportation, financial services, and other business support such as accounting and legal services.

The gains from eliminating barriers to competition in the various business services can be large and can fundamentally affect a country’s comparative advantage and pattern of trade (Markusen, Rutherford, and Tarr 2000). It has become apparent that in many countries, inefficient business services have become the principal barrier to effective integration in world markets. Inefficient support services reduce the competitiveness of exporters of merchandise goods, constraining growth and efforts at poverty reduction.

Policies to encourage the development of a competitive and efficient service sector, such as liberalizing entry into the sector where possible and encouraging foreign direct investment, should be a major element of global integration and poverty reduction strategies. Liberalization of the service sector entails the reduction or elimination of prohibitions, quantitative restrictions, and regulations that prohibit foreign direct investment, limiting the share of ownership of foreign firms, limiting the number of expatriates that can be employed, or restricting the amount of imports of a particular service (UNCTAD and World Bank 1994). Such restrictions frequently apply to both domestic and foreign suppliers, creating public sector monopolies in the provision of services, such as in air and maritime transport, telecommunications, or financial services. In many such cases, the elimination of public sector monopolies may need to be accompanied with the opening up of service markets to foreign direct investment.

There is evidence of a positive relationship between the private competitive provision of telecommunication services and the availability of affordable telephone connections (see chapter 24, “Information and Communication Technologies”). This is especially true in countries where services were characterized by low density of phone lines or by service rationing (that is, long waiting lists).

There is evidence that freight rates for Sub-Saharan African countries often are considerably higher than for other countries, and thus have contributed to the region’s poor trade performance (Amjadi and Yeats 1995). For many internationally traded goods, the cost of international transportation exceeds the tariff on imports. High transport costs reduce export income and increase the price of imported goods, obliging exporting industries facing high transport costs to either pay lower wages or accept lower returns on capital. High transportation costs are due in part to anticompetitive policies such as the cargo reservation schemes that are maintained by a large number of African countries, and to international shipping cartels and legislated monopoly providers, in both industrialized and developing countries (Francois and Wooton 2001; Fink and Mattoo 2001). For example, all Algerian and Moroccan ports, as well as the main ports in Tunisia, are operated by inefficient government-owned cargo handling companies, which charge 30 percent in excess of the rates that would be quoted by a private independent operator. Licenses required by exporters and importers to charter vessels also create barriers to international trade, since permission to charter is granted only if the national shipping line withdraws. This is estimated to add 20 percent to the usual international freight rates (Amiot and Salama 1996). It is useful to refer to successful cases of trade liberalization, like Chile and China, to see policy options (see box 13.5).

Box 13.5. Liberalizing Trade in Transport Services

Shipping deregulation in Chile started in 1979 and aimed at dismantling a system based on cargo reservation protection for the national fleet. At the heart of the reform was an effort to eliminate restrictions preventing foreign shipping companies from supplying international transport services. In addition, monopoly rights to cargo loading operations in Chilean seaports were eliminated, allowing the entry of new private operators and the development of a competitive market for cargo handling services. The government also tripled port capacity by measures which increased labor flexibility, paying the union for the right to use workers not under union contract and thereby moving from a union-constrained 8-hour day to 24-hour cargo handling. This led to a significant cost reduction and an increase in exports, particularly of time-sensitive agricultural exports that are intensive in rural labor. Demand increased especially for female labor in the picking, sorting, selecting, and packing of fruits and vegetables.

The deregulation proved particularly beneficial during the 1981–82 economic crisis, when Chile's exporters had free access to the international shipping markets and were able to supply price-competitive products. Chilean fruit exporters entered into long-term contracts with international shipping enterprises to ensure regular service, guaranteeing rapid transit and certain timing of delivery, essential requirements in the highly competitive export fruit market.

Denial of the access of foreign-owned transport companies to domestic inland routes can also be important in hindering international trade. China provides an example: Exporters from inner China typically send goods in break-bulk form by truck or railway to ports where the goods are containerized and shipped. Multinational companies, however, require door-to-door container transport. This multimodal transport requirement cannot be met in China because of the low inland penetration of containers, forcing most export industries to locate on the coast where they often import raw materials and intermediate inputs rather than source from mainland China. Lack of competition is a major factor behind this situation, with two state-owned enterprises (SOEs) holding about 80 percent of the market for freight forwarding and shipping. Although the government allows major foreign shipping lines to establish freight forwarding arms in China, these shippers may only handle products for their parent companies. Restrictions on shipping agencies are even more sweeping: government rules bar foreign firms or joint ventures from entering the shipping market, limiting it solely to SOEs.

Source: Bennathan (1989) and World Bank (1996).

The case of Zimbabwe's vegetable exports illustrates the importance of efficient transport and related services. Since the early 1990s, farmers near the capital have been supplying produce to the U.K. market by flying freshly picked vegetables overnight to London where they are on the shelves for sale in the morning. Shipments are delivered to order, requiring efficient telecommunications as well as cheap, reliable air transport (Krugman 1998).

Services reform and the poor. Although the poor directly spend less of their income on services than the nonpoor, more efficient services has significant benefits for the poor. Services such as transport, education, and access to communications and finance are vital determinants of the ability of the poor to find employment and to market their production, for example. High transport or marketing costs lower the prices received by poor farmers and raise the prices of food paid by poor consumers. Competition in these sectors is therefore important to poverty reduction, as are resources devoted to "trade facilitation" to improve the efficiency of service networks and to reduce corruption and related transactions costs.

Recent empirical research suggests that access to a public telephone is positively related to the price that farmers receive in district markets for their output. It has been estimated that decreasing the distance to a telephone by 10 percent would lead to a 2 percent increase in local prices (Larson 2000) because of improvements in market information. In some Bangladesh villages, women entrepreneurs provide payphone services at a profit, using mobile cellular technology. Even though rural villagers cannot afford a phone individually, they can afford one collectively (Lawson and Meyenn 2000).

Liberalization of services and the resulting competition are likely to lead to lower prices, greater availability, and improved quality of services. Insofar as the poor are consumers of these services, they are likely to benefit. At the same time, pre-reform prices are set administratively, and typically kept artificially low for end users. Rural borrowers may thus pay lower interest rates than urban borrowers, for example, and the prices of local telephone calls and public transport may actually be lower than the cost of provision. This price structure is financed through cross-subsidization within public monopolies or through budget transfers. New entrants to the sector are likely to focus on the most profitable market segments, primarily urban areas, where the cost of service provision is lower and incomes higher. Utility and financial sector reforms, even if the sector may become more efficient and prices overall decline, may involve increased prices to low income households.¹⁷ Ways to ensure that the poor are not adversely affected, like universal service obligations, are set out in part 6, "Private Sector and Infrastructure," chapters 20–25.

Assessing services policy and performance. The relevant aspects of competition include restrictions on entry; of ownership limitations, private and foreign; and of regulation, especially those elements of regulation designed to achieve pro-poor outcomes in competitive markets. Questions that policymakers should address include the following:

- How much greater would the benefits be if privatization were accompanied by the introduction of competition?
- Are there good reasons to limit entry by policy?
- What institutional features promote the effectiveness of a sector regulator?
- What should the regulator regulate?
- What are the costs and benefits of restrictions on foreign ownership?

In many countries, an assessment of policy and performance in services is frustrated by a dearth of data. Main performance indicators include price and quality variables and measures of access to services by the poor and of the availability of services. The Bank has recently developed templates for an assessment of policy and performance in three key service sectors: telecommunications, air and maritime transport, and financial services.¹⁸ These can be used to by individual countries to benchmark their performance against international experience.

13.5 Complementary Policies to a Trade Reform

Trade liberalization involves reducing discrimination against foreign suppliers of goods and services. This is achieved not simply with respect to quotas and tariffs, but also by strengthening trade-related institutions, in particular customs and standards bodies and appropriate complementary policies to support trade reform.

13.5.1 Macroeconomic and exchange rate policies

To be sustained and to contribute to an efficient allocation of resources, trade liberalization must be supported by a stable macroeconomic environment and a real competitive exchange rate. Trade reform works through the transmission of price signals, which in a regime of high and variable inflation are concealed. Macroeconomic stability is thus a key complementary policy.¹⁹

A competitive real exchange rate is also crucial to create conditions for the continued support of liberal trade policies. Where the exchange rate is overvalued, industries that are competing against imports are at a competitive disadvantage, and this generates political pressures for protection that are difficult to withstand in the face of rising trade deficits and declining foreign exchange reserves (see also Shatz and Tarr 2001).

Initially, trade liberalization is likely to lead to a trade deficit because the rise in imports that typically follows liberalization tends to occur faster than the export supply response. A depreciation of the real exchange rate can help to restore a balance between exports and imports, since it makes imports more expensive and exports more profitable, in domestic currency. Under a flexible exchange rate regime, the real exchange rate will adjust through market forces. Under a fixed exchange rate regime, significant trade reform should be accompanied by a devaluation of the domestic currency. The required depreciation is larger the greater the extent of trade liberalization and the greater the lags in the supply response (see Annex K).

Countries that are part of a currency zone limit their capacity to devalue (for example, the countries in West and Central Africa, which are members of the CFA zone). Due primarily to currency overvaluation, there was no economic growth in the CFA zone between 1986 and 1994, when other Sub-Saharan African countries were growing at 3 percent annually (Clément 1994). For some of the CFA countries, including Cameroon and Cote d'Ivoire, the overvaluation induced an output contraction between 1986 and 1994 comparable to that of the Great Depression in the United States (Shatz and Tarr 2001). A number of CFA countries also suffered large increases in poverty (Devarajan and Hinkle 1994). After a major devaluation in 1994, growth strongly resumed. Elsewhere, some countries seek to maintain a fixed

exchange rate through the establishment of a currency board or some other arrangement. In such countries, which include Argentina and Estonia, to contain output losses trade liberalization may have to proceed at a pace consistent with the feasible rate of real exchange rate depreciation.

13.5.2 Fiscal revenue and the design of tariff reform

In 1990, trade taxes as a percentage of GDP averaged 0.6 percent among OECD countries and 4.4 percent among non-OECD countries.²⁰ Trade reforms might well reduce government revenue, though this need not be the case. Many countries have implemented successful trade reform programs without significant loss of revenue; for example, in the 1990s, Ghana, Kenya, Senegal, and Malawi implemented trade reforms without a significant loss in revenue as a percentage of GDP (Ebrill and others 1999).

If trade reform policy has relied on quantitative restrictions of imports, the conversion of such restrictions into tariffs can increase government revenue. Where tariff rates are high, these tend to generate little or no revenue in practice, so that reduction of tariffs which starts with the highest ones will not have a large fiscal effect. Reductions of tariffs to moderate levels can increase imports (and thus revenues), as the incentive to smuggle is reduced. Tariff collections can also be increased by eliminating some or all exemptions, which often are a significant source of revenue loss. Finally, an exchange rate depreciation, which should accompany significant tariff reduction, will raise the local currency value of imports and thus tariff revenue (see box 13.6).

When tariff rates are already uniform and in the moderate to low range, further tariff reduction is likely to result in revenue loss, however, and can present a serious problem. Alternate broad-based and nondiscriminatory revenue sources should be sought, and trade reform sequenced to coincide with the availability of these alternate revenue sources. Such alternative, broad-based tax instruments will be more efficient (that is, less distorting) than trade taxes. For many products, such as alcohol, tobacco, and petroleum, collection of taxes on domestic production as well as on imports will have low additional administrative costs and will reduce the incentives to develop inefficient import-substituting firms. Even very poor countries such as Cambodia have been able to introduce broad-based consumption taxes that reduce dependence on customs duties and raise much-needed revenues for development expenditures.

13.5.3 Labor and other factor markets

Reforms may be needed to improve the operation of labor markets should accompany trade reforms in order to enhance labor mobility. For example, in Peru in the 1980s, a trade reform failed to generate any supply response because of severe labor market rigidities. Labor legislation prohibited firms from shedding labor, closing plants, or even changing activities. This led to many bankruptcies, contributing to foreign exchange and financial crises and ultimately to failure of the reform (Nogues 1991).

The poor are often concentrated in the informal sector. When combined with trade liberalization, reforms that increase labor mobility in the formal sector can open up additional jobs in the formal sector for workers previously employed in the informal sector. This was the case in Panama, for example (World Bank 1999). The mutually supportive relations between trade, macroeconomic, labor market, and other policies may then serve to increase the credibility and payoffs of each.

Box 13.6. Summary of Revenue Impacts of Trade Liberalization

<i>Trade Reform</i>	<i>Expected Revenue Impact</i>
Replace NTBs with tariffs	Positive
Eliminate tariff exemptions	Positive
Eliminate trade-related subsidies	Positive
Reduce tariff dispersion	Ambiguous/Positive
Eliminate state trading monopolies	Ambiguous/Positive
Reduce high average tariffs	Ambiguous
Lower maximum tariff	Ambiguous
Reduce moderate or low average tariffs	Negative
Eliminate export taxes	Ambiguous/Negative

Source: Sharer and others (1998).

Property rights for land and water can also be important. For example, Egypt could potentially produce labor-intensive crops such as fruits and vegetables for export to the EU, as do other Mediterranean countries, which would benefit the rural poor (Barres and Valdes 2000). Because Egypt lacks land and water markets, however, the country has been unable to take advantage of this opportunity and continues to grow traditional crops.

13.5.4 Competition policies

The prices of manufactured goods are affected by competitive conditions in a country. It may be possible to increase the competitiveness of markets for manufactured goods by lowering external barriers to international competition and by reducing government-imposed barriers to entry by domestic firms. In small countries, an open trade regime is crucial, since there are fewer domestic firms contesting the market. In large countries, administrative and legal barriers against domestic entry are most important, since there are more potential entrants blocked by domestic barriers to entry (Hoekman, Kee, and Olarreaga 2001).

The effect of trade reform is affected by distribution networks. If there are barriers to entry into distribution, those who control this sector may be the primary beneficiaries of trade liberalization, being in a position to pocket much of what used to be collected as tariff revenue and not passing import tariff cuts on to consumers. In agriculture, parastatal marketing boards often strongly restrict competition for the products of poor farmers, but also restrain their incomes. This happened in Madagascar (box 13.2), for example (see also box 13.3 on West Africa). Elimination of these boards (provided that key ancillary services such as transportation and credit provided by the parastatals continue to be supplied) should benefit the poor. Competition among private firms is also important: exclusive government licenses to the private sector should be avoided to prevent a situation arising in which farmers are obliged to pay artificially high prices for their inputs and to sell their outputs to a single buyer at depressed prices. This prescription applies also to import monopolies and exclusive distribution arrangements.

13.5.5 Foreign direct investment and intellectual property protection

Foreign direct investment (FDI) is an important channel of technology transfer across national boundaries. Multinational corporations account for a large share of the world's research and development, and more than 80 percent of royalty payments for technology transfers flow from subsidiaries of foreign companies to their parent firms (UNCTAD 1997). Econometric evidence tends to support the view that developing countries receiving FDI perform better in terms of productivity than their counterparts that are not FDI recipients.

What matters from a poverty reduction perspective is whether or not and to what extent FDI has a positive effect on the incomes of the poor and on the prices of what they consume. Hence, it is important from a short-run viewpoint that FDI involve labor-intensive production and that it result in the transfer of skills through training. Improvements in communications, transport, and information technology, together with trade liberalization, have led companies to locate the labor-intensive parts of production in developing countries. In the 1970s such FDI focused in particular on textiles; more recently it has also included the electronics and auto parts sectors. Such investment can be an important catalyst for the creation of low-skilled employment—as exemplified by Mexico and several Southeast Asian economies.

Trade protection for foreign investors tends to attract the “wrong type” of investment. Protection may also result in losses to the host economy by providing rents to foreign investors at the expense of domestic consumers. Lall and Streeten (1977) studied some 90 foreign investments, using a cost-benefit methodology, and found that more than 33 percent actually reduced national income; this was mainly due to excessive tariff protection that allowed high-cost firms to produce for the local market at high prices, even though comparable goods could have been imported much more cheaply. Encarnation and Wells (1986) similarly found that between 25–45 percent of 50 projects studied (depending on analytical assumptions) reduced national income; again, the main culprit was high protection.

Intellectual property right protection can help attract FDI in sectors that rely on patent protection, helping to tilt the focus of investment projects toward manufacturing (Smarzynska 2000). Intellectual property protection can also be of direct importance to the poor in developing countries, especially for products and sectors that rely heavily on traditional knowledge and culture, such as ethno-botanicals and activities such as writing and performing music. Ineffective protection of intangible assets and intellectual property can have adverse consequences for poor people who are either producers or the beneficiaries of assets that have been built up over time. The costs of intellectual property rights include the price-increasing effect of protection, which can harm the poor by preventing access to drugs and by keeping prices higher than the cost of production. Intellectual property rights protection must therefore be complemented by trade and competition policy instruments that can serve to offset the market power granted to holders of those rights (Maskus 2001).

13.5.6 Safety Nets

One of the most important complementary policies for the poor is an efficient social safety net. Indeed effective social protection is important, independent of the needs related to trade liberalization (see chapter 17, “Social Protection”). The best outcomes for the poor can be expected when as a result of the overall reform process, of which trade is a part, growth accelerates in the economy as a whole. Especially in the short run, however, certain groups of the poor are at risk. It is essential that account be made of the interests of such groups, who are not protected by private savings, when reforms are considered.

All trade policy reforms need to consider the potential hardships faced by poor workers in activities that are opened up to foreign competition by import liberalization. Broadly defined, the policy options range from establishing a general social safety net, to safety net measures targeted to those who would be harmed by the trade reform, to selectively limiting the scope of reforms in order to minimize adverse impacts of reforms on the poor. As noted above, the last approach is difficult to implement effectively, in part because of the poor lack of political power to lobby in their interest. This subsection focuses on safety nets for those affected by reform.

Specific safety nets linked to trade reform have an uneven history. In practice, it is difficult to distinguish workers who are affected by trade reform from those who are harmed due to normal turnover or displacement in an economy. For example, the United States has been providing trade adjustment assistance (TAA) to workers displaced by international trade since 1962 (not linked to poverty), both monetary compensation (called trade readjustment allowances, or TRA) and retraining. In the early years of the program, it was found that income support was typically provided to workers who were not permanently separated from their employers—that is, the program was not well targeted (Corson and Nicholson 1981). However, changes in the design and monitoring of the program in 1982 and 1988 have resulted in better targeting (Decker and Corson 1995).

The results of retraining programs also appear to be mixed (see chapter 17, “Social Protection” and technical note N.2). When retraining is required, as in the United States, it may be ineffective. Generally, the effectiveness of retraining programs tends to increase if they are “demand-driven”; so, for example, subsidized apprenticeships in the private sector may work better than government-provided training programs.²¹ In industrial countries, an alternate approach to requiring retraining has been to require individuals to participate in a job search program. This appears to increase the likelihood of employment and to reduce unemployment benefits among recipients (Johnson and Klepinger 1991; Decker and Corson 1995).

It is difficult to justify providing safety net programs to poor people who are harmed due to trade reform when other poor people who suffer equivalent harm as a result of, say, technological displacement or price changes due to shifts in domestic demand are not compensated. In that sense, it is more equitable to employ general, country-wide safety nets to deal with problems linked to trade reform rather than to establish distinct trade-related special safety net programs. Challenges faced more generally in establishing safety nets are addressed in chapter 17, “Social Protection.”

13.6 Trade Policy Reform: Diagnostic Guidelines

When tracing the impact of trade liberalization on the poor, it is important to consider both the pattern of expenditures and the sources of income of the poor. What matters most in the short run, however, is the impact on incomes. The effect of trade reform on poverty in the longer term hinges on the growth process, which in turn will depend on a variety of complementary policies and institutions. In low-income countries, key complementary policies/institutions also need to be analyzed. This section provides a checklist of questions and issues that should be considered in the design and pursuit of trade reform.²² Interested readers should consult the other tools available to assist policymakers in identifying the impact of trade liberalization on the poor.²³

13.6.1 What is a “liberal” trade regime?

A trade policy regime should be predictable, transparent, and uniform. The following are elements of a liberal trade policy regime, and are intended to serve as a benchmark against which to judge the prevailing trade regime and to provide guidance on the direction of reforms:

- ⊃ No licensing, or other approvals, except for health, safety, and environmental reasons, and automatic licensing used for statistical purposes; no other quantitative restrictions (QRs).
- ⊃ Low and uniform tariffs. If the tariff is not uniform, it should have little dispersion, with only a small number of bands. A few sectors with high tariffs should be especially avoided.
- ⊃ If tariffs are important for revenue generation, uniformity implies that the overall level of the tariff should be such as to generate the revenue required. However, some products (such as alcohol and tobacco products) may be subjected to high duties to raise revenue, as long as equivalent excise taxes are imposed on domestic production.
- ⊃ An efficient customs clearance process with minimum red tape, that ensures tariff-free access to intermediate imports for exporters.
- ⊃ Only one instrument of contingent protection (a safeguard provision) in place. Antidumping measures should be avoided.
- ⊃ Efficient markets for service, which may require measures to ensure that competition prevails and that there is no discrimination against foreign suppliers that seek to establish a presence in the market, as well as appropriate regulation.

13.6.2 Is trade reform needed?

A number of questions are relevant in determining whether or not trade reform should be a priority and whether or not it would benefit the majority of the poor.

- ⊃ *What is the impact of current trade policies on the poor?* It is important to determine the effects on the poor of the existing pattern of protection/subsidization. These may be positive or negative, and may affect particular products consumed by the poor or the incomes of a significant number of the poor, whether country-wide or in a particular region. Taxes or support for important food staples or inputs to agriculture, in particular, should be identified and their incidence examined. In those cases where the structure of protection is not beneficial to the poor there is a prima facie case for reform. In those cases where some of the poor benefit, an assessment should be made of the relative magnitude of the potential losses and the economy-wide gains from reform.
- ⊃ *Are there nontariff barriers for reasons other than for health, safety, and the environment?* If so, there is again a prima facie case for reform, starting with conversion to tariffs. This reform is likely to benefit the poor more than the nonpoor because license recipients typically collect rents and are unlikely to be poor (almost by definition), and because the competition for licenses wastes resources that could be used more productively.
- ⊃ *What is the average tariff and how dispersed is it?* Dispersion generated by exemptions and tariff escalation often will lead to high effective rates of protection and is likely to entail significant inef-

iciencies. Dispersion means differences in the treatment of different sectors and segments of society, and thus increases the urgency for reform.

- ⊃ *Is there discrimination against agriculture?* This entails an assessment of the effective rate of protection for this sector compared to manufacturing. (See Schiff and Valdes (1992) for a description of a methodology to do this.)
- ⊃ *How well do critical service markets function?* Do the poor have access to important ancillary services, such as transport? Do policies discriminate against foreign suppliers and lead to high-cost, low-quality domestic supply? Is entry possible in labor-intensive sectors such as tourism? Does competition prevail in key backbone sectors such as transport, finance, and communications? Is appropriate, procompetitive regulation in place?
- ⊃ *How efficient is customs?* How long does it take to clear a container or air freight shipment? How does this compare to neighboring countries and to best practice? How large are unofficial trade facilitation payments? Is there a functioning drawback and temporary admission mechanism?

The foregoing analysis of the trade regime should yield a preliminary judgment on the desirability of trade reform. Analysis of both the impact of the existing policy and the likely effect of alternative reforms on the poor is important. The tools to undertake such an analysis can be constructed for most economies, with the basic requirements including detailed data on import and export goods, the trade barriers that apply to those goods, household survey information on the consumption pattern of the poor and the sources of their income, and data on the basic structure of the economy (ideally an input-output table or social accounting matrix). The basic elements of a framework for the analysis that is required is laid out in technical note K.1.

This preliminary judgment should be reviewed in the light of the potential short-term effects of trade reform on the poor. It is important to identify any possible negative effects early, so that arrangements for dealing with them and strategies for developing consensus in support of those arrangements may be planned.

13.6.3 Complementary policies

Trade policy reform and institutional strengthening must be implemented in the context of a variety of complementary policies. Some of these are general, and some are focused on making the trade policy reform more likely to benefit the poor.

- ⊃ Are measures in place to promote macroeconomic stability and a competitive exchange rate?
- ⊃ In agricultural markets, are price changes passed on to farmers, or does government or private intermediaries make large profits in the sale of farm products or farm inputs?
- ⊃ Is the reform likely to destroy existing markets that are significant for the poor? Will it allow poor consumers to obtain new goods? (See also Winters 2000 and 2001.)
- ⊃ Are there serious impediments (legal, cultural, transport-related) to labor mobility?
- ⊃ Are there serious financing obstacles to participation in trade?
- ⊃ In the short run, are trade-focused instruments such as the use of back-to-back letters of credit available to alleviate the most pressing obstacles to trade?
- ⊃ Are there serious obstacles in setting up a business?
- ⊃ Are there transport obstacles to trade?
- ⊃ Are there serious obstacles to entering major external markets or to meeting competition from abroad?

Most low income countries face relatively low traditional trade barriers in external markets, because of a variety of preference schemes, but there are specific problems related to, for example, sanitary requirements and competition from subsidized exports in third markets.

Trade-related institutions. The success of trade policy reforms depends upon a variety of institutions, both public and private. On the government side, an effective and noncorrupt customs authority is

critical to the success of reforms. Other institutions to which particular attention needs to be paid to ensure that trade reforms benefit the poor include marketing and export finance, both of which are necessary for export expansion. For the poor to benefit, it may be useful to establish organizations, such as a cooperatives, that can put together large enough shipments from individual producers to supply foreign markets and that are able to obtain financing linked to their exports, neither of which can be achieved by the individual poor farmer. There is substantial international experience on these issues, including through the International Trade Centre and UNCTAD in Geneva. Bilateral donors and multilateral development banks can provide assistance in the design of such programs, as well as financing.

Agriculture and the rural poor. Key issues for which complementary actions may be required for poor farmers include the availability and cost of education for children; research and development; and infrastructure, especially transport and communications. Unless the opportunity costs of farm residents can be raised, they will stay trapped in poverty.

13.6.4 Political economy of reform

Strong government commitment to the reform is critical. The government also needs to explain the rationale for reform and to win the support of at least some parts of civil society. Obtaining a broad consensus may be difficult, however: the benefits of reform are likely to be dispersed, uncertain, and spread over time; while the costs to sectors that will face increased competition from imports will be obvious, near-term, and likely to be concentrated on powerful political groups.

It can be tempting to design a pro-poor trade reform by identifying sectors that are important to the poor, either on the consumption side or on the income side, and singling out these sectors for preferential treatment when the protection of other sectors is reduced. If, for instance, many poor people produce maize, as in Mexico, it might seem sensible to exclude maize from a tariff reduction. There are at least two problems with this approach, however; one that is fundamental, and one that relates to political economy. The basic problem is that trade policy is a single instrument, and a fundamental principle of economic policy formulation is that a single instrument cannot be expected to address multiple targets. The political economy problem is that, once a highly differentiated trade regime is adopted, it becomes impossible to stop different interest groups building a case that their sector deserves special treatment for one reason or another. Returning to the example of maize, in addition to the poor producers that would benefit from continued protection, there is likely also to be a group of poor people for whom maize is an important expenditure item, and, hence, arguments for additional countervailing policies. Broad trade reforms frequently meet with less political resistance than cuts in protection to individual sectors.

A better approach would be to focus on developing two different sets of instruments: a trade policy focused on providing the incentives appropriate for efficient production and use of goods and services, complemented by policies aimed to redistribute income. The set of distributional instruments will necessarily have a much wider range of dimensions, including investments in expanding access to education, the provision of safety nets, and a range of infrastructure investments needed to give people in poorer regions access to the markets and other amenities enjoyed by relatively advantaged people.

13.6.5 Timing and sequencing

Groups benefiting from the status quo may naturally oppose reform and seek to delay adjustment as long as possible. As emphasized above, it is nonetheless extremely important to investigate in advance the potential impact of reforms on different groups of the poor and to design programs to address them. The timing of the implementation of trade reforms needs to be closely linked to the establishment of the programs that deal with their impact on the poor. Some important points about sequencing include the following.

- If a reform is pre-announced to be implemented over several years and is credible, normal market adjustment and labor force attrition can be used to alleviate adjustment costs. However, a gradual approach faces the risk of reversal or nonimplementation, as entrenched interests will have time to mobilize their opposition. A staged reform that is scheduled to take more than five years is not

likely to be credible unless it is anchored in WTO commitments or a far-reaching regional trade agreement.

- ⊃ It is important to address nontariff barriers and high tariff rates as early as possible.
- ⊃ Tariffs should be cut across-the-board during each stage of a gradual reform. If instead a target is set based on the tariff average, the temptation will be to cut tariffs only where they cause no immediate difficulty, postponing adjustments to the last.
- ⊃ Waiting for some important infrastructure project to be completed, such as a port facility or a road, is not usually a good reason to delay reforms.

In conclusion, not everything will be perfect at the start, but at a minimum, macroeconomic stability and a competitive exchange rate should be in place. The best outcomes for the poor can be expected when, as a result of the overall reform process, of which trade reform is a part, growth accelerates in the economy as a whole. That said, it must be recognized that the poor are least able to bear risks, and that in the short run there will be losses for some groups. Analysis of the likely impact of reform on the poor is important. General safety nets may not exist or may be inadequate in many low-income countries; in such situations, reforms should not be postponed indefinitely but should be implemented gradually, following a pre-announced schedule, and complemented by actions to minimize the adverse consequences suffered by the poorest in society. In many cases this can be done by directly targeting reform of trade policies that are clearly detrimental to the interests of the poor, and by ensuring that the reform process also considers the need for action in ancillary areas, such as service markets.

Notes

1. Sachs and Warner (1995), Dollar (1992), Edwards (1993 and 1998), Ben David (1993), and Frankel and Romer (1999).
2. See Coe, Helpman, and Hoffmaister (1997) for evidence and Romer (1994) for further discussion.
3. For example, Srinivasan (2000) found that of the 17 percentage point reduction in the population below the poverty line between 1951–55 and 1993–94, 15 percentage points may be attributed to growth and 2 percentage points to redistributive policies.
4. From the 1991 Household Expenditure Survey for Bangladesh.
5. In Mexico, wages from unskilled labor represents 40 percent to 45 percent of the income of the poor. Own consumption is the next largest, representing 15 percent of the income of the poor (Ianchovichina and others, 2000).
6. One view, for example Rodriguez and Rodrik (2000), is that there is a strong association between exports and growth but this association may be a consequence of exports causing output growth or of the two being jointly determined by the strength of a country's institutions. The latter view implies need for a comprehensive approach to development that would include improvement of a range of institutions along with trade liberalization.
7. More in-depth treatments of trade policy from a development perspective can be found at www.worldbank.org/trade and in McColluch, Winters, and Cirera (2001) and Hoekman, English, and Mattoo (forthcoming). The Bank Web site also offers access to tools that can be used to assist in the design of trade reforms, and cross-country data on trade policies that are useful for benchmarking purposes.
8. Under the WTO, safeguards require compensation to be offered to exporting countries if the action lasts more than three years. This is a useful mechanism to ensure that protection is temporary. See Hoekman and Kosteci (2001) for more detailed discussion.
9. To avoid anti-export bias, duty drawback schemes would also have to be extended to indirect exporters (that is, firms that do not themselves export but which sell to exporters). Administration of such mechanisms is quite complicated in practice for most developing countries.

10. Much cashmere is smuggled out of the country to avoid taxes, but herders nonetheless still lose income as middlemen capture much of the difference between world and domestic prices.
11. The impact of North–South or North–North agreements tends to also involve more efficiently priced imports from partner countries, and thus may be beneficial.
12. For example, if the markets for rice, wheat, sugar, milk products, sugar, and cotton were open in China and India, that would greatly expand the size of the world market for these products and reduce the impact of various exogenous shocks (Tyers and Anderson, 1992).
13. Abstracting from fragmented world markets, commodity price instability is associated with inelastic demand, lags in supply adjustments due to seasonal production, weather conditions, and so on.
14. Prices in domestic commodity markets (for example, for sorghum and maize in inland areas of Africa and South Asia) that are disconnected from world markets by a combination of high domestic and marketing costs and/or restrictive trade policies may fluctuate more than world prices both within and across seasons. Opening up to imports could therefore increase price stability; for example, by cutting off price peaks resulting from crop failures. The use of measures to control imports and exports in ways that do not adjust flexibly to domestic market conditions may also lead to higher domestic price instability than in world markets—or worse, to costly and wasteful accumulations of excess stocks held by government marketing organizations. A significant portion of such stocks often are lost to pests and weather.
15. If agriculture import barriers are not higher than for manufactured goods, there is no rationale for raising them because adjustment will already have taken place.
16. Farmers in middle-income countries may face different incentives, as they will suffer a decline in demand for their products in the EU because of preferential access provided only to the LDCs.
17. In the case of agricultural exportables, increased domestic transport efficiency to the port will typically raise inland farmgate prices. This could worsen the welfare of low-income consumers of that product in inland areas.
18. The templates are available at <http://www1.worldbank.org/wbiep/trade/services.html>.
19. The relative price of tradable to nontradable (or home) goods (P_t/P_h) is typically referred to as the real exchange rate (RER) and is used as a measure of the competitiveness of the tradable sector. The reason is that several of the determinants of P_h (such as wages) affect the production costs of tradables. For purposes of illustration, suppose a government runs a fiscal deficit and finances it by printing money. The resulting inflation would raise prices in the nontradable sector. If tradable prices do not increase by the same amount, the inflation would lower P_t/P_h and thus the real exchange rate, thereby reducing the competitiveness of the tradable sector (see also the Annex).
20. Trade taxes as a percentage of GDP were 5.3 percent in Africa, 4.4 percent in Asia, and 3.5 percent in the Middle East (Ebrill and others, 1999).
21. O’Leary (1995) discusses the measurement of the effectiveness of labor market programs in Hungary and Poland.
22. A more detailed presentation of these guidelines may be found in Michalopoulos (2001).
23. For a synthesis of available methods, see the proceedings from the October 2000 conference “Poverty and the International Economy,” available at <http://www1.worldbank.org/wbiep/trade/povertyconf.html>.

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Note: A number of these papers as well as many others dealing with trade policy issues can be downloaded from www.worldbank.org/trade.

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Part 4

Rural and Urban Poverty

Chapter 14

Rural and Urban Poverty: Overview

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14.1 Why Have Separate Chapters on Rural and Urban Poverty?

The poor have much in common with each other wherever they live, and there are many interactions between rural and urban societies and economies. However, there are two important reasons why rural and urban poverty should be examined separately:

- The characteristics of urban and rural poverty have some significant distinctions that it is important to identify and understand, so that poverty problems can be correctly assessed and appropriate interventions designed.
- Certain institutions have particular responsibility for either rural or urban outcomes. The separate chapters of this book aim to assist them.

14.2 Some Concepts and Observations Regarding the Rural and Urban Contexts

The minimum population threshold for defining urban areas varies dramatically from one country to the next, but an urban area is typically characterized by high density of settlement in a contiguously built-up area, by the structure of economic activity, and sometimes by administrative attributes.

Urban and rural areas are inextricably linked in the process of development. As development progresses, the economy of all countries change from a predominantly rural to a more heavily urban character. Throughout this transition, the nature of the rural-urban linkages affects the relative levels of income in the two areas and the types of problems faced by the poorer and disadvantaged members of each population.

Urban and rural areas are a continuum, but they are internally heterogeneous. Village clusters, towns, medium-sized cities, and large and “mega” cities present very different problems and have different institutional capacities. Policy responses to address poverty must take account of these facts. Inequalities in income and welfare within the different regions of a country can be at least as important an issue for poverty strategies as generalized urban and rural distinctions.

A stylized comparison of the key characteristics of rural and urban areas and of the challenges faced by the poor is summarized in tables 14.1 and 14.2. It should be noted that these are broad generalizations: most urban and rural areas demonstrate some combination of these characteristics.

The fundamental goals of a poverty reduction strategy are to increase the opportunities available to poor households, reduce their vulnerability to unfavorable external events, and empower them to address their own specific problems. Tables 14.1 and 14.2 indicate that the emphasis for urban and rural areas must be different. In rural areas, the key aspects of the strategy to reduce poverty should be (a) to increase production, by both increasing the productivity of existing activities and developing new ones, resource-based or otherwise; and (b) to improve the accessibility of basic services, especially health, education, and infrastructure. In urban areas, the emphasis should be more on reducing institutional and other barriers to livelihood opportunities, infrastructure, and services.

Table 14.1. Characteristics of Rural and Urban Areas

<i>Characteristic</i>	<i>Rural areas</i>	<i>Urban areas</i>
Economic activity	Mainly primary production, based on land and other natural resources	Location of concentrated economic activity, mainly based on manufacturing, trade, and services
Demographics	Population dispersed in small clusters	Population concentrated and growing
Physical access	Scattered, low-quality transportation infrastructure and services; time and travel costs high	Locus of transportation infrastructure but quality of service variable, due, for example, to congestion
Environmental risks	Related largely to productive processes and deterioration of natural resources	Related to both production and population density (for example, waste, air pollution)

Table 14.2. Challenges for the Poor in Rural and Urban Areas

<i>Topic of Challenge</i>	<i>Rural areas</i>	<i>Urban areas</i>
Livelihood opportunities	To reduce income risk and diversify income sources, nonfarm income often sought elsewhere, through periodic migration; significant dependence on self-provisioning	Labor market often dualistic; incomes mainly from semi-permanent wage labor, informal sector, and petty trading; greater dependence on cash
Food security	Adverse climatic conditions may cause local food shortages and hunger	Adequacy of food depends on cash availability
Physical and social infrastructure	Facilities often remote and disconnected; services and O&M often of poor quality	Formal and high-quality services expensive and restricted; regulation makes low-cost alternatives scarce
Housing and land	Few problems with shelter per se, but land tenure may be insecure	Choice often limited and environmental risks high; may be forced onto illegal or other sites with insecure tenure
Institutions/governance	Largely removed from formal structures of power, but traditional structures have local role	Often limited access to political power, and vulnerable to corruption; community and social networks important
Environmental vulnerability	Adverse climatic conditions affect livelihoods	Density and poor urban management worsen effects of environmental disasters and risks

Sources: Evans, Allison. 2000. "Working Paper to Address Spatial Considerations in PRSP Processes." World Bank Washington, D.C. Processed. Satterthwaite, David. 2000, March. "Location and Deprivation: Beyond Spatial Concepts of Poverty." International Institute for Environment and Development, London.

14.3 The Need for Overall Coherence

This does not mean that there should be two fundamentally separate approaches to urban and rural poverty. The development of a society and an economy is a dynamic process, and population settlement is ongoing, not static, with the result that the actual boundaries of rural and urban areas are constantly shifting. Urban poverty issues are particularly apparent in zones where population growth is high and administrative capacities are inadequate or unprepared to respond to pressing needs, for example, in new settlements that are outside existing municipal boundaries. Migration—not only rural-to-urban, but also within and between rural and urban settlements—follows many patterns: circular (with age and lifestyle), seasonal, and permanent.

Spatial mobility allows individuals to respond to economic opportunity and helps to manage risks, producing spatial agglomeration that is good for both rural and urban populations. The increased concentration of population and of economic activity through the process of urbanization reduces the costs of production and service delivery, enlarges markets for goods and services, and creates a wider labor pool. Urban areas account for the major share of income growth and of fiscal revenues in most countries, but at the same time rural areas are often more prosperous and productive when they are close to urban centers, which provide major markets, financial resources, and employment options. Healthy and buoyant urban economies are therefore essential not only to eliminate poverty within urban boundaries but also to make possible the elimination of rural poverty.

At the urban periphery and in small towns, rural and urban distinctions can be blurred. Nonfarm employment (small manufacturing and services) is important in rural areas, and urban agriculture is a significant source of food and income in many cities. The livelihood of urban and rural poor often depends on multiple engagement in both sectors and on social safety nets based in both locations.

14.4 Toward an Integrated Rural-Urban Perspective: Identifying Policies of Mutual Benefit for the Urban and Rural Poor

For households to escape from poverty and enjoy the other benefits of development, they need to be able to participate in the higher value-added activities for which demand grows as incomes grow. For the

rural poor, this means expanding and diversifying agricultural production and diversifying into nonfarm activities, using new skills, technologies, and other inputs as they become available to compete with producers in other locations. As these changes take place, the rural area will become linked in new ways with urban centers and may eventually take on urban characteristics itself. To escape poverty, some or all members of rural households, especially in areas that are resource-poor or that have high transport costs, may nonetheless have to move to locations where the economic prospects are better. How a country manages such shifts of economic structure and demographics will affect the growth, nature, and persistence of poverty in both rural and urban locations.

Poverty reduction strategies can, to a considerable extent, be synergistic (“win-win”) for rural and urban areas. The temporal dimension is important in this sense. The short-term view takes existing population distribution and productive activities as given, and looks at interventions separately for the rural and urban contexts. The long-term view would factor in mobility, changes in productive structure, sources of growth, and investment variables. Targeted actions remain necessary even in the long term, for example, for rural extremes of isolated/low-density/poorly resourced communities, and for urban extremes such as slums.

Actions with the potential for fostering rural-urban synergy include:

- ⊃ **Promoting spatially integrated labor markets.** Reducing artificial barriers, such as regulations, and costs to mobility; removing locational subsidies and other distortions on locational choice; improving information flows; and providing wide access to education and training.
- ⊃ **Enabling the free flow of goods, services, and finance.** Removing barriers to trading; encouraging procompetitive producer-trader associations; improving local area market information; removing unnecessary regulation; improving access to technology, communications, and transport; nurturing the informal sector; promoting entrepreneurship and small business development; providing banking services; easing foreign exchange transfers, including remittances; and removing barriers to reinvestment.
- ⊃ **Promoting land tenure security** and facilitating the functioning and transparency of land transactions.
- ⊃ **Investing in interregional transport**, such as farm-to-market roads and intercity networks.
- ⊃ **Developing food security strategies**, especially for poor people, based on realistic assessment of both rural and urban needs and capacities.
- ⊃ **Creating policy frameworks and institutional mechanisms** to provide local governments of all sizes and rural/urban constituencies with the appropriate financial resources and capacities to carry out necessary functions such as local economic development; this would include reform of local governments to become more accountable to their constituencies and to become active partners with their communities.

Tradeoffs and potential conflicts may remain. Issues of land conversion at the urban periphery, competition for water and energy resources, and waste disposal often dominate debates on rural and urban interactions. Poverty reduction strategies must rise above the conflicts between rural and urban areas and focus on ensuring rights and access for the poor in both locations.

The biggest obstacle to addressing the rural-urban interface tends to be the existing institutional, political, and bureaucratic structures, which often impede cooperation across sectoral and administrative boundaries. Planning for the development of local areas (subregions) on the basis of natural economic and social relations may require new institutional approaches, such as public-private partnerships. People-based poverty strategies that give greater voice and control to the individual and household are necessary to identify integrated and flexible solutions that recognize the multiple sources of livelihood.

Chapter 15

Rural Poverty

Louise Cord

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This chapter was prepared by: Louise Cord with inputs from Harold Alderman, Jock Anderson, Christopher Scott, Nwanze Okidegbe, Janet Owens, Kees Van de Meer (integrating rural poverty into the PRSP process); Mona Sur (health and education); Christina Malmberg-Calvo and Andrea Ryan (rural infrastructure); Klaus Deininger (land); David Groenfeld, Ariel Dinar, Safwat Abdel-Dayem, Itaru Minami, Geert Diemer, Fernando Gonzalez (irrigation); Louise Cord, Stephanie Charitonenko, Douglas Pearce, and William Steel (rural microfinance); Cornelis de Haan (livestock); Derek Byerlee and Gary Alex (research and extension); Veronica Nyhan-Jones (social capital); Louise Cord, Harold Alderman and Jock Anderson (risk management); Janet Owens (monitoring and evaluation); Patti Petesch (rural participation).

15.1 Introduction: Rural Poverty and the Importance of Pro-Poor Growth

The argument for developing and implementing strategies to reduce rural poverty is compelling. Approximately 75 percent of the world's poor reside in rural areas, and at current trends the global percentage of poor in rural areas will not fall below 50 percent before 2035 (Ravallion 2000, Alderman 2000). Moreover, in most developing countries the likelihood of being poor and the severity of poverty are greater in rural than in urban areas. For example, the incidence of rural poverty reported in many of the first PRSPs was between 10 and 40 percentage points greater than in urban areas (table 15.1).

These high poverty rates reflect, to a large extent, the significant and well-known challenges facing the rural population. These challenges stem from five broad characteristics of rural space:

- A strong reliance on the natural resource base to sustain livelihoods, which has led to: (1) a high risk environment for households, given their vulnerability to climatic fluctuations, plant and animal disease, price fluctuations, and macroeconomic policy shifts (for example, devaluation, interest rates, and so forth); (2) seasonal incomes and food supply; (3) heterogeneous agricultural production and investment strategies; and (4) limited growth opportunities, given the low and relatively inelastic demand for food products as national incomes rise.
- A low population density and geographic constraints, which have led to high transaction costs and reduced access to physical and social infrastructure.
- An informal economy, which makes it more difficult for policy makers to influence local labor markets and to provide targeted social protection or other support based on income criteria.
- Cultural and linguistic differences, which have often led to limited voice in national and even local decision making processes, especially in remote areas.
- An important role for women in the economy that is often not recognized in rural income generating programs or in women's access to social services.

To overcome these challenges and address the pressing problems of rural poverty, strategies focused on pro-poor growth of the rural sector must be devised and implemented. Both rural and urban poverty reduction can be accelerated by the growth of the rural sector, especially agriculture. For example, in India poverty has been reduced more by rural economic growth than by urban growth (Ravallion and Datt 1996). Agricultural growth directly benefits agricultural households by raising incomes and food security. It also indirectly benefits urban and rural households by: (1) promoting higher wages; (2) lowering food prices; (3) increasing the demand for consumer and intermediate goods and services; (4) encouraging the development of agribusiness, (5) raising the returns to labor and capital; and, (6) improving the overall allocative efficiency of factor markets.¹

The non-farm rural economy also provides important direct and indirect benefits to rural households, mainly by providing entrepreneurial or wage income, by lowering the cost of locally produced goods and services, and by raising the demand for food products. Non-farm activities can also reduce income disparity in areas where land distribution is highly skewed (Adams 2001).

Table 15.1. Difference between Rural and Urban Poverty

	<i>Percentage points difference between the incidence of rural and urban poverty</i>
Burkina-Faso	35
Mauritania	41
Mozambique	9
Tanzania	16
Bolivia	42
Honduras	23
Nicaragua	38

Source: PRSP documents for the countries mentioned above.

Box 15.1. Initial Conditions and the Impact of Growth on Rural Poverty Reduction

The distribution of assets, access to social and physical goods and services, as well as other geographic and household factors affect the impact of growth on rural poverty. In the farm household sector of rural China, consumption growth rates were larger in counties with higher initial average physical and financial wealth (Ravallion and Jalan 1999). Similarly, Timmer (1997) finds that in countries where the distribution of income is relatively equal, the poor will benefit from agricultural investments, but when distribution is skewed toward the wealthy, the poor are less likely to benefit. Deininger and Squire (1998) also emphasize that access to land assets is critical to benefiting from agricultural development and that an initial land distribution skewed toward the wealthy will weaken the connection between sectoral growth and poverty reduction.

Initial conditions also affect the relationship between growth of non-farm earnings and rural poverty reduction. Lanjouw and Lanjouw (2001) discuss how wealthier households may have access to physical and human capital that enables them to engage in relatively more productive activities than poor households. In India, Ravallion and Datt (1999) find that non-farm economic growth was less effective in reducing poverty in states with “poor” initial conditions in terms of rural development and human resources. Low farm productivity, low rural living standards relative to urban areas and poor basic education can inhibit the prospects of the poor participating in growth of the non-farm sector. (Ravallion 2000).

The impact of growth on poverty reduction varies both by nation and across regions and households within countries. Research indicates that the impact of *rural* sector growth (both from the farm and non-farm sectors) on poverty reduction depends upon initial conditions, such as the distribution of assets, access to social and physical goods and services, and geographic factors (box 15.1). Consequently, growth alone is not sufficient to successfully attack the high rates of rural poverty; strategies that redress the weak initial conditions facing many poor households are critical. Research suggests that raising agricultural productivity, especially for smallholders, and expanding infrastructure and social spending in poor rural areas, can help to overcome weak initial conditions and improve the likelihood of pro-poor growth (Ravallion and Datt 2002). Thus, designing interventions to promote pro-poor growth in rural areas means providing opportunities for the rural poor to increase not only their ownership of assets but also the productivity of assets already owned.

This chapter aims to assist national PRSP teams and Bank staff in using the PRSP process to more effectively address rural poverty and develop pro-poor rural growth strategies. It provides an overview of how to better integrate rural issues into the poverty diagnosis, participatory processes and monitoring strategy, and then examines how to increase the rural impact of government interventions. It concentrates on those policies designed to increase the ownership by the rural poor of key assets and/or the productivity of those assets they already own. As such, the chapter adopts a holistic, cross-sectoral approach to rural poverty reduction taking into account the particular constraints facing rural areas. It builds on the organizing framework of the “sustainable livelihoods” approach and covers human, physical, natural, financial, knowledge and social capital assets, as well as options for risk management.

Key messages for rural poverty reduction strategies include the following:

- ***Rural poverty issues need to be integrated into all four parts of the PRSP process.*** Most poverty reduction strategies identify rural development as a priority sector and identify many interventions for rural development. However, the impact of poverty reduction strategies can be improved through the inclusion of: (1) a rural participation strategy to ensure that rural stakeholders are involved fully in the design, implementation and monitoring of the strategy; (2) a diagnosis that not only assesses the rural poverty profile, correlates of poverty (including income sources and access to assets and markets) and key determinants of rural poverty, but also evaluates the overall performance and incentive framework of the rural sector and its impact on the poor; and (3) spatially differentiated poverty impact and intermediate monitoring indicators that help focus policy makers and national actors on rural poverty reduction.
- ***Incidence of benefits and the importance of sequencing.*** Investments in natural (land tenure and water), financial (credit and livestock) and knowledge assets (research and extension) have direct and indirect benefits, which are not evenly distributed. The most important direct benefits of public investment tend to be in increased land and livestock productivity, while the indirect benefits are transmitted mainly through labor and food markets. The extent to which the poor receive the direct and indirect benefits depends upon their participation in rural markets, the level of physical

and human assets, and access to complementary assets (for example, research and extension with credit). A key priority is to ensure a minimum level of human and physical assets for the rural poor, which is necessary to access the economic information, markets and services to allow producers to fully benefit from public investments.

- 3) **Packaging.** Not only is a minimal level of social and physical infrastructure required to enable people to benefit from investments, but the packaging of such investments is also important. For example, improved access to land or irrigation needs to be combined with improved access to knowledge (research and extension, market information) and financial services. However, given the diversity of service providers and financing sources for productivity enhancing investments, it often is difficult to ensure the delivery of a comprehensive package to smallholders.
- 3) **Interventions in the rural sector need to recognize and capitalize upon women as key economic actors, and not only as a “vulnerable and excluded group.”** Interventions need to take into account the economic role played by rural women and focus not only on improving social well-being and reducing risk, but also on fostering broad-based rural growth and enhancing the access to and management of natural, financial and knowledge assets by women.
- 3) **Participation.** A participatory approach can be pursued through various means, such as conflict resolution mechanisms for common land management, water users associations, parent-teacher organizations, beneficiary surveys for health, community involvement in infrastructure development, and participatory development of research and extension services.
- 3) **Growing demands on a fragile private sector.** Following the structural reforms enacted during the past two decades, the private sector’s role has grown. The private sector is expected not only to provide farm and non-farm income generating activities, but also to play a direct role in the financing and delivery of some public goods and services in rural areas. At the same time, in poor regions, the incentives and capacity for private sector involvement are most limited. Options such as market-based business development services and regulatory frameworks that promote private sector involvement (for example, intellectual property rights for seed development, warehousing receipts and their use as collateral, and prudent supervision standards adjusted for microfinance institutions) could need further exploration.
- 3) **Institutions for broad-based rural development.** The success of development initiatives, particularly those targeted in support of the rural poor, depends upon the existence of well-functioning institutions, able to collaborate across regional and functional boundaries and responsive to the people they are meant to serve. Yet poverty reduction strategies rarely analyze institutional capacity or discuss the institutional framework for priority public actions. The priority areas for action discussed below consistently highlight the importance of strengthening institutional capacity, whether it be public (land registries, extension providers), private (microfinance institutions, extension providers), or civil society based (water users, producer associations).

15.2 Integrating Rural Poverty Issues into the PRSP Process

Most poverty reduction strategies advocate rural development as a priority sector and identify many interventions for rural development. However, attention on rural issues is more limited in the poverty diagnosis, the monitoring framework, and the participation strategy. As a result, the priority public actions tend not to be systematically linked to poverty reduction and the monitoring activities are not always consistent with the priority actions proposed (Cord and Verissimo 2001). While poverty diagnosis, monitoring and evaluation, and participation are covered in depth in volume 1 of the Sourcebook, this section highlights some options to better integrate rural poverty issues into these aspects of the PRSP process.

15.2.1 Rural poverty diagnosis

A good poverty diagnosis is a key building block for a poverty reduction strategy.² The main ingredients include:

- A *poverty profile* that: (1) identifies the rural poor (based on income and non-income indicators), (2) analyzes the severity of rural poverty, and (3) assesses the degree of income and asset (particularly land) inequality. If possible, the evolution of these indicators over time will also be discussed.
- An analysis of the main *correlates of rural poverty*, that is, the key factors associated with a higher incidence of poverty (such as asset levels, market participation, sources of income, and geographic factors).
- An analysis of the most important *determinants of rural poverty*, if possible identified through regression analysis and qualitative techniques.
- A sectoral analysis that, *inter alia*, evaluates *the impact of past programs on poverty* and the distribution of income and assets.

This section complements the various methodologies and technical options for analyzing poverty and inequality are presented in chapters 1, 2, and 7. This section complements those chapters by highlighting some specific issues to be covered in a rural poverty analysis.

Poverty profile – who are the rural poor?

Generally, PRSPs present the urban and rural poverty rates; however, less frequently is the poverty rate further broken down to reflect the heterogeneous nature of rural space. To understand who are the rural poor and what are the key correlates of rural poverty, it is important to differentiate the rural poverty rate by region (preferably agro-climatic as well as administrative), degree of remoteness, ethnicity, asset levels (particularly land ownership), and by principal source of income (cash crop farmers vs. food crop farmers). Given the particular constraints faced by female-headed households in urban and rural areas, spatially disaggregated poverty levels should distinguish by gender of household head. The importance of disaggregating rural poverty data is highlighted in the example of Brazil, which illustrates significant differences between urban and rural poverty, regional differences in rural poverty, and stark differences in the rural poverty rate depending on the region's proximity to urban areas (table 15.2).

Correlates of rural poverty – what are the variables associated with rural poverty?

The analysis of the correlates of poverty assesses a household's likelihood of being poor if it has certain characteristics. Generally, this type of analysis examines the impact on the poverty rate of education and health outcomes (or services) as well as infrastructure access and regional characteristics. In addition to these variables, it is important in a rural context to assess the impact of income sources, asset holdings (in particular land and social capital), market participation rates, and the risks or the likelihood of households being poor.

Income sources

Rarely do poverty assessments present detailed information on sources of income. Data on household income are not systematically collected or presented in part because expenditure data is considered more reliable for calculating the poverty line (see chapter 1). Rural households engage in a variety of income-generating activities that span the agricultural and non-farm sectors (among them livestock, forestry, cash crops, food crops, fisheries, agricultural trading, non-farm employment and/or non-farm microeconomic enterprises). The package of economic activities in which the rural poor are engaged serves not only to

Table 15.2. Locationally Disaggregated Poverty Incidence in Brazil

	Northeast	Southeast
	<i>Poor as % of population</i>	<i>Poor as % of population</i>
Urban	30.8	6.4
Metropolitan areas	18.6	4.9
Urban areas	35.7	7.9
Rural	49.0	23.8
Urbanized Areas Near Municipalities	15.9	9.6
Rural Agglomerations with Permanent Structures	46.0	24.4
Isolated Rural Agglomerations (10-51 Households)	31.8	n/a
Rural Areas that do not meet above criteria	51.5	24.7
Total	37.3	8.4

Source: World Bank (2001).

increase their income, but also to diversify their earnings and manage potential risks. Analyzing the sources of income of the rural poor is important to:

- understand the impact of policy changes (for example, price liberalization) and exogenous shocks (for example, price shocks, climatic shocks, economic downturns) on the rural poor;
- identify income generating strategies used by the rural non-poor; and
- target interventions to the poor (such as providing technical advice to growers of certain crops in regions with the highest poverty rates).

Assets

In general, poverty analysis investigates health and education outcomes for the poor and non-poor along with their access to basic health and education services and physical infrastructure (electricity, roads, potable water, communications networks). However, this information is not always disaggregated for rural and urban areas, despite those areas' very different levels of access to human and physical infrastructure. Further, poverty assessments rarely look beyond access to human and physical infrastructure to other elements that affect rural livelihoods and the probability of being poor.

These elements include access to assets that are particularly important for agricultural production and marketing:

- *Land use and ownership patterns*, including information on type of land (pasture, forestry, crop), quality of land (irrigated or rainfed), cropping patterns, land tenure arrangements (title, customary, communal shared), and farm size. The incidence and impact of rural investments on the rural poor depends to a large degree on the farm structure and the distribution of land.
- *Housing assets*, which are particularly vulnerable to the impact of climatic shocks, such as in Central America after Hurricane Mitch. Housing assets are also critical to the urban and rural poor in the colder climates of eastern Europe and central Asia.
- *Livestock ownership* (categorized by species), which is important not only for income generation (particularly for pastoral societies), but also as a savings option and a mechanism for risk management. Often rural households will sell off their livestock when faced with a shortfall in income.
- *Access to technical assistance and market information* that enables the rural poor to raise productivity and market revenue.
- *Social capital assets* (for example, participation in community and national organizations), which have been linked to expanded access to other assets for economic development and improved risk management. For example, producer organizations and community organizations can be critical to agricultural marketing.

Table 15.3. Nepal, Access to Basic Infrastructure, 1995/96

Percentage of households having access to:	All Nepal	Urban Areas	Rural Areas
Piped water indoors	8	46	5
Piped water indoors + wells	54	86	52
Toilets	22	67	18
Sanitary system	9	52	6
Garbage disposal	2	20	0.4
Electricity	14	80	9
Telephones	1	12	0.2
Paved road within 30 minutes	23	95	18

Source: World Bank (1999).

Market participation

It is also important to analyze household participation (both selling and buying) in rural financial, land, product and input markets. If possible, the data should cover the prices, quantity and timing of the transactions as well as the transaction costs, intermediary fees, and transport costs. Factoring in this information is important to assess:

- the impact of price fluctuations and policy changes on household income (for instance, to assess the distributive impact of the removal of fertilizer subsidies);
- key constraints on market participation and optimization of the return on market transactions;
- impediments to improving farm income and productivity; and
- the extent to which rural markets are accessible and are used by the rural population. Shallow markets often have more market distortions and higher transaction costs and tend to be less useful in risk management.

Vulnerability to risk

In light of the significant risks facing rural households, it is important to measure rural households' degree of exposure to negative income shocks which may push them deeper into poverty in the future (Sarris 2001). Households that are vulnerable to risks and income shocks may lower investments in productive assets, as they seek to hold more liquid reserves, and may diversify their income sources, perhaps at the cost of lower returns. Analysis should cover three phases:

- **Identification of the type and frequency of the shocks affecting rural households.** The objective is to seek to diminish the frequency and/or magnitude of the risks (for example, through veterinary vaccinations for cattle diseases), to help mitigate the impact of the risk on households (for example, by providing improved rural veterinary services), or to help rural households cope with risks (for example, by making microfinance services available) after these occur.
- **Measurement of the impact of income and other shocks on rural households and how this impact varies in light of household and community characteristics.** Chapter 1, section 1.4 and the associated technical note A.11 shows how regression techniques can be used to assess both the impact of risk on households and the importance of household and community variables in mitigating the risk. Changes in asset ownership (for example, livestock), health status or diet also can be studied to analyze the vulnerability of households to risk. Similarly, the analysis may reveal that access to education, informal savings networks, and public services (water, electricity, sanitation) are important in reducing vulnerability.
- **Analysis of the risk-coping strategies of the poor and non-poor, not only to assist households in improving risk management, but also to ensure that the design of development interventions takes these strategies into account.** For example, improved but more labor intensive cultivation techniques have in some cases not been adopted by households because they would have required a reduction in labor market participation, which was a critical component of household income diversification strategies.

Determinants of rural poverty

Regression analysis of household data, preferably combined with qualitative information about how the poor perceive the causes of their poverty, and with rural sectoral analysis, is useful in identifying key determinants of rural poverty. Information on the determinants of rural poverty can be useful in prioritizing public actions of the PRSP and in evaluating the quantitative impact of investments on poverty. For example, in the Brazil rural poverty diagnosis, a key finding was that the returns to farmland were highly dependent on the levels of complementary productive inputs (purchased inputs, machinery) and demographic factors (age of operator, education) (World Bank 2001).

Sectoral analysis

The last ingredient of a good rural poverty diagnosis is an assessment of the impact on poverty of rural sectoral growth, as well as rural development policy and expenditures.³ This analysis is generally not included in PRSPs or poverty assessments, yet macroeconomic and sectoral policy can have an important effect on rural poverty and the potential for pro-poor growth. Without an understanding of the impact of past policies and expenditures, it is difficult to incorporate lessons learned and improve the effectiveness of development programs.

Rural sector growth

In evaluating rural sectoral growth and its impact on rural poverty, three broad questions can be posed.

- 3) *What has been the absolute and relative performance of the agriculture sector?* What are the aggregate trends, such as agricultural GDP by subsector (that is, the share to forestry, food crops, cash crops, livestock, fisheries, and forestry), export/import trends, yields, production levels of key products and inputs (for example, fertilizer and tractors), and product and input price trends? What are the relative trends, such as agricultural GDP compared with overall GDP and other subsectors, producer price index for agricultural products compared with the CPI, rural wage rates compared with urban wage rates, and regional prices trends? Also, how have these aggregates evolved across regions? Along with the poverty profile, this information is important to identify the sources of growth, and in particular to examine growth in subsectors and regions where the poor are most affected.
- 3) *What are the key engines of agricultural growth* (for example, investments in agricultural technology, infrastructure, and education)? How do these compare with the determinants of rural poverty reduction? Do the poor have access to and utilize these resources? Why or why not?
- 3) *What has been the impact of past growth on the rural poor and non-poor?* What are the elasticities of poverty reduction, both overall and as they vary across regions and households? Have the activities in which the poor are predominantly engaged benefited from growth? Similarly, have the regions where the poor reside benefited from growth?

Policy framework

It is important to establish in advance the effects of the policy framework on growth and rural poverty. Among the elements that merit examination are the incentive framework of agriculture; identification of the winners/losers in government market interventions; the agricultural potential and comparative advantage of smallholders; and the impact of macroeconomic trade and exchange rate policy on various groups of producers. A variety of tools covering partial equilibrium analysis (demand, supply, multi-market, comparative advantage analysis), computable general equilibrium models, and household microeconomic simulations (for example linear programming) are available to assess these areas.⁴

Analysis of the policy framework will include:

- 3) *Regulatory issues.* A review of the regulatory framework can reveal the incentives for: (1) private sector investment in new technology and improved seeds; (2) provision of credit to small land-

holders (use of land as collateral for credit); and (3) deepening of rural product wholesale markets, which enables the use of warehouse receipts as collateral. Analysis of the regulatory framework can also reveal the extent to which there is appropriate and prudent oversight of microfinance institutions and whether women have the legal right to inherit land assets. While most of these issues concern the regulatory framework at the national level, local regulations can also affect market incentives, for example market taxes, limits to entry into agricultural trade, and formal and non-formal restrictions for truck transporters.

- 3) **Institutional issues.** Often public and private institutions are weakest in poor areas: high transactions costs reduce the returns on investments. A frequent problem is the harsh conditions which reduce the attractiveness of rural postings for public and private sector employees. In order to have a better understanding of the key constraints to providing services to the poor, sectoral assessments must evaluate the capacity and responsiveness of national and local public institutions involved in rural development and in particular in assisting the poor. They also should assess the extent to which the private sector is involved in key aspects of delivery, again especially to the poor, of infrastructure services, technology dissemination and development, animal health services, and rural financial services.

Rural sector expenditures

Chapter 6, “Public Spending,” outlines a comprehensive approach to the assessment of public expenditures. This section highlights three aspects of public expenditure analysis that are relevant in rural communities.

1. A basic understanding of the nature of such expenditures. This requires examining: recurrent and one-time investment costs; their distribution by category (subsidies, per diem, investment, material); and the specific types of programs that receive funding (such as rural primary education, subsidies for regular visits to rural health clinics, vouchers for technical assistance, maintenance of rural feeder roads).
2. An assessment of who is benefiting from the investments. This will identify the incidence of rural expenditure programs (using household and administrative data), will set up tracking systems to monitor flows to rural areas, and can link the spatial distribution of rural expenditures to regionally disaggregated poverty maps.
3. An assessment of the overall quality of the programs, which generally involves cost-benefit analysis, benefit assessments, qualitative surveys, and the tracking of implementation and impact monitoring indicators.⁵

Data requirements

All these types of analyses are data intensive. Most of the data can be found in household surveys (although generally a rural component of the survey is required), government budgets, administrative data, case studies, qualitative surveys, and population and agricultural census data. Recently new techniques have emerged that allow for the linking of census and household data, which can assist in providing detailed spatially disaggregated information on the incidence and correlates of rural poverty (Elbers and others 2001 and 2002). Both qualitative and quantitative data is important for all three aspects of vulnerability analysis. The qualitative data is particularly useful in analyzing the sources of risk, people’s perceptions of their vulnerability and its determinants, and traditional household strategies to reduce their vulnerability and manage risk. Quantitative household data is particularly useful to measure the impact of risk alongside other community and household characteristics that affect vulnerability.

15.2.2 Monitoring progress in rural poverty reduction

A sound rural poverty reduction strategy requires a well-conceived plan for monitoring progress toward achieving its objectives. Monitoring both tracks program implementation and measures program impact.

Chapter 3, “Monitoring and Evaluation,” discusses how to establish a poverty monitoring system, define key indicators, track them over time and see what changes have taken place. The key elements of a rural poverty monitoring system are reviewed below:

- A poverty monitoring system involves the selection of broad-based poverty reduction objectives. *Impact indicators* are used to monitor progress toward these goals; they monitor long-term changes in welfare in a multi-dimensional fashion and are not limited to income, consumption and social indicators (although in practice these are used more frequently).

Generally, poverty reduction strategies base their impact indicators on the Millennium Development Goals (MDGs), which are not disaggregated for rural and urban areas. Yet given the magnitude and severity of rural poverty, as well as the particular challenges of delivering services to rural areas, it is important to identify distinct impact targets for rural and urban areas. Otherwise, it could be easier for governments to meet their poverty targets by focusing on urban areas, where service delivery is less costly, and thereby exclude rural beneficiaries. Discrete impact targets underline the need for specific strategies to deliver social services and meet poverty reduction targets in rural areas.⁶

- Once the poverty reduction indicators and targets are established, a system of intermediate indicators is required to monitor progress toward achieving the poverty impact indicators. These intermediate goals include: (1) *output indicators*, to monitor program achievement (for example, vouchers for technical assistance provided or kilometers of roads rehabilitated); and (2) financial and physical *input indicators*. Intermediate indicators provide the opportunity to make adjustments in the execution and delivery of the overall strategy when monitoring reveals that impacts are weaker than expected.

The indicators are linked, in sequence, from input to output, from output to outcome, and in turn from outcome to impact. The input and output indicators link the budget allocation process to the rural poverty strategy through sectoral program goals. This approach helps to: (1) highlight the linkages between priority public actions and poverty reduction; (2) illustrate the combination of input, output and outcome indicators necessary to achieve a certain poverty target; and (3) reveal cross-sectoral linkages, as some program outcomes depend on the outcomes of other programs (for example, a land titling program that needs to be accompanied by greater access to rural financial institutions and technical assistance services in order to achieve the desired higher investment rates and farm income). Technical note L.1 to this chapter presents some impact and intermediate indicators for rural interventions. The table highlights specific subsectoral indicators and illustrates the linkages between specific interventions and rural poverty outcomes, as well as the linkages across interventions. The table is not meant to be exhaustive, and the proposed indicators will need to be adapted to specific country contexts.

Once the indicators are selected, a system is needed to collect and analyze the data, and provide results to decisionmakers on a timely basis. It is important that the monitoring information specify regional differences in impact and program implementation. A variety of agencies and stakeholders will be involved in collecting and analyzing information on the implementation and impact of rural interventions. The ministries of agriculture, health, education and infrastructure will provide information, as will rural stakeholders, on benefits received and their impact. It is important that the national entity responsible for poverty monitoring provides a comprehensive understanding of progress toward rural poverty reduction and that this information is in turn reported to government, civil society, donors and other actors involved in rural poverty reduction.

15.2.3 Tailoring participation for rural populations

As explored in chapter 7, “participation is the process through which stakeholders influence and share control over priority setting, policymaking, resource allocations and access to public goods and services.”⁷ Despite the rural sector’s importance to strategies for economic growth and poverty reduction, rural stakeholders often find their interests poorly represented in national policymaking processes, including in many PRSPs.

Challenges for rural participation

Rural areas are often characterized by deep poverty and economic inequities, physical remoteness, heterogeneity, weak organizational capacity and other constraints that make it difficult to fully participate in the PRSP process and the national development dialogue more broadly.

- 3 Although rural populations may be large, they often are dispersed and lack a communications infrastructure, making it difficult to form interest coalitions to shape or even follow national policy debates. Even in less remote rural regions, local and national political processes often provide few arenas for public involvement. Quite frequently in the *Voices of the Poor* study (Narayan and others 2000a and b), for instance, rural participants exclaimed that politicians made local appearances only during election campaigns and, once in office, rarely visited their communities or addressed policy concerns of importance to local people. “Why should a person ask for taverns and condoms in parliament? He should have been coming here to listen to people’s problems... Can we eat condoms?” asked a poor villager of Mbwadzulu, Malawi.⁸ Nor do villagers have many opportunities to interact with officials from external agencies.
- 3 The heterogeneity of rural societies also poses formidable obstacles to participation. In some regions, there are diverse ethnic, linguistic, religious, caste or cultural groups, which in turn underpin large differences in social, economic and political power. Understanding these power differences, and the forms of exclusion which leave some groups with much less voice and security than others, is vital to tailoring participation mechanisms to ensure the inclusion of oft-excluded groups.
- 3 The challenges and opportunities available to a poor rural woman are very different from those of either a poor rural man or a poor urban women. Very often it is a deviation from local norms for a woman to speak out in community affairs, much less exercise leadership and represent women’s particular needs and interests effectively (see chapter 10, “Gender”).
- 3 Despite and because of difficult local conditions, rural societies are often rich in associational life. It is to their local community groups, rotating credit clubs, cooperatives, producer groups and the like that poor people find bonds of dignity, respect, and material support in their every day lives and during times of crisis. Yet many of these networks are weak and oriented toward helping their members survive, rather than connecting them with other similar groups and actively seeking to forward their particular interests in political arenas or the marketplace.
- 3 At times, rigid hierarchies and deep-rooted patron-client relationships in rural societies leave poor people with very few channels for voicing their interests and create tremendous risks should they take stands that run counter to local political and economic elites.

Options for strengthening rural participation

Together these conditions raise important challenges to participation and call for special planning to ensure the meaningful representation of poor rural men and women in PRSP processes. Options for strengthening the participation of key rural actors in the PRSP process include:

- 3 Measures for capturing and communicating women’s perspectives in such a way that they can inform and influence policy processes.
- 3 Support of processes that help rural groups to form broader alliances as a means to getting diverse rural interests heard and acted upon. Investments in expert community facilitators often have been an effective means to help mobilize poor rural populations around shared problems/needs and strengthen local capacity to link with and receive external support or influence policy processes. These and other empowerment strategies seek to expand the assets and capabilities of poor men and women to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives.⁹

To date, most PRSP processes have focused on programming public consultations to inform the initial design of poverty strategies, typically at the regional level. Much more systematic efforts will be

needed for policymakers and the wider community engaged in PRSP processes to learn about and improve policies and programs that respond to the particular realities and needs of rural areas. The challenge to achieve effective rural participation in PRSP processes does not rest solely on developing channels through which poor and vulnerable groups may participate. Participation strategies must also build the capacity of the various public, private and civic institutions that interact with rural people. These groups need to be able to grasp local needs and realities, and to devise effective policy and institutional responses to what may often be quite context-specific realities and needs.

15.3 Priority Public Actions for Rural Space

This section reviews ten areas of priority public actions for rural development. They are organized around the six core assets groupings based on the sustainable livelihood framework (human, physical, natural, financial and knowledge assets and social capital) as well as the cross-cutting theme of risk management.

15.3.1 Human assets: improving rural health and education outcomes

Ill health and low educational attainment are important dimensions of rural poverty. Chapters 18-19 provide detailed accounts of diagnosing health and educational outcomes of the poor, devising strategies and policies to improve health and education, and prioritizing among alternatives. However, particular initiatives may be needed to build human assets in rural areas, as there are specific household, community, and institutional issues in rural areas that limit both the demand for and supply of social services. These special interventions include not only increasing the physical and financial accessibility of health and education services and inputs, as well as their overall quality and appropriateness for rural areas, but also complementary investments in drinking water, sanitation facilities, rural areas and housing.

This section complements chapters 18-19; it examines the particular set of constraints to improving health and education outcomes in rural areas and the various policy options available to help overcome these constraints.

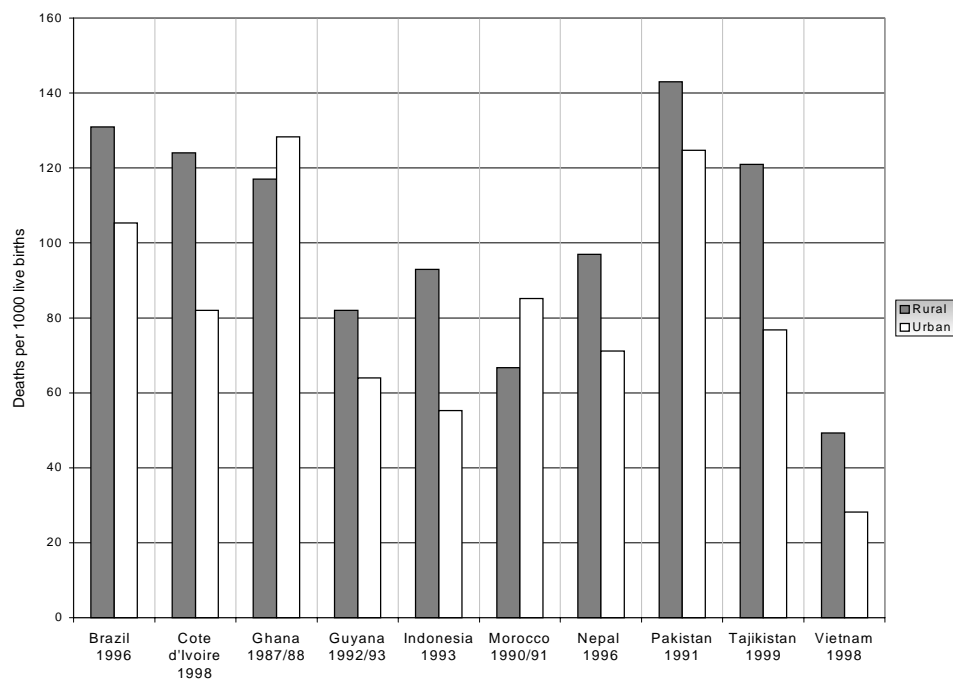
Rural health

Among the poor, health outcomes of rural residents may be considerably worse than those of urban populations. For example, in eight of ten countries studied, a rural child in a family with a dollar a day per capita expenditure has a higher chance of dying before its fifth birthday than an urban child with the same household expenditures (figure 15.1). Poor health outcomes may in part be explained by numerous household, community, environmental and institutional factors that aggravate health conditions in rural areas and limit both the demand for and supply of health services. These factors include household influences, community and environmental influences, and health system influences.

Household influences on health outcomes

The dependence of rural households on agriculture creates volatility in consumption and income levels and in the quality of consumption, which may affect health outcomes (particularly nutrition) and constrain the demand for health services.¹⁰ Housing conditions may also aggravate health outcomes in rural areas. Dirt floors contribute to long-term recurrent exposure to intestinal worms that penetrate feet, particularly in areas with poor sanitation, and poor ventilation increases the threat of indoor air pollution. Rural housing building materials may also provide breeding grounds for certain disease vectors.

Rural residents may have less access to health and nutritional knowledge, thereby restricting their ability to effectively evaluate health risks and/or adopt practices that promote good health and nutrition. In particular, the use of biomass fuels such as charcoal, twigs, leaves and dung for cooking, heating and lighting in rural households is a cause of indoor air pollution that increases the risk of respiratory illnesses. Moreover, exposure to pesticides contributes to the disease burden among rural households engaged in farming. Farmers and their families are susceptible to deleterious health outcomes from pesticide use,

Figure 15.1. Risk of a Poor Child Dying before Age Five in Urban and Rural Families

Source: Wagstaff and Alderman (2001).

especially when it is excessive, when farmers do not have adequate application equipment and protective gear, or when farmers are ignorant about the hazards of pesticide use and lack proper training (Listorti and Doumani 2001).

Community and environmental influences on health outcomes

The lack of adequate and safe water and poor sanitation facilities contributes to the threat of water borne and water related diseases in rural areas. Even physical accessibility of health services may be a challenge unique to remote rural areas in many countries. When roads exist, access may be limited at certain times of the year due to the poor condition of roads—for instance, during the rainy season when infectious diseases such as malaria are more prevalent.

Several vector related diseases, including malaria and schistosomiasis, predominate in rural environments. The presence of large bodies of surface water (irrigation canals, dams, rice paddies, and so forth) and poor water management provide ideal vector breeding conditions in rural areas. The proximity of rural households to agricultural fields and bodies of surface water increases their susceptibility to malaria. In Ethiopia, a recent study found that a sample of children under 10 years of age living within 3 kilometers of small dams experienced a sevenfold increase in malaria compared with children living outside mosquito flight ranges (Listorti and Doumani 2001).

Health system influences on health outcomes

Monetary costs associated with user fees and purchasing prescription drugs constrain the demand for health services among the rural poor. Similarly, the high transaction costs (mainly related to time) for accessing health services may depress demand, especially during peak agricultural seasons.

Even if health services are physically accessible they may be of low quality and, hence, may be underutilized. Rural facilities may have difficulty attracting staff and may often fail to have essential drugs available for patients. Problems may also arise because staff do not understand local languages or

dialects. The way in which health services are organized influences whether patients utilize the services. The lack of female health providers may suppress the demand for health services by rural households.

Inequities in government health budgets that favor urban residents or the wealthy may be responsible for the lack or poor quality of health services in rural areas. As governments decentralize, the way in which national resources are allocated affects health outcomes. The extent to which national resource allocations take account of the poverty and disease burden of different geographic areas will be a factor in determining whether decentralization arrangements lead to improved health outcomes among the rural poor.

Policies for rural health

Improving health outcomes of the rural poor requires interventions from within and beyond the health sector to, for example, improve housing conditions and access to potable water. Chapter 18 contains a broad discussion of options to improve health outcomes; the following section amplifies that discussion with a review of a few actions that may improve health and nutritional outcomes of the rural poor.

At the household, environmental and community level

- ⊃ Better ventilation, use of less-polluting sources of fuel for cooking such as butane gas, lighting and heating, and energy efficient cooking stoves could help reduce the threat of indoor air pollution.
- ⊃ Improved household access to adequate quantities of safe drinking water and proper sanitation facilities.
- ⊃ In the case of specific diseases such as malaria, controlling the breeding environment of vectors, minimizing contact with vectors (for example, promoting the use of insecticide-treated bed nets), enabling residents to obtain timely and effective care and treatment and the use of prophylaxis, where appropriate, can reduce the disease burden in rural areas.

Interventions to stimulate the demand for and supply of health services

- ⊃ Community nutrition projects such as Benin’s *Projet d’intervention locale pour la Securite Alimentaire (PILSA)*, Madagascar’s *Community Nutrition Project (SECALINE)* and the Senegal *Community Nutrition Project (SCNP)*—all of which utilize NGOs for community mobilization and service delivery—have been successful in improving the health and nutritional outcomes of rural women and children.¹¹
- ⊃ Rural safety net programs provide cash transfers to families (and to women in particular) in exchange for regular visits to health posts, as in the case of *PROGRESA* in Mexico—although experience reveals that such programs are costly and depend on the existence of health, education and road infrastructure (Cord 2001).
- ⊃ Construction of additional health posts and health centers in rural areas that provide preventive and basic curative services, outreach activities to remote areas, and collaboration with NGO and private partners to extend health services to rural areas may address problems associated with physical accessibility to health services.
- ⊃ Ensure that government funds are equitably distributed geographically—perhaps using regional per capita expenditure and poverty indicators to set local spending targets.
- ⊃ Provide hardship pay and other incentives to encourage trained health care providers, including doctors, nurses and midwives, to serve in rural areas.

Rural education

In many countries, education outcomes of rural residents, and particularly of the rural poor, continue to lag behind achievements in urban settings. In some countries, such as India, in addition to large gaps in educational attainment between urban and rural residents, there are gender differentials that are

particularly pronounced in rural areas, and particularly among the poor. In other countries, such as Colombia, rural residents may have less access to education but gender differences are less pronounced (figure 15.2).

Factors affecting rural education outcomes

As with health, in rural areas there are some unique demand and supply side factors that affect education outcomes.¹²

Factors contributing to low demand for education

Physical accessibility. Opportunities for continuing education beyond the primary level are limited, as many rural communities cannot operate secondary schools efficiently and require children to travel long distances (on sometimes seasonally impassible roads) for secondary schooling.

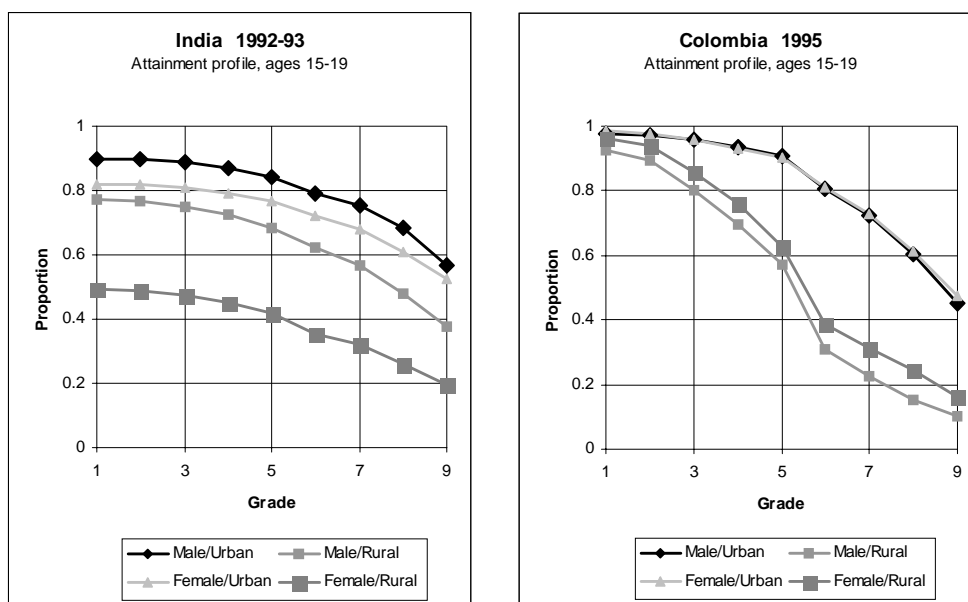
Affordability. The lack of resources to pay fees or purchase uniforms and books makes it difficult to send children to school. The volatility of rural incomes and the inability of poor households to smooth incomes may result in children being withdrawn from schools in the aftermath of an income shock. In some cases, parents are deterred from sending their children to school because of the high cost of attending school. This is especially the case when school calendars are rigid and not compatible with the agricultural cycle.

Quality. Low opinions of the value of education (which in part may reflect the few opportunities to exploit secondary education in rural areas) may deter parents from sending their children to school. The perceived value of rural education is also undermined by the fact that the curriculum may not be relevant to rural communities or that rural schools often lack adequate instructional materials. Furthermore, the use of non-local languages as the medium of instruction may affect learning abilities and parental incentives to send children to school.

Factors contributing to inadequate supply of education services

- ⊃ Low population density increases the cost per student of providing education services in rural areas.
- ⊃ In many rural areas it is difficult to attract qualified teachers, particularly female teachers.

Figure 15.2. Rural-Urban Differences in Educational Attainment by Gender



Source: <http://www.worldbank.org/research/projects/edattain/edattain.htm>

- ⊃ Poor rural infrastructure may make it difficult to get building materials, furniture, equipment, and textbooks to remote rural schools.
- ⊃ In many countries, while primary schools may be accessible to children, many of the schools may not have a complete range of grades required to complete primary school.
- ⊃ It is also common to find that public expenditures for primary and secondary education are biased toward urban areas.

Policy options for rural education

Depending on the factors identified as being the key constraints to improving educational outcomes, there are numerous policy instruments and strategies that can help address these challenges. Policy options that may be particularly relevant in improving rural educational outcomes may include:

Stimulating demand

- ⊃ Adopt a flexible calendar that is compatible with the agricultural cycle so that children are not withdrawn from schools when labor demands on the farm are high.
- ⊃ Eliminate fees for primary education.
- ⊃ Use local languages as the medium of instruction.
- ⊃ Provide special incentives for parents to send girls to school if cultural factors discourage girls' education. Improving sanitation facilities (toilets) in rural schools has proven to be important for encouraging girls' education.
- ⊃ Contract with NGOs or private providers to extend schooling to communities in very remote and inaccessible areas.
- ⊃ Promote distance learning.
- ⊃ Encourage community participation in schools and greater school autonomy.

Expanding supply

- ⊃ Use locally recruited teachers.
- ⊃ Strengthen support networks for teachers through the development of school clusters and in-service training.
- ⊃ Offer financial incentives to encourage teachers to serve in rural areas.
- ⊃ Promote the use of multi-grade schools to ease supply constraints.

15.3.2 Physical assets: rural infrastructure services for poor people and businesses

Physical assets for rural poverty reduction

Providing reliable and affordable access to rural infrastructure services dramatically increases rural people's access to markets and social services and is essential for rural growth and poverty reduction (Ahmed and Donovan 1992; World Bank 1994) (box 15.2). Key issues related to the provision of energy, transport, water and sanitation, and information and communication technology to rural people and businesses are discussed in chapters 20-24. This section focuses on three themes that cut across these infrastructure subsectors and are particularly relevant to the goal of universal access in the rural context. These themes are sustainability, replicability and poverty reduction.

- ⊃ *Sustainability—how to ensure assets and services will be operated and maintained.* Rural infrastructure services are very dispersed and have to be provided over a wide range of conditions. The requirement to link many services to higher level networks further complicates provision, particularly for roads. Because of the small number of beneficiaries often served, economic considerations dictate that rural infrastructure investments be designed to fairly

low standards. This, in turn, makes them fragile and maintenance intensive. If the skills and resources for their maintenance are not readily available, they will quickly break down. Given their geographical dispersion, innovative solutions relying on community-local government partnerships have to be found at the local level. At the community level, rural infrastructure may be financed by multiple social and community funds and non-governmental organizations and, on rare occasion, by the private sector (although there are often numerous obstacles to private sector provision given the high costs relative to the ability of rural households to pay). The many actors involved often means that there is no leader who champions rural infrastructure policy and resource issues at the national level.¹³ As a result, rural infrastructure services are often under-resourced and implemented in an unsustainable fashion, resulting in chronic underprovision.

- 3) **Replicability—how to ensure that institutional and financing arrangements can be scaled up for universal coverage.** Total costs of rural infrastructure service provision are high. While low cost technology may mean that the cost of an individual well or unit cost of road may be low, massive and widespread need implies huge investment requirements and may entail cost-sharing arrangements. The small size of individual rural infrastructure investments makes them easy candidates for pilot operations and programs targeting in a few communities. However, the institutional and financial models involved may be unsuitable for scaling up and thus largely irrelevant for universal coverage.

Box 15.2. Poverty Linkages of Rural Infrastructure Investments

Infrastructure services stimulate economic growth, contribute to building poor peoples' capabilities, and facilitate their connection to political processes, markets and social relations. In addition, infrastructure services can be a tool for improving governance, engendering participatory decisionmaking at the local level and reducing vulnerability to risk.

- 3) **Economic opportunity.** Provision of essential infrastructure increases both agricultural and non-farm opportunities in rural areas. Studies demonstrate that provision of reliable energy supply and serviceable roads not only increases agricultural productivity, reduces costs of inputs and outputs, and encourages greater use of efficiency-generating technologies (Barnes and Binswanger 1984; Binswanger and others 1987), but also supports the emergence of small businesses in rural areas (Binswanger, Khandker and Rosenzweig 1989; also see chapter 21, "Energy.") Likewise, transport and telecommunication services promote communication and information flow between communities and with urban centers, fixing information asymmetries and linking farmers to markets for goods and input supply as well as agricultural extension advice (Fan, Hazell and Throat 1999).
- 3) **Capabilities.** Equally critical, infrastructure services enhance opportunities by building human and natural assets. The most well known link is perhaps the impact of safe water and sanitation on improved health through reduced incidence of diarrhea-related sicknesses and death (Klees, Godinho, and Lawson-Doe 1999). Improved access to water and energy can also free up significant amounts of time from collection of water and firewood. Even improving road services has been found to strengthen human capabilities by promoting higher levels and quality of education.
- 3) **Social inclusion.** Infrastructure can play an important role in empowering people, linking isolated communities to the rest of the world and giving poor communities greater access and influence over political and local decisionmaking processes. Roads, telephones and Internet connections can directly improve communications and enhance poor people's access to information. Electrification also is critical for broadening access to electronic communication and radio. Indirectly, well-delivered, quality infrastructure is likely to attract better teachers and agriculture extension agents and stimulate agro-industrial development (Pouliquen 2000).
- 3) **Good governance.** Equally important is the opportunity created by well-crafted interventions in rural infrastructure to improve local governance through the establishment of transparent and accountable practices for priority setting, decisionmaking, implementation, operations and maintenance.
- 3) **Enhancing security and risk management.** The provision of quality essential infrastructure can substantially reduce the vulnerability of poor people by helping them to cope with disasters and shock. Good drainage, a well maintained network of roads, and telecommunications to assist with relief and food redistribution efforts go a long way toward alleviating problems of flooding, drought, famine and earthquakes. Good transport facilities are integral to stabilizing food price fluctuations and, through arbitrage, to ensuring that poor sellers receive fair prices. Because of their employment potential, infrastructure works programs can be important components of crisis mitigation packages during times of economic shock (see chapter 17, "Social Protection," and section below on risk).

- **Poverty reduction—how to ensure the right balance is struck between requirements for cost-sharing and reaching poor communities.** In rural settings, sustainability and replicability rely to a large degree on community capacity and autonomy, with regard to both implementation and financing. This means that policies that encourage sustainability and replicability will favor communities with better human and financial resources and could exclude the poor. On the one hand, subsidies to correct this imbalance can be costly and may frustrate local initiatives. Striking a balance which works to relieve regional and social disparities is difficult and the appropriate design depends a great deal on country circumstances.

Policy and investment options

These challenges can be overcome by clear and consistent policies and strategies, more effective and sustainable institutions, and sustainable financing arrangements. Policies and actions also need to explicitly take into account gender differences in service preferences, and recognize that rural areas span a significant spectrum from high income and high density areas to low income and low density areas. Climate, topography and farming systems will influence the range of technology and financing options available for infrastructure service provision.

Formulating clear and consistent rural infrastructure policies and strategies. Sound policies and strategies for each rural infrastructure sub-sector that are applied consistently country-wide are critical to ensure both national coverage (replicability) and increased sustainability. Although infrastructure services may be provided by a variety of actors—both government and non-government agents—effective and efficient delivery requires sector-specific and consistent “rules of the game” (for example, cost recovery policies, technical standards, and level of service guidelines). In addition to national sector policies, there is a strong case for examining the overall policy framework affecting all types of rural infrastructure service provision (for example, finance and governance arrangements, the enabling environment for private sector participation, availability of affordable credit, and national decentralization strategies).

Decentralizing institutional arrangements to tap the potential of local agencies and stakeholders. Accumulated experience has shown that monopolistic provision and production of rural infrastructure services by central government agencies may not work. The dispersed nature of most rural infrastructure services means accountable and decentralized arrangements involving local governments, communities, the private sector and central ministries are needed.

Various types of program designs are worth exploring: (1) service provision (and financing) by the public sector (central, regional, and local governments), with private sector service production; (2) service provision by community organizations, with private sector and/or community production and financing; (3) service provision by the private sector, with government regulation; and (4) private-public partnerships, including subsidy arrangements. Private sector management and financing of infrastructure services relieves overburdened and scarce public resources and administrative capacity, complements public sector programs and helps to ensure that services reach more communities. Examples include the use of minimum subsidy concessions for private provision of telecommunications services in rural Chile and the provision of electricity by small and medium sized entrepreneurs in rural towns in Cambodia. The roles of central government and private sector in service provision are discussed in box 15.3.

Local communities can be as susceptible as governments to corruption, incompetence or cronyism; likewise, without competition and transparency the involvement of the private sector is no guarantee of efficiency. Whether rural infrastructure is public or private, or whether it is managed at the community level, by the private sector, or at a more or less decentralized level of local government, the foremost consideration has to be accountability to poor users, which should not be taken for granted. Accountability has to be enforced through well designed mechanisms including (1) transparency in decision and project implementation and operation, (2) open competitive bidding, (3) aligned incentives for performance, (4) effective audits, (5) participation by all the subgroups of the beneficiary community, and

Box 15.3. Roles of Central Ministries and Private Sector in Rural Infrastructure Provision

The role of central sector ministries and agencies should be to support rural infrastructure development by (i) formulating policies and technical guidelines in a participatory fashion; (ii) providing critical public secondary rural infrastructure such as regional roads; and (iii) serving as a national level facilitator for donor-supported programs.

The involvement of the local private sector as a contractor financed by government or community funds is increasingly common. Involvement of the private sector in the direct provision of rural infrastructure services is less common. The relevance of private sector financing depends on the nature (public or private) of services provided, but there is considerable potential for involvement of private operators as most rural infrastructure services are rather ‘private’ in nature—with the possible exception of roads¹⁴ (Pouliquen 2001).

(6) wide dissemination of the achievements of individual communities (Pouliquen 2001) (refer also to chapter 8, “Governance”).

Developing innovative and replicable financing strategies. Sound financing arrangements are critical to the sustainability and broad-reaching impact of rural infrastructure investments. Given the wide range of rural infrastructure services and local conditions, there are no standard blueprints for financing; however, three broad principles should be consistently applied to program design.

- ⊃ First, *adequate cost recovery* is often the only effective way to deal with lack of public resources for maintenance and operation. Not surprisingly, the potential for cost recovery is also a critical prerequisite to attracting “profit seeking” private investors. While policies that rely on operating and maintenance cost subsidies are often well-meaning attempts to address poverty issues, experience—for example, from the water sector—shows they often end up doing poor consumers more harm than good, by forcing them to rely on alternatives that are far more expensive than paying the full cost of adequate service provision.
- ⊃ Second, *upfront contributions from beneficiary groups toward initial investment costs* should be used, bearing in mind the affordability constraints of the poorest. Community contributions can be an important component of the financing strategy; contributions to investment costs increases the likelihood that locally controlled investment decisions are made in a responsible way.
- ⊃ Third, *promoting private provision of services*. Allowing for adequate cost-recovery potential is the first step in opening this door and must be complemented by simple and fair regulatory mechanisms and effective financial intermediation channels to allow private agents to enter this market. Private provision can be promoted by ensuring (i) a conducive legal environment—including clearly assigned and enforceable property rights and a legal framework for contract management and means of recourse; (ii) an appropriate policy framework—for example, reviewing subsidies for infrastructure services capable of being financed by the private sector; and (iii) the removal of physical and financial obstacles to private sector development through improved access to both affordable credit and basic facilities. As in the case of cost recovery, however, the best intentions can often lead to the worse fiascos. Many seemingly pro-poor policies, such as compulsory service provision requirements or low interest rate ceilings, must be evaluated against the prospect that the private sector may keep out of the most deprived areas or that the commercial financing sources on which some private investors may depend will dry up as a result (Pouliquen 2001).

15.3.3 Natural assets: increasing access to land and tenure security for the rural poor

Public interventions can improve land markets and tenure security and promote a more equitable distribution of land. To the extent that poor rural households own less land than non-poor households, they experience fewer of the direct benefits of such interventions than their counterparts. This section examines the policy, legal and institutional constraints to improving land tenure security and access to land, particularly for the poor. It proposes three specific interventions to strengthen land tenure and access for the rural poor: (1) land regularization and titling, (2) land reform, and (3) strengthening local land management systems. However, while these specific interventions are important, it is more often the legal, policy and institutional frameworks affecting land issues that are the most important levers in promoting land tenure security and access for the rural poor. Also, land tenure security and access are

not enough to achieve rural poverty reduction. Access to markets, physical and social infrastructure, technical assistance and complementary investments are also required to maximize the returns from land ownership.

Land access and tenure security and rural poverty

A land policy that provides for equitable land ownership and secure tenure offers direct benefits for the poor, as well as indirect benefits via economic growth, improved resource management, and strengthened local governance.

Direct benefits for the poor

- ⊃ Access to land and secure tenure provide the poor with a source of livelihood, food security, and opportunities for labor intensive and other investments.¹⁵

Indirect benefits for the poor

- ⊃ ***Growth.*** The impact of land-related restrictions on economic growth can be very large.¹⁶ First, an equitable land distribution affects productive efficiency, since family-operated farms are generally more efficient than wage labor operated or collective production structures. Second, secure land tenure is essential to providing investment incentives, both at the household and the economy-wide level (including investments in related industries as well as foreign investments), which in turn raise the rate of growth in the broader rural economy. Third, the ability to use land as collateral for accessing credit can have far-reaching implications not only for households' ability to obtain credit and make indivisible investments but also for the emergence and functioning of rural credit and other factor markets.
- ⊃ ***Sustainability and improved resource management.*** Without well-defined and enforceable access rights, the natural resource base, and in particular common property resources, are easily threatened by encroachment and opportunistic behavior. Access to common property resources and common lands not only provides significant components of income for the poor¹⁷ but is also critical to reducing vulnerability in times of crisis (Cavendish 2000) and can be an inseparable part of indigenous people's identity.
- ⊃ ***Governance.*** Improved management of land assets can support decentralization and local government fiscal responsibility (via land taxation), make land management institutions more accountable, and can reduce conflict generated by unequal access to land.¹⁸ The ways in which demobilized soldiers and refugees can gain access to land, and the ways in which restitution claims and conflicts over land are resolved, will have an immediate impact on the stability of agreements to end such conflicts.

Constraints to equitable land distribution and secure tenure

Despite these important benefits, there are three broad constraints that prevent the emergence of more equitable land distribution and secure tenure. First, households and individuals may not be able to gain secure property rights to land, either because of shortcomings in the legal system and/or because the institutional framework to enforce such property rights is inadequate. To realize the benefits associated with land ownership, such ownership has to be clearly defined and enforceable at reasonable cost, although there is no need for such rights to be either completely transferable or individualized (box 15.4).

In addition, distorted or ill-functioning land markets may make it difficult for land to be allocated to its most productive use. Finally, there are a number of specific constraints that reduce the ability of the poor to access land and achieve secure tenure which need to be addressed.

Box 15.4. Group Ownership of Land

Condominium associations in industrial countries demonstrate that group ownership, if legally recognized and based on clear rules, can be efficient. This is relevant for rural areas where there is often group ownership of productive land, which is often cultivated individually (given the problems with monitoring in agricultural production). There are also many countries (for example, China, Vietnam, Georgia, and Mexico) where households can obtain use rights but not a fully transferable title. As long as rights are well defined and can be exchanged freely and at low cost, this does not create major disadvantages. However, such quasi-formal arrangements are unlikely to be the most suitable in situations where land can function as collateral for well-developed credit markets.

Secure property rights

Legal framework

There are several reasons why the legal framework may not allow for secure long-term property rights:

- ⊃ *Property rights are not well defined or exclude certain groups (for example, women).* For example, in the FSU, there are some countries with ambiguous property rights that have prevented households, individuals, or groups from achieving secure property rights.
- ⊃ *Actual users do not enjoy full legal recognition.* Even in cases in which private property rights are generally recognized, the rights of certain groups of land users—such as women, holders of customary rights,¹⁹ or holders of secondary land rights (in cases of multiple land users, such as herding)—may not be recognized. This has major implications for equity, the sustainability of resource use and productivity, especially when the excluded groups are important land users (for example, when women are the main cultivators).
- ⊃ *Co-existence of multiple and mutually inconsistent bodies of law.* In many countries, large areas of land may be subject to different and competing legislation. This creates uncertainty, conflicts, and opportunistic behavior (as landowners may appeal simultaneously to different authorities and bodies for conflict resolution).²⁰
- ⊃ *Inappropriate guidelines for land use planning.* Public regulation of land use is justified when externalities and public goods are involved. However, where unrealistically high and unenforceable standards are imposed, governments can put land out of the reach of the poor and, at the same time, open the door for bureaucratic abuse and corruption (Mabogunje 1992; Farvaque and McAuslan 1994), with negative impact on business start-ups and investment.

Institutional shortcomings

Institutional shortcomings can also limit the ability to enjoy and transfer property rights. When institutions are inaccessible, have unclear mandates, and are not able (or willing) to respond to demand, transaction costs for land exchanges rise. This is most detrimental for the poor who seek to get their property rights legalized. As a result, they often choose to retain informal land rights, with the negative consequences that are well elaborated in the literature. Institutional shortcomings can include:

- ⊃ *Multiple institutions with overlapping and ill-defined mandates.* When different types of land (for example, protected areas, agricultural land, and urban settlements) are managed by different agencies, the validity of land titles can be questioned, thus undermining confidence in the whole system. A frequent case is that competing agencies issue title to the same piece of land (for example, land reform agencies parceling out protected lands), which has led to serious problems, for example, in Bolivia.
- ⊃ *Integration between cadastre and registry.* Lack of integration between the two systems greatly increases the costs of implementing land transactions and of obtaining clear information about ownership status.
- ⊃ *Legal basis and administrative capacity for conflict resolution.* While the first priority is to have legislation in place that prevents new conflicts, many countries have a backlog of conflicts that can take years to clear.²¹ The inability to resolve conflicts quickly may limit private investment. Also, if

the transaction costs of getting conflicts resolved through official channels are high (or if laws are not well disseminated), it is normally the poor who suffer the most.

- 3) ***Inefficiency, lack of accessibility and technical capacity.*** In addition to constraints imposed by the broader institutional framework, land administration institutions in many developing countries also suffer from shortcomings in technical capacity and a highly centralized structure. These inefficiencies increase operating costs and undermine both performance incentives and customer orientation, particularly vis-à-vis their poorer and less powerful clients.

Distorted and malfunctioning land markets

Markets are of critical importance to facilitating the efficient use of resources, including land, within an economy. Key policy issues that prevent the free and efficient operation of land markets and increase transaction costs include:

- 3) ***Macroeconomic distortions.*** Historically, tax breaks and subsidies that implicitly or explicitly targeted large land owners, as well as speculation in expectation of major urban land booms, increased land prices beyond the productive value. This put land out of reach of the poor and led to land concentration. The adoption of adjustment policies and fiscal tightening in many countries, diminished, but did not eliminate, the importance of these issues.
- 3) ***High transaction costs.*** In addition to action by public institutions, obtaining land title and effecting land transactions normally require the services of private professionals (for example, notaries and surveyors). In many countries, entry barriers into these professions allow these groups to establish quasi-monopolies, to restrict supply, and thus to charge steep premiums.²² Regulatory oversight in this area could, by creating the preconditions for better functioning of land markets, have a large impact.
- 3) ***Restrictions on land rental.*** Restrictions on land rental that were often adopted as a means of improving tenants' welfare and eliminating "feudal" production relations have generally had the effect of leading land owners to evict tenants and resort to cultivation by wage labor (or returning land to grazing). As a result, even in countries with high pressure on land, there is much productive land that lies relatively idle because of administrative restrictions.
- 3) ***Restrictions on land sales markets.*** Land ownership ceilings or restrictions on land sales, even if popular, may lead to negative effects on land supply, have a high cost of enforcement and actively encourage corruption, thus further driving up land prices and restricting access to land (Deininger and Binswanger 1999). Equally important, as land can no longer be used as collateral, such restrictions severely undermine investment incentives in rural areas. Fiscal instruments, such as a flat land tax, are at least as effective in discouraging speculation, has lower enforcement costs, and can have positive impacts on local government structures.

Additional factors limiting land access by the poor

Historical distortion and biased policies. Colonial domination in most developing countries has generally been associated with economic and non-economic restrictions on land access and land use, the impact of which is still clearly visible in many countries (for example, South Africa, India, Brazil). Justifying such measures by the need to attract foreign investment, many countries continue to grant concessions. However, giving more secure and transferable land rights to local communities could help promote both investment and equitable land access.²³

Land reform regulation. Often land reforms intended to increase land access by the poor has ended up restricting such access. Maximum holding sizes and rental restrictions undermine land access by the poor through rental and sales markets. In many countries, "second generation" issues have arisen because beneficiaries' ability to transfer the land received under land reform programs was highly restricted. This is of particular relevance when, as a result of successful land reform, beneficiaries' children tend to move out of agriculture, possibly giving rise to a new class of "absentee landlords."

Illiquid financial and land markets. In many countries, long-term credit markets that could provide financing for land acquisition do not exist, which excludes from the land market even those who would be able and willing to finance land acquisition by themselves. Also, lack of market information on land sales and prices further impedes the functioning of land markets.

Policy options

In addition to addressing the legal, policy and institutional issues discussed above, the main options to promote land tenure security and land access are: systematic land regularization and titling programs, land reform programs, and improved land management regimes that rely on local practices.

Land regularization

Systematic land regularization can have a big impact on land values and investments that target the poor (Deininger and Chamorro 2001). Dealing with land regularization involves: (1) legal and institutional reform, (2) public information campaigns on land rights, (3) improved mechanisms for conflict resolution often by relying on out-of court administrative approaches, (4) recording of land rights, and (5) the modernization of the institutional infrastructure to access up-to-date registry information. While such projects were originally considered to be merely technical in nature, it is now recognized that economic and social factors have to be taken into account as well. For example, the specific mechanisms to provide greater security of tenure should be socially recognized, and acceptable and affordable from a fiscal point of view. Administrative requirements and costs for long-term maintenance of the system need to be known, and not impose undue burdens on the poor, or such high fees as to undermine incentives for subsequent registration.

Land reform

Where significant underutilization of land exists side by side with landlessness and destitution (or tenants who are unable to gain land ownership rights), a targeted program of land transfer may be needed. One option is a “negotiated” reform where a fungible grant is provided directly to beneficiaries rather than being channeled through government agencies. A number of conditions should be met by land transfer programs:

- ⊃ In addition to the land, beneficiaries require training and capacity building, as well as provisions for complementary investments to make the land productive. (For examples of complementary programs with land reform see Deininger and others 2001 on the Philippines and Buainain 1999 on Brazil.)
- ⊃ Explicit or implicit grants²⁴ should explicitly target the poor.
- ⊃ The rights given to beneficiaries have to be secure and unconditional.²⁵ To allow access to credit and possible movement of beneficiaries’ children out of agriculture, rental or sale of the land should be allowed, at least after some initial period.
- ⊃ The rule of law, and in particular existing property rights that have been acquired in good faith, need to be respected; expropriation without compensation would not only have deleterious effects on the economy as a whole, but also have the potential of generating a wave of subsequent restitution claims.
- ⊃ The implementation of the land reform will need to involve beneficiaries as well as government and NGOs at the local level with a strong element of participation, rather than a top-down and centralized approach.

Strengthening local land management

Current approaches to improve the management of common and/or scarce land resources aim to explicitly recognize the multiplicity of uses and users and to record a multiplicity of existing rights. Rather than impose western-style paradigms, they draw upon the following principles:

- ⊃ Mechanisms are needed to foster collective action within an appropriate incentive structure and in a way that is sustainable in the long term. To establish these, local institutions need to be representative and transparent rather than merely reinforce privileged access by local elites.
- ⊃ Overlapping rights need to be acknowledged explicitly and in a way that provides a means for exercising them. The management of multiple land rights can be facilitated through improved management of the natural resource base.
- ⊃ Wherever possible, institutions for conflict prevention and resolution that build on traditional arrangements need to be in place. Ideally these will be able to perform new functions (for example, improving management) and prevent rather than just resolve conflict.

15.3.4 Natural assets: irrigation development and poverty reduction

A dominant focus of rural development strategies for the past several decades has been development of irrigation and drainage infrastructure to expand the area of productive irrigated agriculture. Irrigation and drainage development are widely credited, along with new crop varieties and increased use of inorganic fertilizers, in the success of the Green Revolution. Irrigation continues to provide the basis for agriculturally-based rural development. This section explores how benefits from investments in irrigation and drainage might be tilted more toward the poor without compromising the critically important contributions of this sector to regional and national economic growth. The main question addressed is: how can irrigation and drainage development do *more* for the poor?

Benefits of irrigation and drainage for poverty reduction

The higher productivity of irrigated agriculture and the stretching of the agricultural season permitted by irrigation offer important direct and indirect benefits for farmers and, more broadly, rural residents.

Direct benefits

- ⊃ Farmers with at least some irrigated land benefit directly from irrigation water through higher productivity and a longer, more flexible cropping season that allows new and higher value crops to be grown.
- ⊃ Many farmers also benefit from improved drainage with irrigation investment; this is particularly important to small farmers, who often are the most sensitive to waterlogging and salinity because even marginal loss of productivity could have serious impact on their household income and property value.
- ⊃ All rural residents, both poor and non-poor, can benefit from domestic utilization of irrigation water as well as improved water quality through adequate drainage.
- ⊃ Livestock producers are also often able to benefit from irrigation infrastructure to water their animals.

Indirect benefits

- ⊃ Irrigation provides increased employment opportunities during a longer agricultural season and at higher wage rates.
- ⊃ There is a greater security of employment and income (protection from drought) with irrigation.
- ⊃ Irrigation can generate expanded employment options in agricultural services linked to the more productive irrigated economy.

- ⊃ Irrigation leads to improved control of water-borne diseases (for example, malaria and bilharzia) in well drained land.
- ⊃ There is improved sanitation with irrigation, especially in those rural areas without public sewerage services.

While public irrigation development provides critical benefits to the poor, it provides proportionately greater benefits, particularly direct benefits, to larger land owners where water is provided according to land area. Moreover, wealthier farmers benefit from irrigation not only in terms of higher land value and production potential, but also because they have better access to information (for example, market prices and weather predictions), which allows them to take better advantage of the new agricultural opportunities.

The poor face particularly difficult barriers in accessing the direct benefits of irrigation development for three main reasons:

- ⊃ they have little or no land, or their land is in remote areas far from water sources and/or primary irrigation networks;
- ⊃ even when they have land, the poor are often without irrigation, as they tend to have less political influence and are often excluded from participation in water resource allocation decisions; and
- ⊃ the poor tend to have less access to the range of complementary development resources (for example, credit, education, and extension) necessary to maximize the return on their irrigation investments.

Policy options

The policy options laid out below focus on increasing the access of the rural poor to the benefits of irrigation, beyond improving their access to land and to technical assistance, microfinance, and other complementary services. Increased access to irrigation by the poor can be seen promoted through two broad approaches: the first aims to improve the overall efficiency, transparency and pro-poor focus of irrigation policy and investments; the second focuses on the implementation of interventions with the explicit target of improving the access of the poor to irrigation.

Overall improvements to the irrigation and drainage sector

Increasing the overall efficiency of irrigation systems, creating transparent mechanisms for allocating water, and acknowledging the variety of different uses of irrigation water—particularly those uses (aquaculture, livestock, domestic needs) relevant to the poor—are established objectives. There are three entry points for affecting the overall quality of irrigation and drainage services: the policy environment, infrastructure investments, and management/capacity interventions.

Policy environment

- ⊃ Pricing and incentive policies that promote efficient use of water and protect the poor (for example, by using block tariffs to protect base water consumption and higher charges for larger water consumers) (see technical note L.2 and box 15.5).
- ⊃ Participatory management approaches involving water users in decisionmaking, as well as outright transfer of management and/or ownership of the irrigation system to the users (see technical note L.2).
- ⊃ Water markets with an established legal and institutional framework (see below) that can protect the poor and small producers, and with options that allow small buyers to transact as a group (strengthening their cooperative negotiation power) (see technical note L.2 and Thobani 1997).

Box 15.5. Water Supply Subsidies for the Urban Poor in Santiago

In the case of Metropolitan Water Supply and Sanitation Companies of Santiago (EMOS) in Santiago, Chile, a system of direct subsidies for water is managed by the central government. A budgeted amount of subsidies is allocated among regions and municipalities each year to needy families, according to predetermined social and economic criteria. The subsidy applies to fixed and variable charges of water supply and sewerage services accounts for the first 20 m³ of monthly consumption and varies between 25 percent and 85 percent of the bill. The municipalities use the allocated budget to pay the water utility directly. In Santiago, an additional help to the poorest families is provided by EMOS, the water and sewerage agency, in the form of a special loan for water connections (Rivera 1996).

- A regulatory framework that protects the interests of the poor and stimulates investment (for example, via policies for setting and enforcing water service fees, procedures and oversight of sales and purchases in water markets, auditing water user associations, and environmental monitoring and enforcement of groundwater, salinity and pollution requirements).

Improving infrastructure

- Rehabilitating and modernizing irrigation and drainage infrastructure to improve system performance.
- Providing adequate drainage for irrigated lands in which drainage implementation was deferred and productivity is declining due to water logging and salinization (for example, in Punjab, Haryana and Rajasthan); as well as in tropical and sub-tropical areas frequently devastated by recurring cyclones and heavy rains (for example, the case of the rural poor of Orissa in India).
- Giving greater attention to water quality management in irrigation and drainage and particularly with the disposal of drainage water and its environmental impact.

Improving water management

- Providing management training and agency re-orientation to improve service provision.
- Integrating domestic and industrial utilization of irrigation water into investment planning and design.
- Providing organizational assistance to establish water user associations or other types of producer organizations such as marketing cooperatives, and then providing follow-up technical and administrative support to the new organizations (this is of benefit to all farmers, but needs to be done in a deliberate way that gives particular access and voice to the poor and to women).

Targeted approaches to reaching the poor through irrigation and drainage investments

Targeted approaches are needed to enhance the poverty impact of irrigation and drainage development and to counteract tendencies toward elite capture of irrigation benefits as well as the gender bias that often exists in irrigation programs. These interventions focus on strengthening the capacity of the poor to participate in water management decisions, promoting appropriate low-cost technologies for irrigation, targeting irrigation investments in poorer rain-fed areas, and redistributing water rights. The importance of incorporating women's interests into project planning and design cannot be overestimated, in light of their economic contribution to the sector and their role in domestic water use. The targeted approaches to reaching the poor include improving the policy framework, promoting pro-poor technologies, developing new irrigation for the poor, and pro-poor management of water resources.

Characteristics of these approaches include:

Pro-poor policies

- Redistributing water rights where the poor could use water productively—for example, the introduction of a water redistribution system whereby those controlling the rights are paid compensa-

tion by the government, and the rights are then transferred to selected poor (for example, water reforms in South Africa following the era of apartheid) (see Van Koppen 1998).

- ⊃ Allocating new water rights to the poor when new surface or groundwater resources are developed, either through a direct rights assignment (as in Sukhomajri, India, where water from a new reservoir was allocated on a household basis regardless of land holdings), or through land distribution (as in irrigated land settlements in Sri Lanka, where land allotments are earmarked for poor farmers).
- ⊃ Including the adequacy and quality of domestic water availability as an explicit objective of irrigation and drainage infrastructure.
- ⊃ Incorporating new benefits earmarked for the poor and women (for example, aquaculture, home gardens, grazing rights, access to resources on common or public lands) as components of irrigation and drainage programs.

Pro-poor technologies

- ⊃ Promoting technologies that are affordable for the poor (for example, very small pumps, low-cost drip, water harvesting) and can be used on very small fields or for improved productivity of household gardens; minimizing the scale of displacement and resettlement through smaller infrastructure (for example, dams, canals) (box 15. 6) (Shah and others 2000).

Developing new irrigation

- ⊃ Options for developing new irrigation (including supplemental irrigation) in rain-fed areas with concentrations of poor people who have some land include entirely new systems that tap currently under-utilized water sources, especially groundwater (see box 15.6); expanding existing systems to cover new areas; and supplementary techniques such as rainwater harvesting, recharging, or soil conservation and land treatment.

Pro-poor management

- ⊃ Involving the poor and women in management entities (for example, water user associations, management boards) that make water use and new investment decisions.
- ⊃ Organizing self-help groups of poor farmers, women, and the landless around asset-generation related to the irrigation and drainage investments, for example, agro-forestry groups that use irrigation water, microeconomic-credit or marketing cooperatives.
- ⊃ Providing training, capacity building, and extension services aimed at poor and female farmers.
- ⊃ Addressing gender issues in project planning, design, and implementation through participatory processes that involve women.

15.3.5 Financial assets: rural microfinance – when is it appropriate and what are the options?

This section reviews various microfinance products and institutions and their suitability for rural clients.²⁶ The main message is that microfinance initiatives are most effective when targeted to the current level of rural economic development and that microcredit is not a uniformly viable option for poverty reduction. Outreach and sustainability are key. For microcredit to be successful, certain basic conditions should be in place; when these conditions are not present, savings and grants initiatives may be more appropriate, along with investments in basic skills, social capital, and economic infrastructure. Investments in human and physical assets may complement rural microfinance initiatives and, in those cases where microcredit is not yet appropriate, such investments can help accelerate access to credit services.

Box 15.6. Accessing Groundwater for the Poor

Groundwater is an important source of irrigation in rural areas. In countries where private access is not prohibited by law, it presents an opportunity to rectify the biases against access by the poor to irrigation benefits (Kahnert and Levine 1993). However, the ability of the poor to get credit for purchasing new technologies is limited compared with that of wealthier farmers. For example, low energy prices in many countries allow wealthier farmers who already own pumps to increase capacity, sell water in unofficial water markets and consequently deplete the water table—preventing small farmers from using their simpler equipment to access groundwater.

The emergence of low-cost technologies like treadle pumps and gravitational drip irrigation provides a new frontier for poor farmers without risking the environment. The treadle pump is a two-cylinder suction pump operated by two pedals so that users can lift water up to about 7 meters. Treadle pumps have shown remarkable spread among the poor in Bangladesh and increased their income substantially. In Bangladesh, the pump itself is sold for just \$9. The sink soil cost in Bangladesh is five cents per foot. The market rate for the whole system, therefore, can be as low as \$35. So far, 1.3 million treadle pumps have been sold in Bangladesh at farmers' investment of \$40 million in total in twenty years. The net income earned from these investments adds up to \$650 million according to a study conducted by the International Water Management Institute (IWMI). Donors and NGOs have contributed to this process primarily in promotional activities of the technology.

In addition to technology to access groundwater, the design of an institutional framework (for example, watershed committees, groundwater districts) that secures the equitable and sustainable use of the aquifer is also important to ensure that the poor benefit from this resource.

Sources: Shah and others (2000); Kay and Brabben (2000).

Microfinance and poverty reduction – the financial systems approach

Microfinance, whose advantages are well known, is particularly attractive as a tool to help the poor since it is widely seen as improving livelihoods, reducing vulnerability, and fostering social as well as economic empowerment:

- Farm and off-farm entrepreneurs need timely access to appropriately designed credit products to take advantage of market and investment opportunities.
- Households need access to safe savings and credit facilities to manage risk and smooth consumption.
- Access to loan, deposit, and payment services can substantially accelerate the adoption of modern technologies and production patterns leading to overall rural economic growth, which benefits both the poor and non-poor.

In most developing countries, however, the development of a well-functioning rural microfinance market must overcome important challenges created by conditions in the rural economy which increase the costs and raises the risks of providing financial services. The key constraints to rural financial market development are:

- a dispersed population and a limited physical infrastructure, which raises the transactions costs of providing and obtaining rural financial services (for example, travel and loan monitoring costs);
- a high risk environment leading to significant and often covariate income fluctuations, which reflect strong seasonality, the impact of climatic forces on rain-fed agriculture (yield risk), and international and domestic price risk;
- a lack of collateral on the part of asset-poor rural households (for example, land, livestock, or vehicles), a problem further complicated when existing collateral is not recognized by the institutional framework (for example, inadequate land titles or legislation that does not allow for movable assets to be treated as collateral), or there is a weak institutional framework that does not fully enforce existing collateral regulations; and
- a history of unsuitable policy initiatives to address these constraints (see below).

To overcome these challenges, rural development efforts through the 1980s mainly relied on supply-led government interventions in the form of targeted credit through state-owned agricultural development banks (or farmer cooperatives, in some cases). These agencies would generally receive government subsidies and would on-lend their funds to clients (often well-connected, large farmers) at below-market

interest rates. Thus, the emphasis was on disbursing agricultural credit, and the development of sustainable financial institutions and markets was neglected.

Recognizing the lack of sustainability behind this approach, a few institutions took the initiative to raise interest rates, bring down costs and innovate in ways that greatly reduced donor dependence and increased the scale of their operations. Drawing on the experience of these institutions, the “Financial Systems Approach” emerged in the early 1990s. This new approach has a more pro-poor focus, and emphasizes three core themes:

- creating a favorable policy environment, including not only macroeconomic stability but also reductions in historical biases against the rural sector;
- building the capacity of rural microfinance institutions (RMFIs) to deliver adequate, appropriately designed credit, savings and insurance services in a self-sustaining manner; and
- strengthening the legal and regulatory framework for rural finance, including reforms in the titling and registration of land, creation of registries under secured transaction laws, moveable property reforms to enhance their value as collateral, the elimination of usury laws (for example, interest rate caps), and licensing of specialized microfinance institutions.

While this paradigm emphasizes increasing the access of traditionally underserved clients to financial services, it suggests that microcredit is not uniformly appropriate for the rural poor. For microcredit to be appropriate, a minimum level of ongoing economic activity, social and economic infrastructure and overall stability are required. In their absence, clients may not be able to benefit from credit and will simply be pushed into debt that they cannot handle. Hence, other instruments are needed to complement microcredit in raising the assets and income-earning potential of the rural poor.

Policy options

When is microcredit appropriate?

Microcredit is most likely to be appropriate when the following three broad conditions are in place:

- ***Client capacity to manage debt.***
 - For the chronically destitute, credit is unlikely to succeed unless it follows efforts to reduce vulnerability and build skills, confidence, and a minimal financial base.
 - Illness that keeps people from productive activities is a major cause of debt arrears. HIV/AIDS poses a particular challenge for risk management when some of the poor may become *less able* to benefit from credit while others have increased need to enter business to offset lost household income.
- ***A preexisting level of basic social and economic infrastructure and economic activity.***
 - Severely disadvantaged or remote rural areas lacking infrastructure, services and/or access to markets may not be able to support the minimum level of economic activity needed to provide a positive return on a microenterprise investment. Also, in these remote areas, the costs of providing microcredit may be prohibitive for all but the most informal delivery mechanisms.
 - In an immediate post-emergency environment, economic activity may not be sufficiently viable or stable (at least in the short-run) due to the disruption of basic services, infrastructure, purchasing power and confidence in the economy.
- ***A preexisting level of economic, social, institutional and political stability.***
 - If non-collateral credit methodologies are to be used, sufficient social capital or societal cohesion is needed.
 - A legal/regulatory environment for monitoring and enforcement should be in place that does not constitute a significant barrier to either microenterprise activities or microcredit delivery.

- Also required is a target population that does not face an overly high level of risk, either due to dependence on a single economic activity (such as a single agricultural crop) or a high likelihood of future crises such as civil violence, natural disasters or hyperinflation.

Who should provide microcredit?

If the conditions for providing microcredit are in place, ideally it should be introduced by a strong specialized microfinance institution, local microcredit NGO, or a bank or non-bank financial institution that is committed to poor clients. If these are not present, an international microfinance organization may be able to develop a local microfinance partner, or existing savings and credit associations or groups may hold potential. More important than institutional form is a clear and demonstrated commitment to the two basic tenets of high-quality microfinance—outreach and sustainability:

- **Outreach**—providing services to large numbers of clients (breadth) and reaching poorer clients (depth);
- **Sustainability**—covering all costs, and therefore having the capacity to be sustainable and independent of subsidies in the longer term.

In order to satisfy these two tenets and benefit the maximum number of the poor on a sustainable basis, institutional and client discipline is needed, as outlined in box 15.7.²⁷

Institutions with goals other than financial intermediation to the poor, such as humanitarian or development NGOs, are unlikely to make the hard choices necessary to ensure client and institutional discipline. While grant-making bodies may have the operational infrastructure for disbursing money, they are not appropriate mechanisms for achieving the institutional and client discipline necessary for successful microcredit. Seasoned observers estimate that for every 20 nonfinancial service organizations that consider microfinance as a new service, only one may actually be able or willing to pay the high price of implementing the operating principles required for sustainability. If there is really no alternative, then institutions should strictly separate non-financial and financial services at every operational level (client, systems, accounting, and management).²⁸

The Financial Systems Approach suggests that the priorities should be to remove legal barriers to rural financial intermediation and build the institutional capacity of RMFIs. The desire to achieve rapid impact on rural poverty can lead to unsustainable credit lines being pumped through inappropriate institutional structures, distorting the rural financial market rather than supporting its development. Attempts to channel financial services through development banks or non-financial institutions have been shown to be costly, often politicized, and largely unsuccessful in creating viable long-term

Box 15.7. Principles for Successful Microcredit

Successful microcredit that is sustainable rests on two basic principles: institutional discipline and client discipline. If client or institutional discipline is seen as too confining or impossible to implement in a given setting, an institution's attempt at microcredit is likely to fail. *Client discipline* means that poor people take responsibility for their decisions, agreeing to and making on-time payment of their principal and an amount of interest that will cover the full cost of the service. Microfinance institutions that demand such discipline from their clients are empowering, whereas those that treat them as "beneficiaries" are more likely to foster a culture of entitlement and dependency.

Institutional discipline refers to a set of practices that lead to sustainability of the program, quality of service, and efficiency of operations, including:

- 1) charging interest rates that cover *all* costs, even when adjustments are made for donations and subsidies to reflect a market rate cost of funds;
- 2) requiring full, on-time repayment from clients, and tracking repayments in a regular and frequent manner;
- 3) creating products and delivery techniques that are appropriate for clients;
- 4) investing in management information systems that provide timely and appropriate guidance to staff and management;
- 5) providing field staff with performance incentives;
- 6) introducing sufficient decentralization to permit agility and eventual scale-up;
- 7) planning from the start for capacity, growth, and sustainability; and
- 8) good governance and management.

microfinance providers with significant outreach. Indeed, there is a high risk of undermining the more sustainable longer-term solutions.

Similarly, establishment of “revolving funds” have not proven to be effective in establishing sustainable financial mechanisms that survive long beyond the end of donor funding. Especially when disbursed through government programs or social funds with a grant orientation, they rarely succeed in introducing microfinance instruments that achieve high repayment and sustainability, and they tend to displace rather than build local savings mobilization.

Worldwide experience demonstrates that strategic development of a sound rural microfinance industry can effectively reach large numbers of the poor and improve their livelihoods. Financial and capacity-building support to RMFIs should be delivered in a performance-oriented way that fosters quality financial services and the movement to scale and financial self-sufficiency. Funding should be linked to clearly defined performance indicators that can be easily monitored (see chapter 3, “Monitoring and Evaluation”). Government should also place priority on developing local expertise, leadership and coordination of different programs and donors

When would savings be more beneficial?

Evidence is mounting that the poor have strong incentives and ability to save—often in preference to credit/debt—but generally lack convenient financial instruments to do so. Hence, the provision of voluntary savings services may be an effective response to some of the situations identified earlier as unsuitable for microcredit, or in which limiting factors constrain the potential of microcredit. No matter how poor, families almost always have the ability and the desire to save, whether in cash or in-kind; cattle and jewelry are common non-cash saving mechanisms. Poor households save to manage risk and plan cash flow for future investments.²⁹ They reduce their vulnerability by saving to cushion against shocks such as natural disasters, crop failures, job loss, illness and death. They “smooth consumption” by saving enough to support themselves during seasons when their income is lower, and accumulate sums large enough for family and business investments. Savings institutions, such as rotating savings and credit associations (ROSCAs) also help to build social capital in the community.

Savings facilities will help household risk management the most when they are safe and accessible to the depositors, and when the poor can deposit small amounts on a frequent basis. To allow full access to deposits, the financial institution must be well managed and have sufficient reserves to respond to periods of unusually high demand caused by natural or economic crises.

Unfortunately, most poor communities still lack access to safe, accessible, liquid savings mechanisms. One option is to provide regulated financial institutions with technical assistance to expand their deposit products so that they include savings facilities more suited to the rural poor. Another option is supporting NGO and informal microcredit institutions to work more closely with regulated institutions to provide savings services. Such RMFIs can play a critical role by brokering savings arrangements between poor clients and well-performing regulated financial institutions (including credit unions). Where the legal option exists, unregulated RMFIs can also be assisted in transition to a regulated legal form. For example, many savings and credit associations are informal financial institutions, but may have the option of registering as formal financial entities in the form of credit unions or savings and credit cooperatives.

When should grants be considered?

Where the objective is to provide a financial safety net to poor households, microeconomic grants may be an effective instrument. Grants can be the first step in reducing vulnerability and can allow the hardcore poor to invest time and resources in learning skills and building an asset base, both of which are necessary to improve their income-generating potential. The difficult issue is to distinguish between: (1) grants used as a stepping-stone out of poverty, to build human capital or community assets that can serve as the basis for higher income and credit worthiness in the future (for people who are unable to bear a

Box 15.8. Income Generation for Vulnerable Groups Development

BRAC's Income Generation for Vulnerable Groups Development (IGVGD) Program provides a model for this graduation process. Targeted towards destitute rural Bangladeshi women, the program assists participants to move from absolute poverty to economic independence. Over 10 years, nearly a million participants have made that transition. The graduation process starts with grants for food and progresses through training to savings to self-employment. This appears to be sufficient to break down the barriers of extreme poverty, social isolation, lack of productive skills, and poor self-confidence that previously kept this population from self-employment.

debt burden in their current circumstances); and (2) grants as a long-term safety-net resource transfer for the truly destitute (chronic poor, HIV/AIDS victims, and so forth). In the latter case, the grant is generally used to meet basic consumption or health needs. For more information on safety net programs for the rural chronic poor see chapter 17, "Social Protection," and the section below on rural risk management.

Grant programs that can be used as a stepping-stone out of poverty include:

- *Grants that support community development efforts* and finance basic infrastructure, social intermediation, and non-financial services, such as information and extension via social development or rural investment funds and community-driven development programs (chapter 9, "Community-Driven Development"). These are particularly appropriate when remoteness and poverty in targeted communities create high transaction costs, risks and low debt capacity, which impede delivery of sustainable financial services. Grants to communities can also include resources for income-generating activities. In these cases the beneficiary contribution is often greater than for activities that support community-based public goods.
- *Grants that provide a useful first step to support individuals* with food and skills training to allow them to strengthen their income-generating activities and build up a sufficient level of savings and economic activity to qualify for microcredit. A key issue when providing grants to individuals is ensuring that the beneficiaries graduate from the program and do not view the grants as a permanent income supplement. Most graduation efforts would be implemented through inter-institutional or inter-program partnerships, with each partner focusing on areas of comparative advantage. A grant program described in box 15.8 for vulnerable groups in Bangladesh demonstrates that successful program graduation takes time, which may limit the potential for short-term project initiatives in grant programs.
- *Also, those hit by crisis may need a temporary safety net.* Displaced persons during or immediately following a conflict, or those affected by natural disasters such as earthquakes and floods, may be suitable candidates for one-off, targeted "safety net" grants that enable them to rebuild their livelihoods and replace lost assets. In these cases, coordination with an existing microfinance institution is the best way to facilitate longer-term access to financing. Some microfinance institutions may be strong and flexible enough to provide a similar service to their clients on a commercial basis. The Bangladeshi microfinance institution 'ASA' responded to the 1998 flood by offering its clients the opportunity to either withdraw their savings, or to take out a consumption loan.³⁰

Nevertheless, grant support can create long-term dependence. Box 15.9 provides guidelines for microeconomic grants to ensure that they complement, rather than crowd out, commercial financial services and productive investments.³¹

Investments that will result in an income stream in the short term are better funded through RMFI loans. Funding such investments with a microeconomic grant not only risks 'crowding-out' long-term providers of loan finance, but also encourages an inappropriate cost structure for the economic activity, putting at risk its future success. Microfinance providers and microfinance experts working in the region should first be consulted to ensure that any microeconomic grant program does not (at worst) compete with or undermine local microfinance institutions, and (at best) is carefully coordinated with microfinance to provide an eventual way out of grant dependence. Informal microfinance providers, such as village banks and savings and loans clubs, should also be included in the consultation process, as these have an importance for the poor that is disproportionate to their profile and size.

Box 15.9. Microeconomic Grant Guidelines

To achieve maximum impact, microeconomic grants should:

- Be very carefully targeted to those that microcredit cannot serve in a particular context (for example, the destitute poor and temporarily displaced persons);
- Be carefully structured and monitored, to ensure that they go to the needy;
- Be accompanied by training or mentoring, when grants are intended for people to enter productive activities;
- Not finance investments that compete with existing private businesses or that could have been financed by a microfinance institution.

Where there are no active formal or informal RMFIs, one way of encouraging financial institutions to expand lending to rural populations is to include the staff and management of RMFIs and banks in the selection committees for grant programs. Through this involvement financial institutions can assess the viability of expanding their operations in a risk-minimizing way.

15.3.6 Financial assets: maximizing poverty reduction from sustainable livestock development

Livestock is both a means of production and a mobile capital asset, with the latter making it an important tool for risk management, as well. There are four main types of livestock production systems and a host of constraints that affect these systems differently (for example, animal health, access to input and output markets, access to land for grazing, and environmental waste management). The main policy options to overcome these constraints include: (1) creating an equitable and efficient policy framework that encourages a commercially oriented sector, while protecting the rights of poorer and smaller livestock producers; (2) providing critical public goods to protect the assets of producers, improve market access and raise productivity; and (3) implementing targeted programs of support for poorer livestock producers to facilitate their involvement in the sector. This section assesses the importance of livestock to poverty reduction and growth, identifies the main constraints associated with the various types of production systems, and proposes policy options to overcome the key constraints.

Livestock and rural poverty reduction

An estimated 600 million rural poor depend on livestock as part of their livelihood. Livestock owners use livestock either as capital (as storage of wealth), as a means of production and livelihood (meat, milk, wool, eggs), or both. As a capital asset, livestock is often the sole instrument for savings and insurance, because more formal banks are unreliable, too remote, or provide unattractive returns in situations with high rates of inflation. Investments in livestock are used to hedge against unexpected natural disasters such as disease outbreaks, droughts and floods, including traditional hedging/safety net systems. As a means of production, livestock allows the poor to capture private benefits in nutrients and income from communal areas. Much of dry-land agriculture in Africa and South Asia is based on the transfer of nutrients from common rangeland areas to individual plots. Livestock provides critical cash for payment of school fees and other incidental expenses. Livestock is often kept by women, and in many societies the revenue of livestock production goes directly to them. In addition to these direct benefits of livestock ownership, in many developing countries—particularly those with strong pastoral resources—livestock and livestock-related activities (tanning, trade, health services) provide a significant share of total GDP as well as exports.

There are *four main livestock production systems*, each of which faces a different set of constraints.

- *Pastoralists* reside mostly in the arid and semi-arid areas of Africa and Central Asia and have livestock as their main source of livelihood. The critical constraints they face are the extreme variability of their environment and the remoteness of their locations. The first requires a high degree of mobility of their herds, and in particular secure access to potential areas for the dry season (valley bottoms) or winter grazing. It also requires a well-developed marketing system. Because of

the remoteness of the areas they occupy and their mobility, normal service delivery systems do not reach them and special systems are required.

- *Mixed farmers* use livestock for multiple production activities, such as for animal traction, for organic fertilizer and fuel, and for the production of meat, milk and fiber. The main constraints are the provision of animal health and breeding services and access to markets, in particular for milk.
- *Landless livestock farmers*, often in urban or peri-urban areas, largely feed their animals on residue from arable crops and fodder from communal areas. For this production system, the main constraint is access to credit, as they often have no collateral. Environmental regulations become more important as the level of urban development rises.
- *Intensive production systems*, often located near urban areas because of lower transport cost, can “crowd out” the rural poor if the economic and regulatory framework is biased against the poor, as is often the case. By not requiring intensive production units to cover their pollution costs, and by subsidizing the inputs required by intensive units (such as feed grain imports, artificial insemination services), governments can create an incentive framework favoring large-scale intensive producers.

To develop policies and programs to support livestock development, a diagnosis of the production systems and the incentive and institutional frameworks is necessary. Despite the importance of livestock to growth and poverty reduction, livestock producers and their constraints (especially in the case of pastoral societies) generally are not a significant component of the rural poverty reduction strategy, in part because relatively little is known about livestock production, particularly extensive production systems. Box 15.10 offers a summary of important household, institutional and policy issues to assess in developing pro-poor livestock strategies.

Policy options

Equitable and efficient policy framework

Pricing policies. In many developing countries, prices of meat and milk are kept low to favor urban, mostly wealthy consumers. Progressively reducing price controls will therefore generally favor the rural poor and have only a marginal effect on the urban poor, who consume little milk and meat.

Box 15.10. Diagnosis of Livestock Production Systems for Pro-Poor Strategies

Understanding the production system: Ownership patterns (by wealth class, gender, ethnic group, inheritance rules)

- Inter-annual variation (rainfall, herd size, movements)
- Herd composition (species, age/sex composition)
- Key productivity parameters (mortality of different classes, meat and milk production per year and per animal, feed conversion of commercial production)
- Inputs used (veterinary and breeding services, purchased feed, vaccinations and other pharmaceuticals)
- Contribution of livestock to household income, use of outputs

Understanding the institutional framework: Resource access—security of access (or tenure) to water and critical grazing areas

- Producer organizations: orientation, regulations, poverty focus
- Financial institutions: formal and informal systems involving livestock, in-kind credit systems, use of livestock as collateral
- Service delivery: Quality of service as assessed by the different user categories, enabling environment for private service providers, acceptance of para-professional providers
- Marketing: Availability and quality of infrastructure (roads, slaughterhouses), industry concentration
- Information sources: Mainly through participatory assessments with all stakeholders

Understanding the incentive framework: Tariffs and subsidies on key inputs (feed) and animal food products

- Imports of subsidized (including food aid) animal food products
- Fee and subsidy levels for veterinary, animal breeding, water and communal grazing
- Marketing costs and fees
- Cost of environmental regulations

Cost recovery and privatization of services. The introduction of cost recovery and privatization of livestock services is becoming increasingly common. In diverse countries, including Burkina Faso, Kenya and Madagascar, the majority of cattle are treated by private providers. The benefits from most animal health services (clinical interventions, non-compulsory vaccinations, sale of veterinary pharmaceuticals) and all animal breeding services (selection and multiplication of improved breeding stock, semen production and artificial insemination) can be exclusively captured by the livestock farmer. As a result, these are private goods, which can be more efficiently delivered by private providers, assuming that the appropriate regulatory and cost recovery frameworks are in place (Umali and others 1992).

Cost recovery and privatization leads to more client-directed and adapted systems of service delivery such as the development of systems based on paraprofessionals (for example, veterinary auxiliaries and artificial inseminators). Institution-building investments in private and paraprofessional services have been shown to improve the quality and accessibility of the services for the poor, and the poor have demonstrated willingness to pay. Several studies show that the introduction of charges for services resulted in increased demand for veterinary services in Africa (Leonard 2000) and India (Ahuja and others 2001), although India's poor were slightly less willing to pay than the wealthier producers.

Internalizing environmental costs. Internalizing the environmental costs of livestock production, in particular of large, intensive industrial production units, can shift the balance to less-intensive production and avert the risk of small livestock producers' being crowded out. For example, strict controls on the quality of the effluent coming from intensive pig and poultry farms, as imposed in some East Asian countries, increased the price of the meat by about 10-15 percent (de Haan and others 1997), thus increasing the competitive edge of smallholders who operate under a more environmentally benign fashion.

A legal framework that recognizes multi-functionality of land and water assets. For many poor livestock farmers, access to grazing, water and markets is critical for their survival. For the arid areas, mobility of herds and people and access to markets to adjust stock numbers to highly variable climatic conditions is needed. For poor mixed and landless farmers, fodder from the communal areas (road sides, common areas) is also of critical importance. Yet despite the multi-functionality of land in the rural context, legislation is often drafted with a focus on sedentary crops. A related problem is land titling, especially of communally held lands, which—despite the benefits it offers for the land owner(s) and the rural economy as a whole—may lead to reduced access to land and water resources for livestock producers.

Developing adapted land access legislation and promoting feed markets can therefore be of critical importance in creating livestock assets for the poor. Mongolia has one of the most advanced systems of security of access for pastoralists, with comprehensive land legislation, abolition of individual land ownership in pastoral areas, and establishment of appropriate conflict-resolution mechanisms.

Public goods for pro-poor livestock development

Managing risk. With often all of his or her assets tied up in one cow or two goats, livestock producers are particularly susceptible to risk. The main risks are diseases and climatic disasters. Disease risk can be minimized by vaccination campaigns. To mitigate against the effects of droughts, good early warning systems have been successful in ensuring that there is early off-take, which prevents the asset destruction of the poor. The key issues in early warning systems are the design of the system (with the appropriate triggers) and assurance of its maintenance and institutional feedback loops.

Preparing smallholders for a globalizing world. With increasing globalization and the importance of sanitary standards and regulations, an appropriate system of ensuring conformity with these standards, thereby enabling adequate access to markets, is also essential. Capacity building in this area should be an important part of a poverty reduction strategy. While the very poor producers might not be exporting directly, changes in the regulations, often biased toward the large farmers, might affect them negatively. Assessing the effect of food safety measures on the poor livestock farmer (and the consumer) is therefore important.

Targeted interventions for livestock development

Development of adapted financial institutions. Livestock is uniquely suitable for in-kind credit schemes, that is, the provision of live animals to poor farmers who then have the obligation to return a set number of offspring within given time. Generally this payback is in kind, but in some cases it can be monetarized. Prime examples of such schemes exist in Indonesia and with NGOs in Africa and Latin America (Schillhorn).

Strengthening producers' organizations. Even more than the rural poor in general, poor livestock keepers are often not represented in the policy dialogue, because they are simply not there (mobile pastoralists), are not allowed to participate for socio-religious reasons (women), are of a different ethnic/linguistic group than the majority, or cannot be heard because of another inequality in their society. Providing producers with support to maximize their collective voice and improve access to markets has been shown to be useful, particularly in marketing output and obtaining inputs:

- ⊃ Pastoral organizations have been rather successful in mobilizing producers around their preferred inputs (animal health, water development) as shown by projects in Senegal, the Central African Republic, Mauritania, and Guinea. They have been less successful in mobilizing pastoralists in resource management, and most associations have not been sustainable after project completion (Baland 1996).
- ⊃ Production, processing, and marketing organizations are particularly important for perishable products such as milk. They have been successful in Bank-funded projects dealing with the Indian Dairy Cooperative and the Turkish Poultry farmers. Both organizations have been successful in mobilizing large groups of small producers and providing an essential outlet for the produce of rural poor. The Indian Dairy Cooperative model has been mentioned as one of the most successful commodity programs helping to alleviate poverty, with multiple beneficial effects, including nutrition, education (especially for girls), and job creation (Candler and Kumar 1998). Both organizations benefited from strong leadership as one of the critical factors of success.

15.3.7 Knowledge assets: investments in agricultural research and extension

Investments in agricultural research and extension (R&E) can have powerful direct and indirect impact on rural and urban poverty. This section examines the linkages between R&E and poverty and explores options to increase the impact of R&E interventions on poverty reduction.

Knowledge assets and poverty reduction

The effect of research and extension on poverty is both direct and indirect:

- ⊃ Technological innovation *directly* increases the output and farm income of producers and/or reduces production and marketing risks that threaten their livelihoods (for example, by breeding for pest resistance).
- ⊃ Technological innovation *indirectly* benefits households by: (1) reducing food prices (which is especially beneficial to the poor, who spend a high proportion of their income on food); (2) raising employment and wage rates via increased agricultural production and value-added processing of farm output; and (3) empowering beneficiaries of R&E through demand-driven agricultural research and extension services.

In light of these direct and indirect effects, the poverty impact of agricultural R&E investments is often high compared with other public investments. Recent studies by IFPRI in India and China underscore the relatively high poverty impact of R&E investments by comparing the impact on poverty reduction generated by different types of public investments (Pardey and Beintema 2001 and Haddad and Hazell 2001).

Policy and investment options

This section highlights three elements that are important to maximizing the poverty impact of R&E investments. Targeted strategies are generally required, as the conditions for broad-based productivity-enhancing investments to substantially benefit the poor are generally not in place. The public sector often lacks the resources and capabilities to deliver targeted R&E services to the rural poor, and private and non-governmental organizations will need to step in; in order to stimulate their participation, governments should establish attractive institutional and financial frameworks. To ensure that R&E investments are responsive to the needs of the poor, a participatory approach in the design, implementation and monitoring of R&E services is recommended. Finally, this section illustrates how in some very harsh environments, where farmers have few resources with agricultural potential and/or little access to social and physical infrastructure, investments in agricultural productivity are unlikely to yield significant results.

Broad-based growth versus poverty-targeted investments

A key issue in designing R&E investments for poverty reduction is whether to invest for broad-based productivity growth that provides both direct and indirect benefits to rural and urban households, or whether instead to target productivity investments to the poor in order to ensure that they benefit directly. Experience suggests that in order for the poor to benefit from broad-based investments in agricultural R&E, certain conditions need to be in place, such as:

- ⊃ relatively equitable land distribution and an agro-ecological base with potential for productivity growth (that is, the farm sector does not have a bimodal structure, with a few large successful commercial farms and many often less successful, smallholder farmers);
- ⊃ the majority of farmers have access to physical infrastructure and have a minimum level of education and health;
- ⊃ the poor have access to reasonably well-functioning markets for agricultural inputs and outputs;
- ⊃ agriculture and farm wages are an important source of income of the rural poor; and
- ⊃ the urban and rural poor consume mainly non-tradable food staples.

However, often these pre-conditions for the effectiveness of broad-based R&E investments as instruments of poverty reduction are not present. Although past investments in agricultural R&E have had important effects on poverty, the overall poverty impact has often been less significant than hoped. Often, benefits went to wealthier farmers, who may have exerted political pressures to access services; were better able to pay associated costs (that is, travel to fairs, purchase inputs); were more accessible to extension agents geographically, socially and linguistically; were more literate and cognizant of the potential for R&E and how to maximize it; and generally were easier to work with (including such simple things as being better able to offer the extension agent a cup of tea or place to stay).

While there are still opportunities for broad-based productivity enhancing strategies, if poverty reduction is an important objective and if the above-mentioned conditions are not in place, targeted R&E is likely to be less effective in promoting technological advances and poverty reduction.³² In many situations, it is possible to target R&E public expenditures to the poor by concentrating on crops grown by the poor and by using simple production systems affordable to them (Byerlee 2000). Consequently, the starting point in developing targeted options for pro-poor R&E systems is the poverty and sectoral analysis, which allows policy makers to identify key characteristics of the poor, the overall farm structure, as well as the incidence and effectiveness of past interventions in agricultural technology (box 15.11).

Several examples of program targets follow:

- ⊃ Geographic regions with high rates of poverty, especially less-favored production areas (hills, rain-fed areas, arid regions), provided there is demonstrated potential to achieve productivity gains. For example, a high proportion of the poor in Vietnam live in upland and mountainous areas, but almost no research institutes are located there or focus on their problems.

Box 15.11. Evaluating the Farm Sector and Effectiveness of R&E Investments

Key questions to help assess the impact of research and extension interventions on the poor include:

- What is the structure of the farm sector?
- What is the impact of the intervention on the major different farm types described above?
- Which types of farms are typically served by which types of institutions (private, public, NGOs, farmers associations)?
- What is the current and potential role of the private sector in serving the more commercial regions, crops, and farmers?
- Is the proposed service cost-effective in terms of cost per beneficiary and impact?
- Will cost-recovery mechanisms to increase sustainability bias services against the poor?
- Are the poor able to participate and are they involved in meaningful ways in program governance and evaluation?
- How can human and social capital development be maximized to empower the poor in setting the R&E agenda?

- Commodities produced or consumed by the poor, especially staple foods and nutritious foods high in micronutrients. For example, in Nigeria a higher yielding disease-resistant cassava was widely adopted, which resulted in a substantial fall in real consumer prices. Since cassava is a staple food of the poor in Nigeria, the poor captured a large share of the benefits.
- Low external input production systems. For example, poor farmers in upland areas of Mexico and Central America have extensively adopted Mucuna, a leguminous cover crop that reduces their need to purchase nitrogenous fertilizer.
- Diversification into high-value, labor-intensive crops and livestock or upgrading of traditional niche products. For example, small farmers in Mexico successfully export organic coffee with the help of local and international NGOs.
- Environmental and natural resource conservation and sustainable use systems important to the poor (forests, pastures, fisheries). For example, beekeeping is often an important niche product of the very poor in Africa. Extension of quality standards and market opportunities directed at beekeepers has the potential to allow these producers to expand into urban, regional and global markets (Christoplos, Farrington, and Kidd 2001).
- More basic science, such as some types of biotechnology, can also be pro-poor, especially if it ultimately reduces vulnerability to pests and climatic risks, substitutes for external inputs, and adds product traits, such as enhanced microeconomic nutrients of importance to the poor.

Where the poor lack access to sufficient land and other assets, or the agricultural potential of those assets is very low, investments in agricultural R&E may have little *direct* effect on poverty reduction.³³ In some very harsh environments, there is little potential to improve agricultural productivity, and investment in social and economic infrastructure to increase options for off-farm employment will usually provide higher payoffs to investment in R&E.

Investing in institutional capacity for pro-poor R&E

Faced with important fiscal constraints on agricultural budgets and the privatization of many agricultural extension services, along with the recognition that their effectiveness had been limited, R&E services advocates saw an institutional (and financial) vacuum emerge. Recently, a number of private, quasi-private, not-for-profit, and community-based organizations have stepped in to fill the gap. Many of the new organizations are primarily or exclusively dedicated to working with poor rural communities, which often had little voice under old institutional structures. R&E services now generally are based on a pluralistic institutional and financing framework under which a variety of public and private institutions are involved in the delivery and financing of R&E services. To support this pluralistic system, sustainable capacity building is critical and will typically rest on developing:

- *institutionally pluralistic* systems that decentralize or privatize services and strengthen client orientation and accountability. Universities, NGOs and producer organizations can often play a special role in meeting the demands of the poor for R&E services. For example, in Nepal, a local NGO has undertaken an extensive participatory crop breeding program with farmers that appears

to be resulting in a sharp increase in adoption of improved varieties that were developed but not released by the public research system.

- 3) *institutional reforms* that employ contractual and competitive mechanisms to improve management and promote efficiency and effectiveness. Many of these mechanisms can be directed toward poverty enhancement. For example, a competitive grants program in Colombia has awarded research and extension grants that give high weight to their likely benefits for poor farmers and landless laborers.
- 3) *financial sustainability* through reforms that improve confidence in public institutions and build political support for R&E, especially from poorer groups. Cost recovery and cost sharing are important to financial sustainability, and even quite poor farmers have shown a willingness to cofinance services when they meet their demands (for example, cofinancing of extension services by small scale farmers in Nicaragua).
- 3) *a sharper focus of government* focussed on pro-poor programs. An *expanded role for the private sector* can reduce policy and regulatory barriers and orient programs to market demands. For example, privatization of hybrid maize research should free resources for the public sector to produce open pollinated varieties for poorer farmers and regions.
- 3) *capacity for producer organizations* to integrate user groups into research and extension systems, strengthen technical and managerial capacities, and encourage inclusion of women and the poor. For example, farmers in Mali have received support to organize and contract in adaptive research according to their demands.

Encouraging participation

Participatory strategies for program design, implementation, monitoring and evaluation are important to ensure the appropriateness and poverty focus of the R&E investment (Salmen 2000 and Alex and Byerlee 2000). They also help to build capacity of individuals and local institutions and encourage demand for services where there has been little in the past (box 15.12). Participatory strategies for R&E must also be pro-active in reaching out to all groups of the poor. Typically women have much less access to extension information and less influence on technological innovation than do men. Pro-poor extension services need to emphasize facilitation approaches in which the farmers and extension agents jointly identify and seek solutions to problems and opportunities. However, these approaches require extension staff able to deal with multi-disciplinary problems and different agencies, and often extensive staff training programs in participatory techniques are required to ensure the program's effectiveness.

15.3.8 Social assets: social capital for rural poverty reduction

Social capital, marked by the strength and cohesion of a given community, is a crosscutting resource that can facilitate and improve access to and the strength of the other forms of capital (natural, physical, financial, and human). This section examines the three types of social capital and provides several examples of how social capital can assist households in accessing other resources and assets. It is difficult to positively affect social capital from outside a community and, in fact, outside efforts may often negatively affect existing social capital. The final section identifies three approaches that can help foster the development of social capital.

Overall framework – how does social capital affect opportunities for poverty reduction?

Social capital can lead to positive externalities, such as financial and emotional support from one's religious community, information about potential jobs, a reduction in transaction costs across firms, or collaboration across organizations to educate people about their rights and improve voter turnout.³⁴ Social capital is also a critical factor in the sustainability of development projects because it values

Box 15.12. Farmer-Run Research: Experience with the CIALs

Turning responsibility for on-farm testing over to farmers is an attractive alternative that has been extensively used by CIAT (International Center for Tropical Agriculture) in several countries in Latin America. Under the CIAL (Local Agriculture Research Committees) program, begun in 1990, an institution with interest in technology dissemination (usually a state agency, NGO, or cooperative) facilitates a meeting in which a community analyzes potential needs for local technology testing. If the community is interested in undertaking local research, it selects a four-member committee (the CIAL) from the community to coordinate the research work. Outside technical staff from the organizing institution assist in planning and analysis of research trials and a paraprofessional (a CIAL-experienced farmer) monitors and advises on the research. Technical staff visit 2-3 times per season after the first 2-3 seasons. CIALs operate with a small fund (US\$500 per community) to cover the risks of crop failure or to subsidize the costs of trials. These CIAL funds have been consolidated into a corporation at the national level, but each CIAL manages its own fund. The funds, like the whole program, are “owned” by the community and managed by the committee.

Source: Ashby and others (2000).

relationships among various stakeholders and anticipates possible breakdowns in cooperation or abuses by certain parties. However, social capital can also have negative consequences and lead to nepotism, corruption, ethnocentrism, and/or stringent social controls (Portes and Landholt 1996).

Social capital has various forms and functions that influence rural development.³⁵

- ⊃ *Bonding social capital* refers to tight-knit, homogeneous groups of people that provide important safety nets for one another in times of crisis.
- ⊃ *Bridging social capital* refers to horizontal networks of more heterogeneous people or groups that enable members to access additional, diverse resources and information. This access translates into more productive livelihood investments such as credit, technical support, jobs or market information. Examples of bridging networks include professional associations that span ethnic groups or political groups that bring together assorted constituencies to achieve common goals.
- ⊃ When civil society and the state form effective vertical relationships, it is referred to as *linking social capital*. Communities can be linked to additional formal resources such as information, services and funding (for example, when rural families are connected via local agricultural extension workers). Linking social capital is particularly important for development because without relationships with formal institutions, poor people are unable to influence public policies and programs. These relationships are critically important for government as well because the knowledge and input from local communities make government efforts more successful. Local input often reduces the costs of government services and improves sustainability.

The poor are often well-off in terms of bonding social capital, but weak in bridging or linking social capital.³⁶ For example, in Mexico, while indigenous communities have strong social solidarity and horizontal decisionmaking, they are still among the poorest in Mexico (Fox 1996). This solidarity helps them cope during tough times but, without links to formal institutions and resources, indigenous communities cannot channel their organizational capacity into significant and sustainable political and economic opportunities.

Several examples of how social capital can be used to foster development are provided below:

- ⊃ *Land and common property management*. Social capital enables collective action and can help people build and manage common property resources, such as land and fresh water wells (Ostrom 1990). Natural capital or common property resources are subject to exploitation by those with superior access. Strong community groups can play direct or indirect supervisory roles, ensuring that there is equal access to communal property and shared natural resources. Social cohesion improves the information flow within the community and thus helps to identify individuals who use common resources irresponsibly or exploit them at the expense of others (Bebbington 1999). Experience with rural water users associations across countries indicates that maintenance is more efficient and programs more likely to be sustained if users are empowered to play a substantial role in running the systems.^{37 38}

- ⊃ **Rural infrastructure maintenance.** Social capital can support rural infrastructure development through the mobilization of government resources and through local efforts to build and maintain it. Community maintenance programs can be critical to ensuring that rural roads remain passable. Without the monitoring and evaluation by like-minded rural inhabitants, public goods are subject to free-riding (Narayan and Pritchett 1998).
- ⊃ **Finance.** Social connections play a critical role in obtaining credit for poor rural families, though the role of social networks becomes less important as borrowers seek larger and larger loans (van Bastelaer 1999). Where formal financial institutions are absent or weak, some poor communities have devised their own mechanisms for pooling resources and lending money to those who need it. In some cases “social collateral,” a borrower’s reputation or social networks, serves in the place of the physical collateral that so many poor rural families lack.
- ⊃ **Marketing.** Social capital, networks and local institutions help to pool resources and build better links to markets and trade policy making. Examples of this are Rural Producers Organizations (RPOs), agents of the private sector, which also serve as vehicles for linking otherwise isolated and powerless producers to the formal resources, institutions and decisionmaking bodies of society (Rondot 2001). For RPOs to flourish, governments must allow collective action and foster legal frameworks that recognize the RPOs and facilitate their operation.
- ⊃ **Information.** Local social structures affect how information is diffused and whether or not new methods are adopted and increase production. Evidence shows that this is indeed true when it comes to fertilizer adoption in Tanzania. Isham (2002) finds that group homogeneity, leadership heterogeneity and participatory norms can promote rapid diffusion of agricultural technologies that, in turn, help improve household income and well-being. Barr (1997) also finds that in Ghana social networks mediate access to information that can lead to differences in productivity among enterprises.
- ⊃ **Risk mitigation and coping.** The presence of local associations and networks enhances the ability of poor villagers to allocate resources efficiently and increases their resilience to hazards. This is especially important because many women are not involved in the formal sectors and, as a result, are often locked out of information that may help them survive and/or thrive. While such networks are essential, they are often poor substitutes for formal insurance mechanisms that should be available through the state or market (see risk section below). Social capital also encourages risk taking and thereby engaging in activities with higher rates of return. Findings from *Cents and Sociability: Household Income and Social Capital in Rural Tanzania* indicate that social capital is associated with increased income in part because social cohesion at the village level encourages individuals to take risks that will help them be more productive and build their stock of produced capital (Narayan and Pritchett 1998).³⁹

Policy options⁴⁰

It is difficult to positively affect social capital from outside a community because indigenous norms and networks are deeply ingrained. In fact, it is relatively easy for outside efforts to negatively affect existing

Box 15.13. Key Questions to Assess Impact of Investments on Social Capital

1. Whose idea is being developed/implemented?
2. Who are the stakeholders? Who is participating?
3. What are some of the shared interests/goals?
4. Where is the accountability? What are the mechanisms and in which direction do they run?
5. How will the impact/success be measured?
6. Who chose the indicators? Who is qualified to measure the indicators?
7. Where are there opportunities for learning and adapting the program?
8. Who will benefit?
9. Might there be any losers? Who?
10. Are they participating in this process?
11. How and when will information about this project be shared?
12. Is there space for outsiders (indirect stakeholders) to give reactions/input?

social capital, and as a result, direct efforts to develop social capital should be approached with caution. For example, when a dam is built, communities may be displaced and members forced to scatter, losing decades-old social organizations and support systems in the process. However, there are ways for governments and other actors to foster enabling environments in which social capital can thrive. There are also ways to minimize possible unintended negative social capital outcomes by promoting transparency and accountability.

Important first steps are to assess the existing levels of social capital (technical note L.4) and to evaluate the impact of the proposed intervention on existing social capital (box 15.13). Specific recommendations to foster the development of social capital include fostering transparency and access to information at the local level, encouraging inclusion and participatory approaches, and strengthening existing organizations.

Fostering transparency and access to information

Access to information is important, since informed citizens are better equipped to take advantage of opportunities, access services, monitor their leaders and exercise their rights (Woolcock and Narayan 2000). Some options to foster access to information are to:

- ⊃ post public information, such as village budgets received from the state and current expenditures (some village leaders post such information in the center of the village so all the community members can monitor what is happening); prepare a phone book of government offices and services to help citizens locate the appropriate place for services;
- ⊃ engage the media (print, TV and radio and the Internet) to keep the population informed. Other popular forms of media can include traveling theater troupes that inform rural people of their legal rights; and,
- ⊃ ensure mechanisms are in place to allow for the local population to participate in resource allocation decisions and to track actual expenditure uses, especially when decentralization has occurred.

Inclusion and participation

Inclusion and participation can be encouraged by:

- ⊃ including poor people and other excluded groups in decisionmaking to ensure that public actions build on local knowledge and priorities, and investing in bringing rural representatives into the decisionmaking fora or sending agents into rural areas to collect input on local people's opinions and priorities (be sure to inform them of any subsequent decisions or action);
- ⊃ building bridges across ethnic, religious, caste, gender, and socio-economic divides (this knowledge and familiarity with other groups can help diffuse potential future times of ethnic or political tensions); and
- ⊃ holding regular village meetings in central public spaces and including all members of the community, as this sends an important signal that decisions are being made in a transparent way and provides community members opportunities to voice concerns as well as share good news on development issues.

Support local organizational capacity

Local or community-based organizational capacity (marketing organizations, local infrastructure maintenance groups, community councils) can support productive activities and can facilitate the management of public goods and the transparent allocation of public resources at the local level. The challenge is to develop local organizations from the bottom up. Experience has shown that organizations formed to capture external resources do not last over time. Advocates can support local organizational capacity by:

- ⊃ building ties with isolated populations to help them develop the skills and motivation necessary for them to build local organizations or expand the capacity of existing indigenous organizations;
- ⊃ using local community facilitators to help citizens identify and prioritize common goals;
- ⊃ providing training and technical assistance to give local groups the capacity for planning, management and independent monitoring of public budgets and performance; and
- ⊃ encouraging sector agencies to develop strong relationships with community-based organizations, helping to build local skills and receiving inputs to render government efforts more effective (Woolcock and Narayan 2000).

15.3.9 Risk management in rural areas

This section examines options to assist rural households to better manage risk. In particular, it concentrates on market-based and social protection initiatives, since many of the other policy options are covered above (for example, water, research and extension, microfinance, health and education, and infrastructure). It complements chapter 17, “Social Protection,” which covers how to assess the sources of risk and vulnerability and the current coverage and quality of social protection programs, as well as criteria to develop a successful social protection program, and indicators for monitoring and evaluating social protection programs.

Risk and rural poverty

Rural households face significant levels of risk, yet have limited public and private instruments to cope with income fluctuations. The heavy reliance on agriculture exposes many rural households to high levels of risk from climatic forces, plant and animal disease, price fluctuations and policy reforms. Also, rural households have significant health risks (for example, malaria, river blindness, HIV/AIDS).

Many rural communities rely on informal mechanisms to cope with risk (for example, informal capital, land and labor sharing arrangements, remittances, extended family and community networks, traditional money lenders, livestock/grain exchanges). However, these mechanisms work best when the shock is idiosyncratic, and they tend to fail under a protracted and severe crisis or covariate risk, where an entire community or region is affected. In addition, many of these informal mechanisms are not available to poorer households to cope with risk, as they are based on reciprocity (Morduch 1999; World Bank 2000a).

Faced with high levels of risk and limited instruments to manage this risk, many poor rural households fall into a poverty trap. In order to survive in case of shocks, poor rural households are often forced to sell livestock and other productive assets—which substantially reduces their income-generating capacity in the future and locks them into perpetual poverty—or suffer increased malnutrition. Also, many poorer households fall into a poverty trap by engaging in low-risk but also low-return investment strategies (such as cultivating basic grains instead of potentially more profitable vegetables, or shunning the use of improved varieties that are more vulnerable to unfavorable rainfall outcomes). Poor households may further find themselves without the means to adjust to and take advantage of new price incentives that result from price and trade liberalization.

Policy options

Social protection for rural space

Social protection policy assists households to cope with risk from short-term income fluctuations as well as long-term risk from chronic poverty (the sick, the elderly and handicapped, and those households with almost no assets). Key social protection programs include: pensions and cash transfer programs, insurance (crop, health, unemployment), labor-market interventions, public works, food subsidies and food transfers. Unfortunately, many social protection programs are difficult to implement in the rural context for two broad sets of reasons:

- ⊃ Social protection programs are difficult and expensive to implement in rural areas, because of high transaction costs (resulting from low population density and low levels of basic infrastructure and social service provision) as well as the large share of the population to be reached.
- ⊃ The prevalence of informal employment in rural areas makes it difficult to collect beneficiary contributions for pension programs, regulate wages and working conditions through labor-market regulations, or collect reliable and accurate household income data necessary to target safety-net benefits.

The most common SP interventions in rural areas have been public works programs, food security initiatives and, more recently, cash and quasi-cash transfers. Best practice from these three types of programs is summarized below.

Public works programs provide a fast cash or food injection among able-bodied beneficiaries, create infrastructure and are self-targeting through the wage rate, which is slightly below market rates. These programs can be operated on a continual basis or in response to natural calamities. Thus, low-income individuals faced with natural disasters, poor climate conditions or general economic downturns can seek employment in accord with their need, and exit when other opportunities arise. The public works programs also, by drawing labor away from other activities, can provide an indirect benefit and lead to higher overall rural wages. Good examples of such public works schemes include the Maharashtra Employment Guarantee Scheme (EGS) with an average monthly participation of half a million (1975-89), and the Bangladesh Food for Work Program, which was of comparable size in 1990 (Drèze and Sen 1989).

The initiatives are best seen as risk-management programs, as the quality and usefulness of the infrastructure provided may be low. Part of the difficulty has to do with the inherent tension in trying to achieve two goals with a single instrument. The poverty-reduction and risk-management goal requires as high a share of unskilled labor costs in total expenses as possible, while the infrastructure construction goal would entail a higher share of skilled labor and non-labor costs in order to secure higher quality outputs. Public works programs also involve high administrative costs, as the infrastructure projects must be overseen and financed, and exclude those not able to work (the aged or ill, young children, mothers although some programs have introduced daycare options for parents of young children. These concerns underscore that the design features of the programs are critical to their success.⁴¹

Food security initiatives are critical instruments of risk management for both rural and urban areas. Traditionally, many developing country governments have sought to support the rural sector and ensure food security with agricultural subsidies and trade protection. Yet these mechanisms often have hurt or failed to benefit the poor and have created considerable market distortions and administrative costs (box 15.14).

There are three pillars of food security policy. The first ensures adequate supplies or *availability* at the national level. The second increases and ensures household *access* to or purchasing power for food products. This can be done by cash transfer programs, distribution of food aid, targeted food subsidies (such as Mexico's tortibono program, in which households had key cards that allowed them to purchase tortillas at subsidized prices) and generalized food subsidies. Targeted cash transfers to households are more efficient than direct food distribution, as they do not undermine private marketing chains. In most situations, cash transfers will allow the recipients to purchase food using normal market channels,

Box 15.14. Trade and Price Policies to Support the Agricultural Sector

Traditionally, many developing country governments sought to support the rural sector with agriculture subsidies and trade protection. The overarching objective of these policies was national food security, although the need to protect farmers from price fluctuations was often used to justify price and trade controls, along with the greater administrative ease of market interventions (Alderman 2000). Nonetheless, government intervention in agriculture often has had a negative impact on farmers, as governments taxed farmers directly or indirectly in an effort to use agriculture revenue to finance development (Krueger, Schiff and Valdés 1991). In addition, market interventions were distortionary; the benefits accrued to the larger farmers with a marketable surplus and carried strong administrative costs, as they often involved the use of parastatals and consumer subsidies. Finally, these policies focused on agriculture and not the rural sector as a whole and were not conducive to the balanced development of rural areas.

although in famine situations, it may be necessary for outside agencies to transport food to remote areas. Universal food subsidies are very unlikely to be financially viable. They are often also difficult to scale back once acute needs have diminished.

The third pillar of food security, improved *utilization*, can achieve a reduction in the number of malnourished individuals residing within food secure as well as food insecure households. Improved utilization can be achieved through nutrition and health interventions as well as through programs that improve the status of women. Improving food utilization can be a part of all food security initiatives. Indeed, nutrition policy misses the mark when it equates food access with improvements in nutrition. Since the nutrition of a child reflects the interplay of food consumption, health status, and child care, promising avenues for nutritional improvements include a range of services that address whichever of these factors is most limiting. For example, one of the most innovative recent interventions in nutrition, Atencion Integral a la Niñez Comunitario in Honduras, eschews food transfers and concentrates on regular weighing of children as an entry point in information sharing among the community. Similarly, analysis of malnutrition in Ethiopia shows that changes in community knowledge about nutrition or women's education could have as much as or more impact on nutrition as plausible changes in income or food prices (Christiaensen and Alderman 2001).

Cash and quasi-cash transfer programs for the poor and vulnerable face special challenges in rural areas due to the difficulty in finding targeting criteria that can be easily monitored and high costs of administering programs in communities with low population densities and undeveloped infrastructure. Many of the most successful programs in rural areas, such as Mexico's PROGRESA and South Africa's Old Age Pension, are administered in middle-income countries, where there are more budget resources for safety net programs and a better social and economic infrastructure in rural areas (box 15.15).

However, cash transfers and quasi cash transfers (for example, vouchers for inputs) do help raise incomes and may also have a multiplier effect, as they facilitate household investments (Wodon and Cord 2001). The multiplier effect may reflect the lifting of capital constraints faced by many households or an increased proclivity to invest (or to invest in high-risk activities, which could deliver the risk-reducing impact of a long-term income transfer program); or it may reflect a consumption multiplier due to the injection of cash into the local economy. In addition, if linked to health-center visits or school enrollment, the cash transfer programs can generate significant long-term increases on beneficiary income. Cash transfer programs are also more cost-effective and efficient than the subsidy programs they are replacing (box 15.16).

The high costs of transfer programs may be lowered by relying on existing NGOs in rural areas to distribute the benefits, private retail outlets (for example, Malawi's starter pack program and Romania's input vouchers), or government extension workers (Mexico's PROCAMPO) (Cord 2000). However, existing infrastructure in many rural areas is weak, and therefore those households residing in remote areas may be excluded. Another option to reduce the cost of cash transfers is to provide *transitory*

Box 15.15. Mexico's PROGRESA and South Africa's Pension Program

PROGRESA and South Africa's social pension program appear effective in assisting poor households to manage risk and improve their welfare. In addition, both programs were economically efficient in that they did not distort market signals and benefited from strong political support. Both programs also reduced poverty rates, although over the longer run, PROGRESA is expected to have a larger impact on household income due to the investments in education and health associated with the program. The main drawbacks to the two programs are the high incremental costs of both programs and, in the case of PROGRESA, its reliance on health, education and road infrastructure which suggest that their replicability in very poor developing countries may be difficult. Also, the reliance on government services and the road infrastructure may lead to the exclusion of very poor households in areas remote from program benefits even in middle-income countries (Cord 2001).

The poorest countries with the greatest need for poverty programs also have the greatest need to be selective, as they face more limited financial means. To illustrate, consider a program in Mozambique that is of the scale of South Africa's largely rural Old Age Pension, that is, one that transfers 1.5 percent of GNP to roughly 20 percent of the households. In an economy as relatively well off as South Africa, and with the skew in its income distribution, this transfer increases household incomes of recipients by 50 percent. In contrast, a transfer of 1.5 percent of Mozambique's substantially lower GNP would only add 15 percent to the incomes of its beneficiaries.

Box 15.16. When Cash Transfer Programs Replace Subsidies

While the costs of cash transfer programs are high, if they are used during the transition period following privatization or liberalization programs, the incremental costs can be small compared with the costs of the subsidies and parastatals. Moreover, cash transfer programs have a greater transfer efficiency, as they have lower administrative costs, the potential for fewer leakages and low transactions costs for beneficiaries. Also, the programs offer efficiency and fiscal gains compared with subsidies. The cash transfer programs do not affect market signals and also provide more predictable expenses as opposed to price and trade interventions, which vary according to production, marketing costs and world prices (Cord 2000).

assistance to prevent destitution in the face of an income loss. It is, however, a challenge to design publicly funded programs to stabilize income or consumption without creating inducements that encourage risk taking, and which have a clearly defined exit strategy. Cost-effective income stabilization programs, however, are not completely unprecedented. For example, subsidies to livestock transport in Kenya have successfully prevented price collapse during a drought and, thus have served as insurance for pastoralists.

Market based mechanisms for risk coping

Insurance. While savings allow the poor to cushion for future events or emergencies, microeconomic insurance offers a way to manage specific risks by sharing the cost of unlikely events among many poor households. Microfinance institutions are now paying more attention to household insurance, but credit cooperatives have offered forms of life and health insurance for years, and informal burial societies have operated in most developing countries for generations.⁴²

Like savings, direct provision of insurance services requires significant skills and systems, as well as institutional permanence. For this reason, NGOs can be effective in assisting poor households to gain access to the services of strong and established insurance companies. FINCA, an NGO operating in Uganda, acts as an agent for a formal healthcare plan in order to bring health insurance to FINCA's clients.⁴³

However, insurance may be most useful in those situations where it is also most difficult to implement, such as areas at high risk of natural disasters, or more recently, in populations suffering from HIV and AIDS. Unfortunately, insurance is a weak instrument for addressing community-wide risks, which is disappointing for those seeking to help the poor with the financial burden of these crises.

Commodities and futures markets. In many industrial and newly emerging countries, farmers have the opportunity to use various marketing arrangements to reduce price risks for commodities not yet produced, or for inputs needed in the future. The most important alternatives, from a risk-management perspective, include cooperative marketing with price pooling, forward contracts for commodity sales or for input delivery, and hedging on futures markets. Analysis has suggested useful possibilities for futures trading to assist in risk management in diverse circumstances, such as wheat marketing in Pakistan and coffee marketing in Costa Rica.

Market information services (MIS). Knowledge of market information tends to reduce the risks and lower the transaction costs of participating in the market. These efficiency gains can lead to increased participation in the markets and greater stability of prices and supply/demand. Improved information enables farmers to plan their production, harvesting, and selling according to market demand and in some cases to choose the optimal marketing channel. Market information is also a necessary part of Early Warning Systems that can identify potentially dangerous food shortage trends.

Other programs to assist rural households in risk management

Many other public interventions directly reduce the riskiness of rural incomes. These are briefly recapped below, given their importance in risk management and income stabilization:

- *Irrigation and water control investments* add both to the average level of production and to the stability of yields.

- ⊃ *Rural infrastructure investments* (in particular roads as well as telecommunications) assist in market integration in a manner that increases overall income-earning potential and reduces the impact of local production conditions on price fluctuations.
- ⊃ *Access to reliable information* significantly reduces uncertainty in a risky world. A key to enabling rural residents' access to reliable information is the availability of and the ability to utilize telecommunications networks and rural roads.
- ⊃ *Rural microfinance initiatives*, in particular credit, savings and insurance programs, enhance income security and facilitate investment.
- ⊃ *Research and extension efforts* disseminate plant varieties that are more resistant to pests and diseases and to abiotic stresses associated with natural phenomena such as droughts and floods (Anderson 2001).
- ⊃ *Food distribution and fee waivers for education and health services* can be quite effective in supporting the rural poor, who have limited access to these services. However, these programs are also limited in rural areas by the limited network of social services (chapter 17, "Social Protection").

In the aggregate, the initiatives reviewed in this chapter can assist the rural poor to better manage the high level of risk that characterizes the rural environment. Many of the interventions described above are useful not only in ensuring that basic needs of rural households are met, but also in helping them to better manage their natural, physical, and financial assets to increase their incomes over time.

Notes

1. For a fuller discussion of the linkages between agricultural growth, and rural and urban poverty and growth, see Johnson and Mellor (1961) and Timmer (1995).
2. For example, a detailed study of rural poverty in Northeast and Southeast Brazil revealed significant heterogeneity in welfare indicators and income sources among the rural poor. The rural poverty reduction strategy developed on the basis of this study was framed in terms of an integrated set of policies to provide multiple paths out of poverty, tailored to the heterogeneous cross section of poor rural household groups (World Bank 2001).
3. Chapter 2, "Inequality and Social Welfare," provides detail on methods to assess the distributional impact of government programs, while chapter 6, "Public Spending," presents tools to assess the flow of public expenditures towards the poor.
4. For information on the various tools available to assess the poverty and distributional impact of pricing, marketing and public expenditure policy, also see World Bank (2002).
5. For more information on beneficiary assessments of agricultural extension services, see Salmen (1999 and 2000).
6. See chapter 4, "Development Targets and Costs," for different approaches to costing targets.
7. There are four strategic areas for attention in planning for participation in PRSPs: poverty diagnostics, public expenditure management, policy formulation and implementation, and monitoring and evaluation. These four areas are described briefly in section 7.3 of chapter 7, "Participation," and then explored more fully in section 7.5 of the chapter. The chapter also provides guidance on planning for participation and features case studies illustrating the growing toolkit of participatory methods and their importance to more relevant and effective efforts to reduce poverty, including in rural contexts.
8. Narayan and others (2000b): 205.
9. See Narayan (2002).

10. The diets of the rural poor are closely related to the agricultural season. Many micronutrient-dense foods such as green leafy vegetables and fruits are only available at certain times of the year and, hence, seasonal deficiencies may be more common among poor rural residents.
11. These projects have encompassed various combinations of services, including growth monitoring and growth promotion of children, nutrition education for mothers, home visits, subsidized weaning foods, supplements for pregnant and lactating women and reference to health facilities for severely malnourished or sick children. The success of these projects has been attributed to their decentralized nature, their use of a mix of services and subsidies, their focus on prevention and learning by doing.
12. See Moulton (2001).
13. This scenario is mirrored in the organizational structures of many international aid agencies.
14. Notwithstanding conventional assumptions, there is also strong evidence of the advantages (quality and cost-effectiveness) of community ownership of low volume roads through local roads associations (Malmberg-Calvo 1998).
15. In Uganda, a recent household survey found that land made up more than 50 percent of households' assets. Moreover, liberalization appears to have increased returns to households' endowments of physical and human capital, implying that initial asset ownership was an important predictor of income growth and the ability to escape poverty over the 1992-2000 period (Deininger and Okidi 2001).
16. A recent study estimates that in India, land market distortions reduced annual economic growth by close to 1.3 percentage points (McKinsey 2001; <http://www.mckinsey.com/knowledge/mgi/reports/india.asp>).
17. Estimates for South Asia indicate that about 30 percent of the incomes of the poorest are still derived from common property resources (Beck and Nesmith 2000).
18. In addition to discouraging speculation, land taxes provide essential revenue to local governments to provide infrastructure and other services more effectively and at the same time impose fiscal discipline at the local level.
19. In many African countries, customary land tenure arrangements have only very recently received recognition by the law (Alden Wiley 2001).
20. This creates the possibility that multiple owners may have legitimate claims to the same piece of land, depending on the law used. The court system is normally unable to handle these cases quickly, with potentially severe impact on much-needed investment.
21. In Mexico, a dedicated and decentralized system of agrarian justice with a staff of more than 5,000 has already spent more than six years without being able to fully clear the backlog of cases that had accumulated up to 1992 (World Bank 2001).
22. In Zambia, the fact that the market for surveying was tightly monopolized by a "cartel" of only six registered surveyors implied that it took years to get a survey done; the survey was a pre-condition for obtaining land title (Moll 1997). For many countries in Eastern Europe and the FSU, high notary fees (of up to 20 percent of the value of the land) provide a severe disincentive to physically register any form of land transaction, including the physical identification (and possibly subsequent withdrawal) of individually owned but collectively cultivated plots (Giovarelli and others 2000).
23. Even though land rights are not fully transferable, the case of Mozambique, where communities have to give their consent to any investment project, is a good example of how this can be achieved.
24. Note that such grants are often very high in "expropriative" land reforms.
25. Free of political interference where land rights can, for example, be withdrawn if the land is not efficiently used.

26. “Microfinance” refers to provision of financial services—loans, savings, insurance, or transfer services to low income households (CGAP 2001). This note draws extensively on CGAP (2001) and Charitonenko (2001). For more information on CGAP and its resources for microfinance institutions see <http://www.cgap.org>.
27. See also Committee of Donor Agencies for Small Enterprise Development and Donors’ Working Group on Financial Sector Development (1995).
28. Longer term subsidies may be warranted for pre- and post-transaction activities, such as product development, market surveys and impact measurement.
29. See Stuart Rutherford’s *The Poor and their Money* (Rutherford 2000) for a further explanation of the savings strategies employed by the poor.
30. For more information, see Brown and Nagarajan (2000).
31. These guidelines are informed by an internal background paper written by William Steel (Steel 1996) for the World Bank’s rural strategy document, “Rural Development: From Vision to Action.”
32. In addition, several other recent developments also favor more targeted productivity-enhancing strategies. The growing importance of private investment in R&E for commercial agriculture has freed public resources for poorer farmers and marginal areas. Also, the liberalization of trade has integrated global markets and reduced the effect of productivity growth on domestic food prices, while at the same time has opened new opportunities to develop high value crops in specific locations, thereby reinforcing the need for targeted R&E services.
33. The poor may have no time to participate in programs or be unable to assume the risk or financial costs of new innovations.
34. Cultural capital defined by the cultural practices that are meaningful in given communities may also be an asset. Cultural capital is unlikely to survive unless the strength of social capital carries it forward from generation to generation (Bebbington 1999).
35. Portes (1998).
36. Narayan and others (2000a and b).
37. Narayan (1995).
38. Water and sanitation associations are now widely recognized as innovative participatory methods of delivering water and sanitation services to rural communities. Service delivery is based on local demand and can be tailored to specific needs. The formation of these associations requires that there be at least minimal social cohesion in the local community. (World Bank Technical Paper, “Users Organizations for Sustainable Water Services.”) Water user groups can serve as the village-level forum where beneficiaries resolve conflicts, monitor progress, select resource people and trainers, and maintain the infrastructure they have built. (Dorst, Steve, World Bank Land Management Web site).
39. See also example of Six-S in Burkina Faso, which is a loose federation of rural organizations supported by more formal international NGOs (Uphoff, Esmann and Krishna 1997).
40. This section draws on discussions found in Esmann and Uphoff (1984), Fox and Gershman (1999), Narayan (1999), Narayan and others (2000a and b), Narayan (2002), and Woolcock and Narayan (2000).
41. Subbarao (2001) provides a good overview of the issues involved.
42. For more information, see Brown and Churchill (1999 and 2000).
43. On approaches taken by microcredit organizations to facilitate access to insurance, see McCord (2001).

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Chapter 16

Urban Poverty

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16.1 Introduction

This chapter is addressed both to stakeholders engaged in countrywide poverty strategies and to local-level participants in such strategic exercises for their city.¹ The chapter is organized around two major themes:

1. Understanding urban poverty
2. Addressing urban poverty

Section 16.2 begins by addressing the nature of urban poverty and the ways to assess it. Section 16.2.1 discusses the frameworks for understanding urban poverty; section 16.2.2 sets urban poverty in context. Sections 16.2.3 and 16.2.4 outline some approaches to assessing urban poverty and the possible indicators corresponding to each of its dimensions.

Section 16.3 examines the public actions both national and local governments may take to address urban poverty, the options for program interventions, and the ways governments may reach consensus supporting the necessary decisions. Section 16.3.1 discusses the wider impacts of urban poverty reduction; section 16.3.2 summarizes the main policies and institutional elements for urban poverty reduction, both for supporting widely shared growth with equity and for sustaining poverty-targeted measures; section 16.3.3 describes key considerations for monitoring and evaluating existing projects, and presents a menu of program options; and section 16.3.4 suggests some ways to share roles and responsibilities at the national and city level, including the processes of decisionmaking and prioritization regarding public actions.²

16.2 Understanding Urban Poverty

16.2.1 Frameworks for understanding urban poverty

The overview section of this book sets out five dimensions of poverty: income/consumption, health, education, security,³ and empowerment. Table 16.1 summarizes the key features of poverty across these dimensions in the urban context. Urban poverty is often characterized by cumulative deprivations—that is, one dimension of poverty is often the cause of or contributor to another dimension. This is illustrated in figure 16.1. (See also technical note M.2, “Dimensions of Urban Poverty.”)

In the urban context, poverty and vulnerability (a dynamic concept whereby the “vulnerable” face the risk of falling into poverty) can be related to three distinctive characteristics of urban life: commoditization (reliance on the cash economy), environmental hazard (stemming from the density and hazardous location of settlements and from exposure to multiple pollutants), and social fragmentation (lack of community and of interhousehold mechanisms for social security, compared to those in rural areas) (Moser, Gatehouse, and Garcia 1996b).

Vulnerability is closely linked to asset ownership. The more assets people have, the less vulnerable they are; the fewer the assets held by households, the greater their insecurity. The types of assets fall under the headings of labor; human capital—health, education, and skills; productive assets—often, the most important of these is housing; household relations; and social capital.

The two analytical approaches (that is, examining poverty in terms of its multiple dimensions, and examining poverty with reference to vulnerability and asset ownership) in fact complement each other. For operational purposes, the multidimensional character of poverty needs to be analyzed both with reference to the framework of asset ownership and to the cumulative impacts of poverty in its many dimensions. Table 16.2 demonstrates how each dimension of poverty is related to ownership of assets. The table also indicates policies which can strengthen asset ownership (discussed in further detail in section 16.3.2).

essential goods and services

- ⊃ Employment insecurity/casual work
- ⊃ Unskilled wage labor/lack of qualifications for well-paid jobs
- ⊃ Inability to hold a job due to bad health
- ⊃ Lack of access to job opportunities (urban poor often have to trade off between the distance to a job and the cost of housing)

- ⊃ Failure of public services, such as education, health, infrastructure, and transport, to serve the urban poor
- ⊃ Regulatory constraints on small enterprises perpetuate “informality” of work available to the poor, discourage asset accumulation and access to credits, and increase vulnerability of workers

- in underdevelopment of physical capital assets
- ⊃ Inability to afford essential public services of adequate quality and quantity (for example, inadequate water supply can cause unhygienic living conditions and ill health)
- ⊃ Poor human capital (for example, bad health and educational outcomes due to stress, food insecurity, and inability to afford education and health services)
- ⊃ Depreciated social capital resulting in domestic violence and crime

Health

- ⊃ Overcrowded and unhygienic living conditions
- ⊃ When housing and industrial functions are juxtaposed in cities, residential environments become prone to industrial and traffic pollution
- ⊃ The poor in cities settle on marginal lands prone to environmental hazards such as landslides and floods
- ⊃ Exposure to diseases due to poor quality air and water and lack of sanitation
- ⊃ Injury and deaths arising from traffic
- ⊃ Industrial occupational risks (for example, unsafe working conditions, especially for those in informal-sector jobs)

- ⊃ Land and housing regulations can make proper housing unaffordable, pushing residents into disaster-prone and polluted areas
- ⊃ Bad policy frameworks and failure of public services such as environmental and health-related services (water and sewerage, solid waste disposal, drainage, vector control) to keep pace with population growth
- ⊃ Lack of labor protection (worker safety)
- ⊃ Poor traffic management and pedestrian facilities
- ⊃ Lack of safety nets and social support systems for families and young people

- ⊃ Inability to hold a job
- ⊃ Inability to earn sufficient income
- ⊃ Reduced ability of children to learn due to illness (for example, lead poisoning)
- ⊃ Risk of injury and associated income shocks
- ⊃ Poor education outcomes

Education

- ⊃ Constrained access to education due to insufficient school capacity in rapidly growing cities
- ⊃ Inability to afford school expenses
- ⊃ Personal safety/security risks deterring school attendance

- ⊃ Inability of public authorities to provide classrooms and schools of adequate size
- ⊃ Lack of safety nets to ensure ability to stay in school during family economic hardship
- ⊃ Insecure and unaffordable public transport

- ⊃ Inability to get a job
- ⊃ Lack of constructive activity for school-age youth, contributing to delinquency
- ⊃ Continued gender inequities

Land and housing in authorized areas are not affordable, so the poor typically build or rent on public or private property. Houses lack proper construction and tend to be in unsafe areas prone to natural hazards

- ⌘ Land policies do not make sufficient developed land available for the poor
- ⌘ Urban development policies are not conducive to regularization of tenure or providing other forms of tenure security in some unauthorized settlements
- ⌘ Inappropriate standards and codes make housing unaffordable
- ⌘ Regulations result in costly and cumbersome procedures to get registered or to obtain occupancy permits
- ⌘ Lack of access to credit

- ⌘ Evictions that cause loss of physical capital, damage social and informal networks for jobs and safety nets, and reduce sense of security
- ⌘ Inability to use one's home as a source of income (for example, through renting a room or creating extra space for income-generating activities)

Personal insecurity

- ⌘ Drug/alcohol abuse and domestic violence
- ⌘ Family breakdown and reduced support for children
- ⌘ Social diversity and visible income inequality in cities increase tensions and may provide the temptation to commit crime

- ⌘ Lack of employment opportunities, services, and assets (both communal and personal) produce areas within cities that are centers of crime and desolation
- ⌘ Lack of safety net policies and programs

- ⌘ Diminished physical and mental health and low earnings
- ⌘ Damage/loss to property and increased costs for protection and health care
- ⌘ Depreciated social capital, such as loss of family cohesion and social isolation

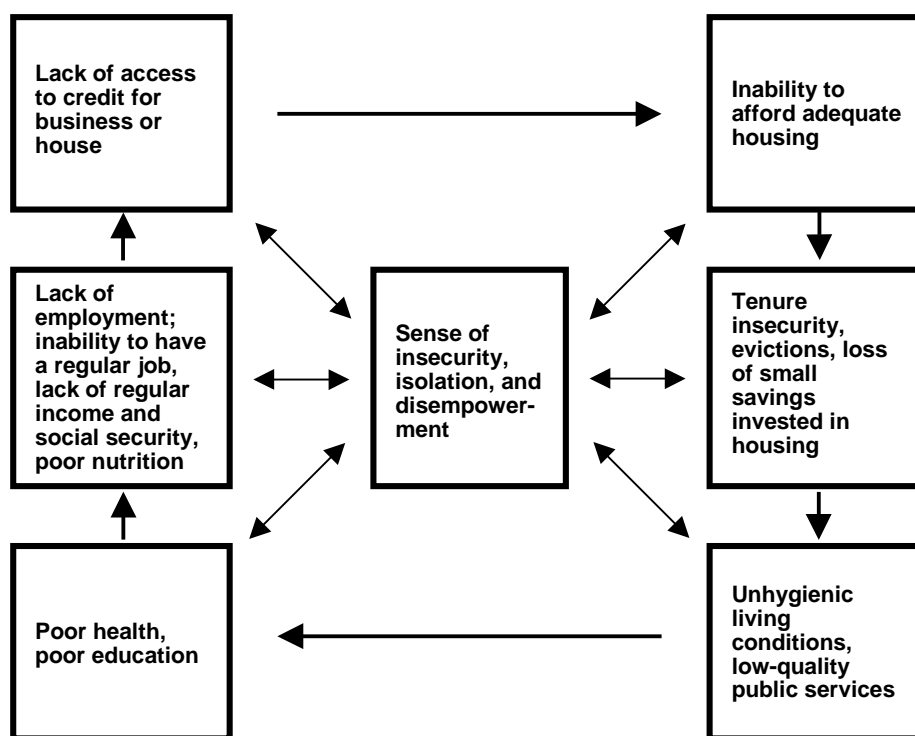
Empowerment

- ⌘ Illegitimacy of residence and work
- ⌘ Isolation of communities that are disconnected from jobs and services
- ⌘ Insufficient channels of information for obtaining jobs, learning of legal rights to services, and so forth
- ⌘ Not having the rights and responsibilities of citizens

- ⌘ Regulatory and policy frameworks for service provision, housing and land, and income-generating activities make the settlements and/or occupations of the poor informal or illegal," thereby denying the poor the rights of other urban citizens
- ⌘ Oppressive bureaucracy and corruption
- ⌘ Official or unofficial discrimination

- ⌘ Lack of access to urban services
- ⌘ Sense of isolation and powerlessness
- ⌘ Violence
- ⌘ Inefficient use of personal time and money to seek alternative forms of redress (for example, payment of bribes)

Figure 16.1. Cumulative Impacts of Urban Poverty



16.2.2 Context of urban poverty

There are a number of common misconceptions about urban poverty. It is important to correct these, and then to establish some basic premises about urban poverty:

Urban poverty is not necessarily an indication of economic failure. Urban poverty can to some extent reflect active rural–urban migration. This is because cities offer better opportunities for individuals to improve their welfare. Indeed, cities have historically served poor people as platforms for upward mobility. Efficient urban development can play a major part in combating national poverty, both by giving migrants the chance for a better life and—*even more importantly, from a country perspective*—by providing a marketplace where diversified industries and services become the engine of thriving national income growth. However, realizing the potential gains of rural migration to urban areas depends on how well cities and towns manage growth, provide good governance, and deliver services for households and private-sector enterprises.

Internal migration is not a major variable explaining urban poverty. Controlling migration is not a valid policy response to urban poverty. Studies of internal migration in many countries reveal that migrants are not necessarily among the poorest members of their original or receiving communities. Moreover, migration to cities from rural areas accounts for less than half of urban growth. In many countries, most urban growth is a result of two factors: natural population increases within cities, and the incorporation of formerly rural areas at the urban periphery. There are no simple relationships between migration and poverty. Policies that aim to restrict internal migration hurt the poor and the overall labor market and are usually ineffective (de Haan 1999 and 2000).

Urban conditions cannot be generalized across types of urban areas. Cities of different sizes tend to have different problems. Recent United Nations analysis of health indicators and of housing and basic services in large cities (more than 1 million population), small cities, and towns in 43 countries over the past two decades shows that welfare has been deteriorating for the residents of large cities—and particularly of fast-growing ones—in almost every region (Brockerhoff and Brennan 1998). This suggests that those

Table 16.2. Understanding Different Dimensions of Poverty: Asset Ownership and Vulnerability

Dimensions of poverty	Distinctive aspects of poverty in cities	Assets	Policy areas to strengthen assets
Income poverty	Dependence on cash for purchases of essential goods and services	Labor Productive assets such as housing	<u>Labor markets and employment</u> to support income-earning opportunities <u>Financial markets</u> to increase access to savings and credit schemes to improve their homes and businesses <u>Housing and land</u> to enable the poor to use housing as a productive asset <u>Health, nutrition, and education</u> to improve human capital (skills and health) for better jobs and income <u>Urban services</u> to increase the productivity of micro (and small-scale) entrepreneurs and street vendors
Education and health poverty	Residential environments are prone to industrial and traffic pollution due to juxtaposition of residential and industrial functions in cities Injury and deaths rising from traffic Industrial occupational risks—unsafe working conditions, especially for those in informal-sector jobs Overcrowded and unhygienic living conditions Constrained access to education due to insufficient school sizes in rapidly growing cities Inability to afford school expenses Personal safety/security risks deterring school attendance	Human capital	<u>Health, nutrition and education</u> to improve human capital <u>Urban services</u> to improve health, and access to education and health services <u>Environmental policies</u> to improve health and safety <u>Housing and land</u> to improve living conditions and thus human capital, particularly health <u>Labor and employment</u> for better working conditions <u>Social protection and safety nets</u> to increase the accessibility of the poor to health and education services
Tenure insecurity	Land and housing in authorized areas are not affordable, so the poor occupy land illegally and construct their houses without construction and occupancy permits	Productive assets such as housing	<u>Housing and land</u> to enable the poor to use their houses as productive assets and enable the poor to live in safe areas <u>Financial markets</u> to increase access to home ownership and tenure security
Financial insecurity	Dependence on cash income and lack of access to credits and safety nets	Human capital and labor	<u>Labor markets and employment</u> to support income-earning opportunities and decrease financial insecurity <u>Social protection and safety nets</u> to decrease financial insecurity <u>Financial markets</u> to decrease financial insecurity
Personal insecurity	Drug/alcohol abuse and domestic violence; family breakdown and reduced support for children; social diversity and visible income inequality in cities, which increase tensions and can provide the temptation for crime.	Social networks and household relations	<u>Social protection and safety nets</u> to support social capital (for example community-based organizations)
Social and political exclusion/ Disempowerment	Illegitimacy of residence and work Isolation of communities that are disconnected from jobs and services Insufficient channels to obtain information, for instance about jobs or legal rights Not having the rights and responsibilities of citizens	Social capital	<u>Social protection and safety nets</u> to strengthen social capital <u>Land and housing</u> to provide the poor with tenure security and legitimize their job and homes <u>Community-driven development</u> ^a to support empowerment of poor communities and provide them with citizen rights and responsibilities

a. Although Community Driven Development is not a policy area, but a model/tool of development, it is included in the above table since it is a primary means to empowerment of the poor communities

Box 16.1. Locating Urban Poverty in Brazil

A national urban poverty study in Brazil found that poverty is more severe the smaller the city size. This is true even in absolute terms; most of the urban poor live in small and medium-sized cities. At the same time, however, individual welfare outcomes in the bigger cities might be worse than income measures of poverty indicate (for example, due to the effects of crowding), suggesting that an increasing focus on smaller cities should not divert attention away from the persistent problems of the big cities, particularly in metropolitan peripheries. The study also confirmed high regional inequalities: poverty incidence (poverty headcount rate) was found to be higher for all settlement sizes in the northeast and northwest relative to other regions. In some city size categories, these two regions' poverty rates were higher than those in the rural areas of richer regions.

Source: World Bank (1999).

public policies that in the past seemed to favor certain cities are not counterbalancing the pressures of population growth on service capacities; nor are they addressing the failures of urban governance. Patterns also differ greatly by country (see box 16.1).

The concept of “city” is heterogeneous. Average welfare indicators presenting overall urban conditions cannot give a correct picture of poverty within a city. In cities, the poor and rich—with their different levels of assets—live together, and there are significant intra-urban differentials in social, environmental, and health conditions. Manifestations of poverty in urban areas can be strongly site-specific. It is important to know the social and physical conditions of different groups and neighborhoods within the city, the forms of deprivations that they suffer, and their numbers and characteristics. In Accra, Ghana, for example, death rates are as much as three times higher for those living in deprived urban areas than they are in other parts of the city. In São Paulo, Brazil, even noninfectious causes of death (chronic diseases, traffic accidents, homicides) have a much higher incidence in poor neighborhoods (Stephens and others 1997).

The urban poor is a diverse group. The urban poor comprise different groups with diverse needs and levels and types of vulnerability. These differences may be traced to factors such as gender, physical or mental disability, ethnic or racial background, and household structure; they also relate to the nature of the poverty itself (for example, long-term or temporary).

Urban poverty can be temporary or persistent. Poverty is a dynamic condition—people may move in and out of it, for example, due to major macroeconomic shocks. The economic crisis in East Asia in 1998, for instance, hit urban households especially hard, as demand for wage labor slackened and prices rose. The informal sector and the casual laborers are particularly vulnerable in times of economic recession. Increasingly, however, poverty in cities is found to be an entrenched, multigenerational reality for households that find their social and economic advancement limited even when household members have acquired basic education. In Brazil, for example, studies have found that the capacity for economic mobility of the poor has actually diminished over the past 30 years. Many families in Rio de Janeiro have been residents of slum neighborhoods for more than a generation (Perlman 1999).⁴

Poor urban governance and inappropriate policy frameworks contribute to the vulnerability of the urban poor. Corruption, inappropriate policies, and cumbersome regulatory requirements in cities lead to a variety of deprivations, such as inadequate infrastructure and environmental services, limited access to school and health care, and social exclusion. Better urban governance is therefore a necessary condition for empowering the urban poor and improving their opportunities and security.

Poor people are capable of helping themselves. They will successfully take proactive roles in development if they are allowed to participate in decisionmaking and are given the rights and responsibilities enjoyed by other urban citizens.

16.2.3 Assessing urban poverty

Income (or consumption) is the most frequently used proxy for poverty. Money-based poverty definitions and assessments provide a standard scale to compare different population groups. For comparisons across different types of settlements (such as between rural and urban areas), it is important that quantitative measures take adequate account of major differences in the minimum essential “consumption basket” and in the different prices faced for goods and services. Social indicators such as life expectancy and infant

mortality are also important. Definitions and benchmarks should allow comparison of the living conditions of different population groups. (Chapter 1, “Poverty Measurement and Analysis,” and chapter 7, “Participation,” provide guidance on relevant techniques.)

Assessing urban poverty nationwide is necessary to ascertain the overall level of poverty, as well as to understand differences in poverty trends within regions and within urban areas. Identifying such locational variations helps focus interventions on the cities or regions suffering the greatest levels of deprivation.

Local authorities need to assess the causes, characteristics, and location of poverty within their city in order to design appropriate poverty strategies and to make necessary regulatory changes. Up-to-date information on a city’s poverty and social development may be acquired through use of a city poverty assessment, a tool that uses various poverty indicators, such as those outlined in section 16.2.4 (Hentschel 1999; Moser, Gatehouse, and Garcia 1996a).

The components of a city poverty assessment are not unlike those of a national assessment. Various sources—including population censuses, household consumption surveys, public utility maps, and service records—can be used to structure an urban poverty profile. Governments and stakeholder participants should prioritize the indicators to be collected and used for producing urban poverty profiles at national and local levels. The analysis involves selecting the most relevant poverty indicators; determining at what intervals the indicators should be monitored; reviewing all available data sources; and selecting partners (for example, a national statistical institute) that can conduct data collection and possibly data analysis.

Differences both between and within cities need to be examined in constructing poverty profiles. National poverty assessments generally present a picture of differences among urban populations. For example, in Argentina a recent national poverty assessment demonstrated enormous differences among cities: while the share of population with unsatisfied basic needs was only 8 percent in the federal capital, the average for the 25 urban areas was almost 17 percent.⁵ In 14 of the 25 urban areas, the level of unsatisfied basic needs was shown to be more than twice the national average (World Bank 2000c).

Further, in a study undertaken by the city government of Buenos Aires, data on access to basic infrastructure were broken down into 21 districts within the city, revealing wide differences in access to services. In 13 of the districts in 1991, less than 8 percent of the population lacked basic services, but in four other districts that proportion was more than two or three times greater. In two districts in the south of the city, the basic needs of 20 and 26 percent respectively of the population were unsatisfied (World Bank 2000c).

A poverty profile at the city level provides a snapshot showing who is poor, where they live in the city, their access to services, and their living standards—a picture that contributes to the targeting of poverty measures. Table 16.3 shows the spatial distribution of urban poverty within Karachi.

The allocation of public expenditures among the urban population, particularly for infrastructure and social services, can also be examined. It is important to know the incidence of expenditures at both the national and city levels. Which cities, which type of households, and which areas in the city benefit from public expenditures? Incidence analysis by type of households requires the availability of household surveys. Incidence analysis by geographical location requires data from planning and budget offices asking where expenditures in the city are made and where taxes are raised (see chapter 6, “Public Spending,” for details).

In addition to providing a snapshot of poverty, it is important also to examine how city living conditions are changing, and therefore on whether or not the city is moving in the right direction. For example, poverty in the city may be low relative to that in other areas, but indications that it is increasing over time would alert policymakers and enable them to take preventative actions. Changes over time can also provide insights into the factors that help people grow out of poverty or fall into it. Measuring changes over time requires consistent definitions and measurement of poverty indicators.

Combining quantitative and qualitative analyses can help to capture the different aspects of poverty. Self-assessment methods, for example, reveal people’s perceptions of their own poverty and deprivation,

Table 16.3. Poverty Clusters in Karachi, Pakistan

<i>Zones</i>	<i>Poverty rate</i>	<i>Share of total poor households</i>	<i>Share of total population</i>
Old city	61	18	12
Old settlement	56	10	7
Korangi	49	12	10
Site	59	27	18
Serviced areas	54	11	8
Rural fringe	67	7	4
Total Karachi		16	41

Note: Figures are in percentages.

Source: Altaf and others (1993).

as well as their priorities for poverty-reduction measures (see chapter 7, “Participation”). Box 16.2 provides an example.

16.2.4 Indicators of urban poverty

Poverty diagnostics and the monitoring of results require appropriate indicators. Table 16.4 suggests a menu of indicators to assess and monitor both the visible causes and the policy-related causes of the various dimensions of poverty. Many of the indicators shown here, especially in the Impact/outcome indicators column, are essentially the same as those suggested in the Overview. Selecting indicators is an important basic task in strategy formulation.⁶ The chosen indicators should be used to assess the depth of problems over time and in relation to external benchmarks. Indicators need to be developed to facilitate stakeholder participation—indeed, the selection of indicators can be an essential focus of participation. Once validated, the selected indicators can be used to increase the accountability of the public and private sectors to poor people.

For assessing urban (and rural) poverty, and especially to identify policy interventions, it is desirable to collect indicators at the lowest practical level of aggregation. The indicators that derive from household survey data (such as data on expenditures and access to services) are often produced as averages for all urban areas of a country. However, this degree of aggregation often masks important differences among the different types of urban areas—for example, small or newly growing cities, compared with large and well-established cities (see also chapter 3, “Monitoring and Evaluation”). Differences between the residents of slum-type settlements and better-serviced neighborhoods in the same city can be dramatic. Identifying such differences—by mapping key indicators by location within cities or even by combining data sources with Geographic Information Systems (GIS)—can help target interventions to pockets of greatest deprivation.

Some of the indicators in table 16.4 are based on data collected by public agencies, including, for example, mortality and morbidity rates by disease, school enrollment rates, and utility connection rates. These can be good starting points for formulating a poverty-reduction strategy. But to identify better targeted policy responses, such data need to be differentiated by income group and/or by location within a city. Sample surveys can be a relatively quick and cost-effective way of refining general data to achieve such differentiation. The choice of indicators will vary with the urban poverty reduction strategy and should be decided by the stakeholders involved. A suggested minimum set of indicators that may be useful as basic instruments is suggested in table 16.4.

Box 16.2. Economic Crisis and Unemployment in Haiphong, Vietnam

The Haiphong city economy was badly affected by the Asian financial crisis and the deterioration of Haiphong port. Unemployment rose to 15 percent. Jobs are increasingly informalized. Rural–urban migration is continuing. The labor force is growing, but the technologically outdated industries and a shrinking service sector do not provide sufficient employment. In a city poverty survey, 42 percent of households rated unemployment as the most important factor leading to reduced living standards; 23 percent rated instability of income as most important. Not surprisingly, stable and secure employment was cited by 62 percent of respondents as the most urgent requirement to improve their living standards.

Source: Luan and others (1999).

Table 16.4. Indicators of Urban Poverty⁷

<i>Poverty dimensions</i>	<i>Intermediate indicators</i>	<i>Impact/outcome indicators</i>
Income	<ul style="list-style-type: none"> ⊃ Access to credit (for example, percentage of the target population using or eligible for credits from formal finance organizations, including for housing and productive uses) or the share of credits used by the target group in the total loans offered by formal finance organizations)—C,I * Shares of informal employment—C,I ⊃ Share of household expenditures on housing (lowest two quintiles)—U,C,I * Model shares of transport for work trips—C,I ⊃ Share of household expenditures on transport (lowest two quintiles)—U,C,I ⊃ Mean travel time to work—C ⊃ Access to electricity—U,C,I * Regulatory delays (such as licensing burdens on small and microenterprises [SMEs])—C ⊃ Land development controls—C ⊃ Coverage of social assistance—C 	<ul style="list-style-type: none"> * Poverty headcount—U,C,I ⊃ Poverty gap—U,C,I ⊃ Extreme poverty incidence * Female-headed households in poverty—U,C,I ⊃ Income inequality (Gini coefficient)—C,I * Quintile ratio of inequality—C,I ⊃ Unemployment rate—U,C,I ⊃ Housing price/income ratio—C
Health	<ul style="list-style-type: none"> ⊃ Share of household expenditures on potable water and sanitation—U,C,I * Percentage of households connected to water/sewerage—U,C,I ⊃ Per capita consumption of water—C,I ⊃ Percentage of wastewater treated—C * Percentage of households with regular solid-waste collection—C,I ⊃ Percentage of solid waste safely disposed of—C * Crowding (housing floor space per person)—C,I ⊃ Air-pollution concentrations—C ⊃ Shares of sources of household energy—U,C,I ⊃ Access to primary health services—U,C,I ⊃ Access to nutritional safety net—C,I ⊃ Share of household expenditures on health care (lowest two quintiles)—U,C,I ⊃ Share of household expenditures on food (lowest two quintiles)—U,C,I 	<ul style="list-style-type: none"> * Infant and under-5 mortality—U,C,I ⊃ Maternal mortality rate—U,C,I ⊃ Life expectancy at birth—U,C,I ⊃ Female-male gap in health (under-5 mortality rate by sex)—U,C,I ⊃ Malnutrition rate of children—U,C,I * Morbidity and mortality rates from public health/environment-related diseases (for example, diarrheal, respiratory, malaria)—U,C,I ⊃ Death rates by violence—U,C,I ⊃ Injury/death rates by transport accidents—U,C,I ⊃ Mortality rates by disaster—U,C,I
Education	<ul style="list-style-type: none"> * Primary and secondary school enrollment rates—U,C,I ⊃ Access to vocational training—U,C,I ⊃ Share of household expenditures on education (lowest two quintiles)—U,C,I 	<ul style="list-style-type: none"> ⊃ Literacy rate—U,C,I * School completion rates—U,C,I ⊃ Gender gap in education attainment—U,C,I ⊃ Child labor—C,I ⊃ Street children—C,I
Security —Tenure —Personal	<ul style="list-style-type: none"> * Population in unauthorized housing—C,I ⊃ Population living in precarious zones—C,I ⊃ Scope of disaster prevention/mitigation measures—U,C ⊃ Access to police and legal system protections—C,I 	<ul style="list-style-type: none"> * Percentage of households with secure tenure—C,I ⊃ Deaths from industrial or environmental disasters—U,C,I * Murder rates (and rates of other crimes, such as domestic violence, child abuse, robbery)—C,I
Empowerment	<ul style="list-style-type: none"> * Extent of public consultation in local government budget decisions—C,I ⊃ Participation of residents in political or community organizations—C,I ⊃ Discrimination in access to services/jobs—C,I ⊃ Access to telephones and internet—U,C,I 	<ul style="list-style-type: none"> ⊃ Citizen involvement in major planning decisions—C,I ⊃ Public access to information about local government decisions, services, and performance—C,I * Satisfaction with city services—C,I

* indicates suggested basic or “core” indicators

Indicator can be collected at different levels of aggregation: U = nationwide urban average or total (all urban areas combined); C = city-specific (citywide rate); I = intracity (for example, neighborhood/ward level)

Among the Interim Poverty Reduction Strategy Papers (IPRSPs), there is some variation in terms of the availability and level of disaggregation of poverty indicators, ranging from a general description of the rural–urban distribution of poverty to more specific disaggregation between regions and groups. IPRSPs from Guinea, Ghana, Mozambique, Madagascar, and Guyana present disaggregated information on the incidence of poverty. Most notably, Guyana’s report refers to differences not only between rural and urban areas, but also within the urban areas. Although the lowest incidence of poverty is in the urban areas, there are also pockets of above average rates of poverty in cities.

Where to get help in collecting and using urban indicators

Many cities are poorly equipped to collect and track urban indicators, including poverty data. This poses a serious obstacle to poverty reduction efforts. To establish sustainable indicator systems at the national or local level, significant capacity-building inputs are required. The Urban Observatory System is a worldwide information and capacity-building network established by UNCHS (Habitat) to help governments, local authorities, and civil society improve the collection, management, analysis, and use of information in formulating more effective urban policies (see technical note M.1). The UNCHS (Habitat) Urban Indicators Program has developed a system of comparative urban indicators (see <http://www.urbanobservatory.org>). Examples of these indicators include the number of households below the poverty line; informal employment; child mortality; school enrollment rates; access to potable water; and floor area per person. Several other efforts to collect data and to develop indicators about different aspects of urban development are currently under way (e-mail urbanhelp@worldbank.org for further information).

16.3 How to Select Public Actions to Address Urban Poverty

16.3.1 Wider impacts of urban poverty reduction

Should national and local policymakers design public actions specifically to address urban poverty? The benefits to be gained, both for the poor and nonpoor, include:

- *Reducing social inequality.* Social and economic inequalities, which are particularly apparent in urban areas and are growing in many cities (Bump and Hentschel 1999), can lead to social and political clashes. Poverty reduction tends to decrease inequality and thereby social tensions.
- *Avoiding large-scale health and environmental problems.* Health and environmental problems due to lack of proper services in slum areas can affect a whole city, as evidenced by urban outbreaks of cholera and plague in recent years (see box 16.3). Problems of inadequate water supply, sanitation, solid-waste disposal, and storm-water drainage—which affect the urban poor first—also create negative spillovers, such as the reduction and deterioration of the groundwater table and of surface water bodies.
- *Mitigating the impacts of disasters.* The poor in many developing cities live on marginal land prone to environmental hazards such as landslides and floods because they cannot afford safe and well-serviced sites. Giving poor people better settlement options can mitigate the impact of environmental hazards. Furthermore, measures that build the poor’s physical, financial, and social assets (for example, better social protection policies, better-quality housing, and stronger community organizations) can help them to handle the effects of disasters such as floods, earthquakes, and industrial accidents.
- *Supporting local economic development.* Helping the urban poor to improve their living conditions and human capital can support a city’s productivity and economic growth. Residents of slum settlements constitute a large proportion of the labor force in many cities—frequently in the range of 40–60 percent. Unhealthy living conditions, lack of access to education, domestic and community violence, and social exclusion decrease the productivity of the urban labor force and hence, impede economic activity. Policies and programs to reduce poverty can not only increase the productivity of the poor, but can also raise consumption, thereby boosting local economic development for the benefit of all. Cities that are inhospitable to business and that deter investors usually represent even worse prospects for their poorest residents.

Box 16.3. A Mayor’s Concern: Health Problems Pose Larger-Scale Externalities

One metropolitan mayor in Turkey criticized the regulations preventing service provision to *gecekondus* (informal settlements) and explained his own approach: “Obviously I bring water and sewerage to *gecekondus*. We have to bring services to places where people are living. Legally it is a crime, but I use my own initiative. If there will be an epidemic in one of the *gecekondu* areas, it will affect not only the whole city, but the whole region. Then it will be my problem again, and it will be a huge problem.”

Source: Baharoglu and Leitmann (1998).

- *Promoting national economic growth.* Measures designed to create healthy and productive environments for the urban poor should bring about the lowering of transactions costs and the provision of local public goods. Such measures are essential also to the functioning of cities as effective marketplaces for the national economy.

In general, poverty reduction strategies do have a rural focus. This is particularly true for Africa, where (with the exception of a few countries) urbanization levels are low. Some IPRSPs, including Cameroon and Mauritania in Africa and Cambodia in Asia, also devoted attention to their urban areas, taking into consideration their ongoing rural–urban migration, the role of cities as markets and service centers, and the fact that rural and urban developments are interlinked. Niger’s strategy paper specifically mentions the integration of rural and urban economies through the development of small and microenterprises and investments.

16.3.2 Policy frameworks for responding at scale

The different dimensions of poverty and their causal factors underscore the need for policy and institutional reforms at the national as well as at the city level in order to improve the conditions facing the poor. Programs that can directly benefit the poor in the short- to medium-term (described in section 16.3.3) may be scaled up. Policy and institutional reforms can promote the longer-term scope for poverty reduction by fostering the broad-based economic growth of cities through the development of efficient and well-integrated markets for labor, land and housing, and finance, and through effective public finance and responsive urban governance. The suggested roles of central and of local governments in these policy areas are summarized in section 16.3.4.

Many of the related public policy issues are also discussed part 3, “Macroeconomic and Structural Issues” (chapters 12 and 13); part 5, “Human Development” (chapters 17–19); and part 6, “Private Sector and Infrastructure” (chapters 20–25); thus, they are not included in the policy framework of this chapter.

Labor markets and employment

Employment opportunities for the urban poor can be constrained by a diverse range of factors, including poor macroeconomic conditions, regulatory constraints on small businesses, insufficient infrastructure, inadequate education and training, and bad health. A range of issues concerning labor-market regulations and legislation—for example, employment protection rules such as minimum-wage laws and hiring and firing regulations—can also have a counterproductive effect on the poor by increasing labor costs and thus constraining job opportunities (see chapter 17, “Social Protection”).

Possible policy interventions discussed here include support to small enterprises and microenterprises (including street vendors); increasing access to job opportunities; supporting residual subsistence (urban agriculture); supporting home-based income-generating activities; and safety nets and social insurance.

Support to small enterprises and microenterprises

For the urban poor, small enterprises and microenterprises can be an important source of income and employment (including self-employment) where no other alternatives are available. In many cities, a substantial share of the working population—sometimes as high as 50 percent—is engaged in microenterprise activity (see box 16.4).

Box 16.4. Informal Enterprises in South Africa

Toward the end of the 1980s, at least 30 percent of the total South African labor force was engaged in informal work. A distinction can be drawn between two categories of informal enterprise. In the first category are those survivalist enterprises undertaken by people unable to secure regular wage employment. The second category is that of microenterprises, which are very small businesses. Microenterprises often involve only the owner, his or her family members, and a few paid employees. These enterprises usually lack the trappings of formality (such as business licenses, formal premises, operating permits, accounting procedures), and most have only a limited capital base. Their operators typically have only rudimentary business skills. Nonetheless, many microenterprises have the potential to develop into larger and more formal business enterprises. The major focus areas for policy interventions that would allow this potential to develop include financing and credit, infrastructure and service provision, training, and urban management.

Source: Rogerson (1996).

Vendors stay small and mobile because they cannot afford the start-up capital to establish themselves in a permanent market where they are subject to inspection and where they have to pay rent, fees, and taxes. Many governments claim they want to stimulate microenterprises. Despite that, governments often respond to these businesses by sweeping mobile sellers off the street into back alleys, subjecting them to strict regulations, or prohibiting selling altogether. They may also deny microenterprises the rights and permits to occupy permanent spaces.

Various activities to improve business environments should be considered. Regulations on hygiene, license fees, and area restrictions should be reviewed. Do they help small enterprises and microenterprises to improve their services and operate in a better way? Or do these regulations constrain their activities and prevent them from operating effectively? Land-use decisions, such as inner-city revitalization projects, often can disadvantage small enterprises and street vendors. Regularization efforts, such as high license fees, can also be detrimental for small and microenterprises. In Kumasi, Ghana, the informal sector represents around 70 percent of employment. When the Metropolitan Assembly tripled license fees, it provoked a major confrontation with traders whose livelihoods were threatened by the fee hike (Devas and Korboe 2000).

Identifying and addressing constraints may be best approached by working jointly with traders. In Senegal and Nigeria, local governments and the different types of traders were brought together by an independent body to jointly analyze their problems and to come up with solutions. Working closely, the traders and the governments identified two crucial issues: the need to build additional cleaner marketplaces in areas where traders want them, and the need for traders to organize themselves for development and enforcement of marketing rules (Tinker 1997).

Providing advice and infrastructure can increase the productivity of microenterprises and their ability to operate in accordance with safety and hygiene regulations. It can also foster networking and subcontracting opportunities. Local authorities can also collaborate with large companies and help to initiate training programs. For example, a network of local service centers is planned in the Pretoria Witwaters-Vereeniging region, the economic hub of South Africa, to provide information and business-advice services, including training, mentoring, business plan preparation, marketing, and subcontracting support, to small and microenterprises.

National governments and/or city authorities may need to develop simple and appropriate taxation policies for small businesses and the banks that serve them. For instance, small enterprises and microenterprises should not be required to provide detailed invoices, since this may be beyond their capabilities.

A number of IPRSPs, including Sao Tome and Principe, Mauritania, Zambia, Kenya, Niger, Mozambique, Cameroon, Nicaragua, and Guyana refer to support for small and microenterprises as a means to tackle unemployment and poverty in urban areas, or as an approach to the integration of rural and urban economies. For example, Kenya's IPRSP refers to the growing microenterprise and small enterprise sector in cities, and envisages the development of the sector's technical and management capacity. An action plan is being designed to assist street vendors, who represent 70 percent of these microenterprises and small-scale enterprises. Zambia's IPRSP cited increasing access to job opportunities, both formal and informal, as a means of achieving urban poverty reduction. Increasing the productivity of urban microenterprises and the informal sector is identified as one of the four main pillars of the country's poverty reduction strategy. Nicaragua's PRSP declares that the generation of employment and income by small businesses,

particularly in towns close to urban centers, as a priority for economic growth. The Ministry of Development, Industry and Trade and the National Institute for Small and Medium Enterprises have jointly developed a plan to foster the competitiveness of small businesses.

Increasing access to job opportunities

Improving physical access to jobs and markets can be facilitated through better and more affordable transport services to low-income settlements (see chapter 22, “Transport”).

Land use and zoning decisions should allow poor households and firms to have spatial mobility. Such regulations should not oblige households to reside far from employment opportunities, and should also avoid creating incentives for businesses to locate to areas far away from their workers (see box 16.5).

Specific ways in which governments can improve employment opportunities for the urban poor include:

- ⊃ **Revising regulations that discourage employment.** For example, high payroll taxes and other charges can make formal labor contracts rigid and expensive. Niger’s PRSP refers to the revision of the labor code to increase wage flexibility and worker mobility in order to improve the business environment and to support private sector development.
- ⊃ Facilitating the flow of information on jobs and markets for products. For example, government may create publications and support NGOs and other organizations that provide such services (see also chapter 8, “Governance”).
- ⊃ Providing practical job training. The ability of the poor to benefit from growth requires good basic education and can be enhanced through job training programs. Cities can organize job training programs and workshops in collaboration with the private sector and central government to enhance the skills of the labor force.
- ⊃ Facilitating child care to enable women to work. Governments can initiate simple and cost-effective programs with the help of NGOs and community-based organizations (CBOs) and support them with modest subsidies. Cities must ensure basic hygiene and safety through advisory services and minimal regulations. One example of such programs is the community day-care centers started in Latin America. Under one approach, a woman from the community is selected to take care of a number of neighborhood children in her home. Usually parents and the government (central and/or local) share the cost of supplies and of the salary of the day-care provider. Food donations are often provided for feeding the children. The caretaker also receives training in basic hygiene and in early-childhood stimulation activities. The extent of program coverage varies widely between countries; in Latin America, for example, 3,500 children are served in Guatemala City, compared with 800,000 in the urban areas of Colombia. Little information is available on the costs and benefits of these programs, but the high demand for the program and its popularity in Latin America suggest that this can be a successful approach to providing child-care arrangements for working parents, and especially for single women (Ruel and others 1999).
- ⊃ Supporting the sectors that have the greatest capacity to generate employment. For example, the construction sector (including housing and infrastructure) accounts for between 40 and 70 percent of gross fixed-capital formation in developing countries. It also tends to be labor intensive (UNCHS/ILO 1995). But lack of financing mechanisms for both developers and homebuyers and undeveloped land markets can impede construction activity (see “Land, housing, and urban

Box 16.5. Zoning Decisions and Job Access

In Jakarta, Indonesia, the pattern of industrial growth is resulting in the movement of low-skill manufacturing jobs to distant suburban locations. Jakarta has already made street vending illegal by severely restricting the informal food-processing and service industry. Many low-income residents in Kampung settlements would be financially better off selling their land and moving to the suburbs where job and business opportunities are located, but the system of land rights prevents migration: since Kampung residents typically lack secure title to their land, they cannot sell it to developers for new uses. Many workers must therefore make a long commute to the suburbs each day, and many others remain under- or unemployed. The result is a no-win situation for both workers and the city.

Source: World Bank (2000b).

services” subsection under section 16.3.2). Governments can also support labor-intensive construction methods, such as self-help housing. Support for formal and self-help construction can boost employment and investment (Gilbert 1992). Georgia’s IPRSP aims to decrease unemployment both by strengthening the housing and construction sectors and supporting small enterprises and microenterprises. Cambodia’s IPRSP similarly sets as a priority job creation for surplus rural labor migrating to the cities, specifically supporting labor-intensive manufacturing such as garment production; by attracting labor from rural areas, this plan would increase rural productivity as well as urban employment.

- ***Creation of short-term employment***, for example, through public works programs. Such programs typically address urban infrastructure deficiencies through small works investments (see “Land, housing, and urban services” subsection under section 16.3.2). Although the jobs created are only short term, such programs provide temporary supplements to income and support small-scale entrepreneurs. Mauritania’s IPRSP provides an example of commitment to small public works. It calls for new urban infrastructure programs to be carried out using labor-intensive activities. The stated goal of these programs is to improve living conditions in poor neighborhoods while at the same time creating jobs and temporary incomes for the urban poor.

Senegal’s 1989 Public Work and Employment Project was designed to address an urgent unemployment situation in an innovative way, by setting up a public works contracting agency (known as an AGETIP, Agence d’Execution de Travaux d’Interet Publique) with not-for-profit status. (See also technical note M.3: table M.5 and box M.23.) Senegal’s AGETIP has gained success through its businesslike way of undertaking small public works. The first operation created a significant number of temporary urban jobs in the construction sector: about 8,700 person-years as compared to the 7,000 estimated at the time of appraisal. Over a three-year period, the AGETIP executed more than 400 microprojects, such as roads, sidewalks, drainage, schools, clinics, and other public buildings. Ninety percent of the projects cost less than \$200,000 and were built by small and medium-sized enterprises. Operations based on similar principles were also undertaken in Benin, Angola, Mauritania, Burkina Faso, and Mali. Stakeholders evaluating these projects noted their favorable impact on employment, with all groups reporting a high impact also on income and local capacity building. The projects quickly created many jobs, most of them benefitting unemployed urban males. However, the jobs that were created were mostly temporary (Frigenti and others 1998).

Supporting residual subsistence (urban agriculture)

The poor often diversify their income sources. Common strategies among the urban poor include receiving food support from their rural place of origin, using their homes as a work place, and engaging in urban agriculture. Studies estimate that as much as 40 percent of the population in African cities and up to 50 percent in Latin America are involved in urban agriculture. Many of the producers are women (Ruel and others 1999).

Urban agriculture enables the poor to meet their subsistence needs and can provide extra income. It can also improve nutrition and health. Many municipalities, however, discourage or prohibit urban agricultural activities, primarily because of the associated health problems that may be caused by parasites, pests, and waste disposal. For example, in Nairobi, Kenya, livestock and horticulture activities within the city are illegal. In Kampala, Uganda, land-use and health laws forbid urban agriculture. More than one-fourth of the city’s farmers face harassment by property owners and eviction threats from the city council. Urban agriculture has nonetheless been quite successful in some countries, and in recent times some governments have come to acknowledge this. For decades, city authorities in Lusaka, Zambia, enforced laws against crop production in the city. However, in 1977, faced with serious economic decline, the president urged urban dwellers to grow their own food. The Lusaka City Council stopped enforcing the anti-urban agriculture laws and government stores subsidized seeds for fruits and vegetables (Ruel and others 1999).

Frequently urban farmers do not own the land they farm; rather, they use public space or privately owned vacant lots, with or without the owner’s permission. Land owners and farmers may enter into informal agreements, but because of inadequate laws governing tenancy, lease, and appropriate use,

private land owners do not formally lease their land. With low tenure security and questionable legality, the farmer therefore is not motivated to invest in the land.

The larger picture is complex. Because governments do not recognize the legal existence of urban farming, planners often do not think about how to provide city farmers with water and drainage infrastructures. Governments also make little provision for research and the extension of urban farming techniques. For example, Tanzania's National Urban Water Agency has strongly opposed the use of water for urban farming, imposing a fine on such use. The situation is even more difficult for women, who face both legal and cultural biases against owning or even leasing land.

Municipalities can remove obstacles to urban agriculture by reviewing land-use planning and zoning decisions and adopting more flexible regulations. Regulations may need to be reviewed for relevance within the city's economic and social context. In cities where urban agriculture is a common subsistence strategy, more flexible regulations could help the poor develop their efforts at agriculture rather than prohibit them. Municipalities should also provide basic infrastructure and develop and implement environmental/public health measures against parasites and pests. At the same time, promoting and coordinating access to information on cropping patterns, use of fertilizers, and access to credits and marketplaces could support poor urban farmers. Efforts of this nature were made in Dar-es-Salaam, Tanzania, and delivered by NGOs and cooperatives; and in Lota, Chile, support for urban agriculture has led to a 30 percent increase in family income (Wegelin and Borgman 1995).

Supporting home-based income-generating activities

Like urban agriculture, home-based production (cottage industry) is also an important income-generating activity among the poor. Not only can housing space be used to earn rents, but homes also can accommodate commercial and manufacturing activities (Gilbert 1992; Kellett and Tipple 2000). Planning policies and land-use regulations tend to be based on the principle of maintaining the separation of housing and productive activities. City authorities often prohibit cottage industry to avoid health and safety hazards.

In view of the potential importance of home-based production for the urban poor, regulatory frameworks could be adjusted to permit such activity while maintaining safety. They could also support the provision of necessary infrastructure. City authorities could provide:

- ⊃ infrastructure services (electricity, telecommunications, water, and sanitation) that would increase the efficiency and productivity of home-based activities;
- ⊃ information and advisory services relating to potential markets for the products made, and provide access to credit for small and microenterprises;
- ⊃ information and training on safety measures and labor rights;
- ⊃ practical vocational training courses; and
- ⊃ basic health care.

These points are important to stimulate economic activity and to prevent urban hazards. But they have another value. Home workers are often isolated and invisible, and fall prey to exploitation by factories and middlemen. A sound pro-cottage industry framework would overcome such exploitation (Kellett and Tipple 2000).

Safety nets and social insurance

Social insurance benefits include pensions and unemployment insurance. Safety nets/social assistance interventions include various cash and in-kind transfers programs that supplement income, such as child feeding and vouchers for schooling and housing (see chapter 17, "Social Protection").

A major issue for the urban poor is that they are usually self-employed, often in unregistered (informal sector) activities, or that they have only occasional wage employment. Social insurance benefits that depend on workers' contributions rarely provide adequate income replacement for workers in the informal sector or for workers whose employment in the formal sector is occasional. This underscores the importance of measures (as noted above) to better integrate the poor into the

regular labor market as registered small firms and employees, so that they can have basic benefits and legal protection. In the absence of such measures, workers must rely on safety-net interventions that supplement their income through a variety of cash or in-kind transfers. Social assistance programs are often financed by the national government but administered by local government. Capacity building of local governments (see section 16.3.2) therefore is also important to ensure the effectiveness of these programs. NGO programs could also be fostered by government to assist the poor who remain outside formal employment.

Land, housing, and urban services

The vulnerability of the urban poor is exacerbated by the inadequate provision of basic public services, as well as by the policy and regulatory frameworks that govern land and housing supply and property rights.

This section discusses policy reforms in the areas of tenure security and property rights; land and infrastructure development regulations; and planning procedures, building codes, and construction permits. Mauritania's PRSP comprehensively considers urban poverty. It cites three factors as the primary causes of the insufficient provision of services and the illegal occupation of urban land: the inadequate regulatory structure of urban development; insufficient coordination between various actors (that is central government, local communities, and professionals); and the inadequate capacity and tools of urban planning. Honduras' PRSP, in referring to settlements prone to environmental hazards in and around cities, indicates that the problem is exacerbated by poor urban planning and land shortages.

Tenure security and property rights

Illegal occupation of public or private land is often the only option for most of the urban poor. Lack of secure tenure is therefore a common problem in many low-income countries. In transition countries, illegal occupation is not a common practice (except in Tirana, Albania) but unclear property rights remain a serious problem. Furthermore, in these countries, widespread public ownership of urban land and vague transaction rules constrain land transactions and thus limit individuals and small-scale developers from accessing urban land. Armenia is one such example (see box 16.6)

Public authorities need to establish systems to provide tenure security—for example, freehold titles or use rights—that take into account their country's culture and the particular circumstances of its different communities. The aim should be to incorporate common practices into a formal system (see box 16.7). Should the majority of land acquisition practices and tenure systems not fit into the existing legal system, the regulatory and policy frameworks should be adjusted to incorporate those practices.

Systems need not be restricted to freehold titles, but can be flexible. For example, protected-use rights can be gradually upgraded to full ownership rights. In general, public authorities need to establish and publish guidelines for property registration and development, and property rights should be designed to allow the free transaction of property. Owners should also be allowed to use their property as collateral.

Box 16.6. Land Supply in Armenia

More than half the land in the major cities of Armenia is controlled by municipalities. This restricts land choice and acquisition, distorts real estate prices, and prevents the development of land markets. Mechanisms through which municipal land and other publicly owned real estate are made available are murky, and the authorities have been conservative in privatizing urban land stock. When the new land code was passed in 1991, it allowed only plots of 400 square meters or larger to be privatized and registered to owners—a size well above that most of the populace could afford.

Urban housing is the prime responsibility of the Ministry of Housing and Urban Development, but urban land is still under the responsibility of the Ministry of Agriculture. This confusing situation often leads to delays and gaps in decisionmaking and implementation regarding urban land matters.

Source: Informal sector note on Armenian Housing and Earthquake Zone Issues. World Bank (1997).

Box 16.7. Legalization of Tenure in Peru

In the mid-1980s in Lima, Peru, there were an estimated 320,000 lots located in *barriadas* (illegal squatter settlements), about half of which were registered. To develop the housing market by integrating informal cities, a large-scale “system for regularization of ownership” (PROFORM) was set up. This was a departure from the generally accepted thinking whereby regularization equals individual incorporation into the formal sector. Instead, PROFORM attempted to establish a link between informal practices and the legal system. Approved in 1988 by legislative decree, this revision of the legal framework integrated certain informal standards that defined relationships within the sector. It also created the *Registro Predial*, where regularized urban and rural plots are registered.

The principles of the system are as follows:

- a) Proof of property is recognized, as in the informal sector, through such criteria as permanence of occupation, electricity bills, and census data. This allows for the transmission, transfer, and mortgaging of registered plots. Various laws were brought under one standard and the bottlenecks of regularization procedures were eliminated.
- b) A single body is in charge of regularization, the sole objective of which is to give titles and register property.
- c) The procedure integrates communities, rather than individuals. The new system verifies using private lawyers and engineers rather than public servants. It also involves the community for information gathering, and introduced a simple but efficient accounting system.

By June 1995, official figures indicated that more than 220,000 plots had been registered through this procedure.

Source: Durand-Lasserve and Clerc (1996).

It may often be possible to sell occupied public lands to resident communities or individuals, although such initiatives may require the involvement of community groups to prevent exploitation through illegitimate claims by people who have not established residence on the land in question. For example, the National Community Mortgage Program of the Government of the Philippines made it possible for squatters to buy the land they had occupied for an extended time.

A number of PRSPs examine the use of property rights as a means of reducing the vulnerability of the poor. They often envisage improving legal frameworks and registry systems, but fewer make specific reference to the urban context of property-rights reform: Mauritania, Bolivia, Guinea, and Kenya do focus on tenure security and property rights in cities. Bolivia’s PRSP indicates that the lack of title deeds, especially in peri-urban areas, is an important factor increasing the vulnerability of the poor, and declares that steps will be taken to update urban property cadastres and real-estate registry systems to establish and improve the registration of urban property, and to establish a municipal appraisal system. Kenya’s IPRSP indicates that a Presidential Commission is examining the country’s Land Law. It also states that about 30,000 plots will be apportioned under the squatter regularization program to provide tenure security, and that some 300,000 titles will be issued following adjudication/settlement procedures. An overall reform of the legal framework also is envisaged, with particular reference to the ownership rights of women.

Land and infrastructure development regulations

Several factors may limit urban land supply. These include extensive public ownership of land and unclear land transfer procedures (most common in transition countries); unrealistic standards for land and infrastructure development; complex procedures of urban planning; and unclear responsibilities of public agencies.

Regulations both at the national and city level should support:

- *Transparency in land provision*, by establishing a clear division of authority among public agencies and simple rules and mechanisms (which are accessible to all), and by establishing private property rights.
- *Easy market transactions* through clear and simple sales and registration procedures and taxation policies. In some countries, high rates of sales taxes constrain official transactions, which lead to illegal transactions. This perpetuates the lack of clear ownership.
- *Better utilization of public land while improving access for the poor* through practical and transparent methods (see box 16.8). Public land owned by national authorities, such as treasury or crown land, can be a major problem since cities may not have planning or development rights to such land. In many countries, including Pakistan, Turkey, and Egypt, such land is often occupied and subdivided by informal agents and sold to the poor.

Box 16.8. Government-Promoted Squatting in Pakistan

In 1986, the Hyderabad Development Authority (HDA) began investigating the low occupancy rate of government land in the city and the functioning of the informal housing sector. As a result of its findings, HDA decided to carry out an experiment in government-promoted squatting. HDA adopted a strategy of using *dalal* (private informal entrepreneurs) to provide the poor with plots at an affordable price. State officials, police, and other relevant agencies gave tacit recognition to the *dalals'* informal occupation of land; the *dalals* subdivided the occupied land, to the extent permitted by government planning regulations. Some plots were held for speculation and sold for commercial use, thus cross-subsidizing the price of plots for low-income customers.

The plots thus provided to the poor were regularized, though initially unserviced. The procedure began with the earmarking of an open plot as the “reception area.” Families in immediate need of shelter were required to begin by bringing their belongings to the reception area, where they had to erect a makeshift house. Later they were moved to a plot of their own, measuring 80 square meters, where they could erect a more permanent shelter. The *dalal* have not been completely replaced, but they continue to provide construction materials and advisory services and to locate and move people to the site. HDA has taken over the role of the subdivider. It also has taken over the role of lobbyist. In illegal subdivisions, settlers often must pay large sums of money to lobbyists working on their behalf; now HDA provides that service at no charge; furthermore, HDA as a government agency is better placed than any private operator for this role.

Source: Durand-Lasserre and Clerc (1996).

- *Increased access to serviced land*, by reassessing unrealistic standards and regulations that impede entry (see also chapter 23, “Water and Sanitation”). In the state of Uttar Pradesh, India, for example, the minimum standards established under the Regulations of Building Operations Act specified minimum plot sizes and infrastructure standards that only the top 5 percent of households could afford (World Bank 1993). Infrastructure standards should be made relevant to the effective demands and incomes of the poor. Households can make their own tradeoffs between the cost and quality of services.

National poverty reduction strategies often do recognize inadequate basic infrastructure, particularly in slums, and seek to increase water and sanitation services to alleviate poverty in cities. Countries where rural–urban migration is increasing the pressure on urban services—including Albania, Mauritania and Cambodia—plan to increase the supply of services to squatter settlements through community participation and labor-intensive infrastructure projects. These are appropriate responses, but it is also vitally important to revise infrastructure standards and evaluate them against the needs and affordability of the poor to ensure that such programs are replicable at larger scales. Burkina Faso's PRSP calls for simplified water-supply systems in secondary cities and seeks a regulatory framework to cover all the principles of service provision, including standards and rates. Another example comes from the Philippines where, in 1982, legislature enabled the liberalization of land development and building standards. This allowed both the National Housing Authority and private developers to undertake subdivision projects with smaller plots (Durand-Lasserre and Clerc 1996).

Planning procedures, building codes, and construction permits

Complex planning and construction permit procedures, and unrealistic building codes constrain the supply of land and housing. Some suggestions:

- Policies at the central level should set out a broad framework, and more detailed planning policies should be designed at the local level. For example, density levels in different parts of a city and infrastructure standards should be decided at the city level, in consultation with local communities. Lengthy and complex planning procedures also delay the provision of serviced land and housing production, leading to increases in land and housing prices.
- Building standards, construction material standards, and codes should allow for some flexibility. Regulations that can be eliminated without jeopardizing safety should be eliminated in order to keep construction costs down.
- Procedures to apply for and acquire construction and occupancy permits should be simplified, making them accessible to poor people with limited education and time.

Financial markets

Lack of access to credit increases the vulnerability of the urban poor by constraining their ability to improve their homes, which in some cases is also their workplace and the venue of any new businesses. Credit underwriting is a major problem since the poor do not have property to use as collateral and often lack regular incomes.

It is also very hard for the poor to accrue savings, in part because they typically have little access to formal savings programs. In many developing and industrial countries, banks do not perceive the poor as worthwhile clients, and in some countries, discrimination is blatant. Banks are often located so that they are out of reach of the poor, for example, and their treatment of potential clients who are poor can be openly discriminatory. The ability of NGOs or other microcrediting organizations to collect savings and to mobilize other private and public funds is also limited. The poor therefore tend to accumulate savings in inefficient ways, such as by participating in informal credit unions and in rotating savings and credit systems, which yield very low or no interest, or by buying tradable goods.

Interestingly, experience shows that once banks begin servicing savings accounts among low-income communities, they become more willing to make credit available to the poor. This underscores the need for regulatory and policy changes in financial systems to overcome these bottlenecks and allow the poor to obtain credit and other services. (The strengths and weaknesses of microcredit for home improvements and home ownership are discussed under finance-based programs in section 16.3.3). There are a number of possible policy interventions that can be instituted to open access to financial services to the poor (see also section 15.3.5 in chapter 15, “Rural Poverty”). These include:

- ⊃ Promoting microenterprises by encouraging financial organizations to lend to them.
- ⊃ Supporting local NGOs, and banks in making credit available by providing seed funding and/or guarantees.
- ⊃ Monitoring and regulating the performance of financial intermediaries who collect from the general public.

Similarly, governments need to consider a number of regulatory changes to improve the access the poor have to financial services. Some suggestions include:

- ⊃ Regularize tenure; develop use rights or other forms of tenure security (in cases where it is not possible to assign legal ownership) to facilitate credit underwriting; and make the necessary changes in collateral law and related regulations so that use rights can be accepted.
- ⊃ Review the licensing criteria—and avoid strict standards—governing the authorization of NGOs and private intermediaries to collect savings and extend credits. Allow NGOs and financial intermediaries that meet the standards for prudent savings mobilization to take deposits from borrowers and from the general public (Ferguson 1999).
- ⊃ Apply liberal interest regimes to enable financial intermediaries to cover their costs.

Several poverty reduction strategies seek to improve the access of the poor to financial services, without making the distinction between rural and urban areas. Almost all the strategies emphasize the need to develop credit facilities, rather than to increase savings schemes for the poor. The IPRSPs of the Central African Republic and Guyana were exceptions, referring also to savings services. Malawi mentions an ongoing program to (1) issue land tenure to residents of low income areas; (2) establish a discount facility to serve housing finance institutions that lend to poor people, and (3) establish a mortgage bank to improve the access of low- and middle-income people to housing.

Public finance

The policy agenda pertinent to urban poverty reduction strategies reaches into a number of areas. These include cost recovery, tariffs, and subsidies (see also chapter 20, “Private Sector and Infrastructure: Overview”; chapter 21, “Energy”; and chapter 23, “Water and Sanitation”); and decentralization and intergovernmental relations (see also chapter 8, “Governance”).

Cost recovery, tariffs, and subsidies

Poverty-oriented programs should not aim to achieve full cost recovery from beneficiaries—that would defeat the underlying redistributive objectives. But programs do need to be financially sustainable, and one way to achieve this—cost recovery—is often not explored to its full potential. Cost recovery may be achieved by utilizing a combination of resources, including contributions from beneficiaries.

The rationale behind financing should reflect first of all the nature of the service—that is, whether it benefits the community or the individual. Users can be expected to pay for private goods and services such as land title, electricity connection, and housing improvements. Responsive service delivery and convenient payment options are among the preconditions for fee collection. When programs work with the lowest income groups, it may become necessary to subsidize individual households that are provided private products and services. On the other hand, public or communal services where the benefits of the service are confined to a local area—such as storm drainage, urban roads, and footpaths—are more appropriately financed by general taxes or by beneficiary taxes, such as property taxes. The public sector also plays an important role in funding activities that have major externalities (spillover effects on the general population), such as public health, environmental cleanliness, and disaster protection.

Public actions to exploit available financing options include:

- ⊃ **Taxes, tariffs, and user fees.** Consumer payments of tariffs and user charges for the infrastructure services that they use should cover as much of the investment costs as possible. Households can be charged property taxes, or ground fees/use-right fees once freehold ownership or any other form of tenure security is issued for the land that they occupy. Payment procedures should be simple and flexible.
- ⊃ **Interest rates.** These must not be set too low, because very low or negative interest rates deplete available funds, making programs financially unsustainable, and because they turn credit schemes into lotteries that benefit only a few fortunate households.
- ⊃ **Targeted subsidies.** Even when costs are kept low by appropriate codes and standards, the lowest income groups may not be reached. That is when it becomes necessary to provide essential services through subsidies. These should be transparent and clearly targeted to those in need. Transition economies have inherited a legacy of inefficient subsidies. In Latvia, for example, 70 percent of households were receiving rent subsidies of between 10 to 15 percent of their income. Cumulatively, these rent subsidies were more than double the amount of GDP allocated to housing investment, rather than being a fraction of housing investment as in OECD countries. Housing subsidies in Latvia were also nontransparent and were regressive in distributive impact because so many households benefited (Buckley 2000). Demand-side housing subsidies based on income eligibility criteria, in the form of vouchers permitting households to purchase (or rent) housing units in the market, are generally more efficient than supply-side subsidies (for example, state-subsidized housing construction programs).

Decentralization and intergovernmental relations

Unclear responsibilities and conflicting incentives within intergovernmental fiscal relations are among the major causes of failure in service provision. Whatever the motivating forces behind political decentralization, in practice it does not necessarily improve service delivery, especially when intergovernmental fiscal relations do not support clear accountabilities, as shown by experience in several countries. In Hungary, the concession of local political autonomy preceded the separation of local budgets from the central government budgeting system (Bird and Wallich 1992). As a result, local governments have lacked a financially sustainable revenue base, so that the social safety net, for which local governments bear major responsibility, risks being inadequately financed. Another example is Brazil, where decentralization took the form of a substantial increase in revenue sharing and in the taxing powers of local government (Shah 1991). It was not, however, accompanied by a corresponding delineation of local expenditure responsibilities. Thus, although local governments have more money to spend, they are no more accountable for the quality of their services than they were before the reforms. And, in Ghana, political decentralization was not accompanied initially by a commensurate transfer of significant decisionmaking authority to local government. The national government continues to appoint

the municipal executive and the heads of municipal departments, and effectively continues to control local spending decisions (World Bank 1995a).

Various elements of intergovernmental relations that may warrant review include the current or proposed assignment of functions, sharing of revenues, and borrowing powers. Decentralization should not shift the responsibility for the provision of basic services to local governments without providing a corresponding resource base. But while central governments may find it more difficult to decentralize the revenue side of budget than the expenditure side, it is important that both be done, since shifting central government budget deficits to local levels would merely exacerbate service failures. Stability in revenue sharing is also important. Many national governments decrease transfers to local governments when confronted with national budget deficits. This kind of instability makes investment planning at the city level difficult.

While intergovernmental transfers are important, the mobilization of local resources through locally based taxes and fees is also needed to alleviate service deficits. It is important that local authorities increase local revenues in progressive ways that permit redistribution to lower income groups. One of the best means for this is through property taxation, and local authorities must be given the authority to levy taxes—they must also have the knowledge and political will to use that authority appropriately, however.

Reforms may also be needed to provide municipal governments with access to credit for financing capital investment. In addition to improving the allocation of grants and revenues to create sound incentives for responsible municipal performance, finance institutions (including public finance organizations) should increase loan financing as a replacement for grant financing as local authorities become creditworthy. Municipal credit institutions, or municipal development funds (MDFs), are one important source of financing (see section 16.3.3 and technical note M.3).

Several poverty reduction strategies, including those for Honduras, Nicaragua, Ghana, Senegal, Niger, and Mauritania, refer to decentralization by indicating that legal frameworks have already been changed to devolve responsibilities and rights to local authorities. But current assessments point to a lack of financial and human resources at local levels, meaning capacity-building programs and resource mobilization plans are required before decentralization can be fully implemented.

Urban governance and capacity building

Designing appropriate policy frameworks for urban poverty reduction and implementing them fairly and effectively requires good urban governance (see also chapter 8, “Governance”). Policy actions for good urban governance include accountability and responsiveness to the public, anticorruption policies and practices, and measures to build capacity.

Local as well as central authorities should be accountable to the general public. Authorities must consult with the public about their needs, requirements, preferences, and satisfaction with services. One example of this occurs in Seoul: every Saturday, the city’s mayor and top administrators make themselves available at citizen complaint centers for a “day of dialog with the citizens.” This sort of engagement can help governments prioritize public expenditures (see also box 16.9).

It is very important to oversee financial aspects of urban government operations. Corruption is inefficient and inequitable—its costs are disproportionately borne by the poor. Governments can take various steps to reduce the scope for corruption, including public disclosure, more transparent rules, and privatizing the provision and management of services (see chapter 8, “Governance”). In some country contexts, a strong central-audit function can bring to light information that increases accountability. In France, for example, as decentralization has proceeded, auditing local government contracting has proved a useful tool in avoiding abuses by local authorities.

However, audits function primarily as an input to a broader system of accountability. Unless the government system clearly articulates the public interests that are meant to be served by the audit function, the discipline that audits are supposed to impose can easily be subverted (World Bank 1995a).

Box 16.9. Developing Communication Channels with Citizens

In Tijuana, Mexico, the city's rapid population growth, accelerating environmental deterioration, and the difficulty in enhancing tax yields from its citizens led the mayor to take a boldly innovative approach to change. His administration developed an Urban Activation Plan, the largest integrated plan for priority infrastructure investments ever proposed by a municipality in the state. The government of Mexico was to fund 25 percent of the cost, the business sector 15 percent, direct beneficiaries 20 percent, and the community at large the remaining 40 percent. The city held a public referendum (Consulta Publica) to find out if its citizens were willing to pay their share of the cost. The referendum passed with 66 percent of the vote.

Source: The Urban Institute (1995).

PRSPs generally refer to anticorruption efforts at the national level. Nevertheless, most of them do not examine the requirements necessary to implement similar efforts at local government levels.

Local capacity building is needed for several reasons. Municipalities may have relatively little experience with participatory planning; decentralization and the consequent new responsibilities are major challenges for local authorities; and a lack of experience and management capacity can also impede their struggle against poverty. By the same token, many NGOs are also not equipped to deal with the public authorities.

Capacity can be built by training local personnel and community leaders and giving them more access to national and international experience; increasing the exchange of information among international, national and local organizations and communities (for example, through professional associations of local governments and NGO networks); through direct experience; and by better management of information. The establishment of knowledge networks to enhance learning and institutional memory that can be shared by public and private sector and community agents should be a part of capacity-building strategies.

Most poverty reduction strategies do refer to capacity building at the local level for authorities and NGOs, and to the need for participation of civil society. Their plans or proposals, however, do not convey any details of methods which need to be developed to enable implementation.

New planning and management techniques, such as action planning, can be effective as part of the effort to build capacity for participation (see subsection "What can cities do to reduce poverty" of section 16.3.4). Support should be given to communities and community-based organizations to facilitate access to information and to interact with public agencies (see box 16.10). Encouraging the urban poor to organize (for example, through citywide slum associations) can help them to exchange experiences and to negotiate effectively with public authorities and the private sector, including landowners. (See also chapter 7, "Participation.")

The Habitat Agenda adopted at the second United Nations Conference on Human Settlements in Istanbul in 1996 commits UNCHS (Habitat) to work toward the establishment of good urban governance. The agenda also initiated the Global Campaign for Good Governance, which is designed to promote accountable and transparent urban governance, which responds to and benefits all sectors of society, particularly the urban poor, and which strives to eradicate all forms of exclusion.⁸

Box 16.10. Capacity Building of Community Development Councils (CDCs) in Sri Lanka

Elected community development councils (CDCs) were introduced in the mid-1980s in Sri Lanka to promote participation and to encourage local government to interact with communities. However, lack of a clear mandate and capacity issues made institutional and functional endurance impossible. Political problems, both local and national, further hampered the CDCs.

A pilot scheme to upgrade low-income settlements set a number of primary objectives, among them building community capacity and giving communities access to public organizations. This plan strengthened the positions and roles of the CDCs. Japan Overseas Cooperation Volunteers (JOCV) formed a team with a local NGO to activate the CDCs. The independence of JOCV from local political pressures was one of the key reasons this effort succeeded. At the first pilot site, Badowita, the CDC developed a water supply system, drainage system, and sewerage scheme for the site's 1,000 households. The community contributed to the capital investments. Based on the success of this first pilot project, the CDC involved has since become active in other upgrading projects and in assisting other CDCs and community-based organizations.

Source: Japan Bank for International Cooperation, Sri Lanka Office.

16.3.3 Interventions at the project/program level

Before proceeding to design projects and programs to reduce urban poverty, it is important to understand the impact of existing interventions. Then a menu of possible actions can be reviewed in this light.

Monitoring and evaluating existing projects and programs⁹

We need to assess and monitor the impacts of project results for several reasons: to see if programs reach their intended beneficiaries, to determine if resources are being spent efficiently; to understand if the program or project could be better designed to achieve its intended outcomes. Monitoring and evaluation provide feedback, allowing policy makers and practitioners to design better and more effective interventions that yield more successful results and use scarce resources more efficiently. One of the truths of the design and implementation stages also holds firm for monitoring—beneficiaries must be included whenever possible.

This section highlights issues to be taken into consideration in monitoring and evaluating the effectiveness of urban projects or programs in terms of their impact on the poor.¹⁰ It begins with a list of basic questions and key considerations, followed by an example of the monitoring and evaluation of one type of project, slum upgrading (see box 16.11).

- ***What are the objectives of the project?*** The dimension(s) of poverty that the project will tackle should be identified clearly, so that the relevant indicators can be used. Objectives should be monitorable so that project outcomes can be evaluated.
- ***How well are the target groups identified and reached?*** Urban poverty is heterogeneous, and different groups in the city may suffer from different types of deprivations. Projects should involve the clear targeting and monitoring of the differential impacts on the target groups.
- ***How to use indicators?*** Each dimension of urban poverty has “visible causes/contributing factors” and “policy-related causes” (see table 16.1). Both intermediate and outcome/impact indicators should be traced. For example, in a job-creation and income-generation program, increased access to credits¹¹ and to practical/vocational training¹² would be intermediate indicators; changes in the unemployment rate and in income inequality, and so forth, would be outcome/impact indicators. The relevant indicators need to be collected at the appropriate level of disaggregation to capture the effects of the project. Additional indicators (tailor-made) are required in particular cases, depending on the project and on the characteristics and expected risks and outcomes of the project.

Menu of selected project/program options

Programs in this section are discussed under three headings: integrated urban-development projects; land and housing projects; and finance-based interventions.

Urban project/program interventions have not always been designed with poverty reduction as a major aim, but they can be and increasingly should be. The following summaries draw on experiences with these interventions. Detailed descriptions of each of these types of programs, and examples, are provided in technical note M.3. They particularly note the lessons learned that support improved poverty impact and sustainability, including, for example, that these programs need to be worked out through partnerships with communities and the private sector. Assessment of past experiences provides lessons for decisionmakers in selecting and combining interventions in the context of specific city and national poverty strategies.

Integrated urban development projects (a typical example: slum upgrading)

In one form of upgrading, a package of services (generally comprising clean water supply, sewerage, street lighting, improvements in streets and footpaths, solid waste collection, and drainage) is provided to raise the well-being of a targeted community, as defined by geographical area or neighborhoods. Not only physical improvements but also income-earning opportunities, health clinics, school facilities, and community centers can be included in such packages.¹³ An alternative and less comprehensive approach to upgrading involves targeting residents that lack one or more basic services—the target groups thereby defined by its lack of basic services rather than by neighborhood.

<i>Project objectives</i>	<i>Expected output</i>	<i>Intermediate indicators</i>	<i>Outcome/impact indicators</i>	<i>Monitoring and evaluation activities*</i>
<p>To improve the living conditions of the target population through a package of services that include:</p> <ul style="list-style-type: none"> ⊃ Titling ⊃ Access to home improvements through credits ⊃ Water, electricity, sanitation, drainage, and public lighting (lack of proper service provision was a major problem) 	<ul style="list-style-type: none"> ⊃ Constitution of local co-management groups ⊃ Development of barrio improvement plans ⊃ Execution of barrio improvement plans ⊃ Provision of legal title and registration of titles in targeted barrios ⊃ Improved capacity to carry out and coordinate upgrading projects at the community, municipal, and metropolitan levels ⊃ Increased access to housing improvement credit by low-income households in barrios 	<ul style="list-style-type: none"> ⊃ Number of co-management groups constituted in first year of project ⊃ Number of implementation-ready barrio improvement plans constituted at the end of the first year ⊃ Number of legal household water, sewer, and electricity connections ⊃ Percentage change in public lighting coverage in barrios ⊃ Kilometers of drainage constructed or rehabilitated ⊃ Percentage change in conduction capacity of drainage ⊃ Kilometers of new and/or rehabilitated primary and secondary access roads constructed ⊃ Number of new property titles issued 	<ul style="list-style-type: none"> ⊃ Measured change in property values and land market activities in the targeted barrios ⊃ Measured comparison in perceived quality of life (measured against baseline Social Assessment Survey) ⊃ Measured/observed changes in productivity and solidarity of communities in the target barrios at years three and five ⊃ Measured improvements in quality of life due to physical investments ⊃ Measured change in capacity to target and coordinate investment in metropolitan Caracas 	<ul style="list-style-type: none"> ⊃ Monitoring of land values and activity in the targeted barrios in comparison with a control group ⊃ Focus groups and household surveys to determine perceived quality-of-life changes, ex-post evaluations, using Social Assessment baseline data as a point of comparison ⊃ Collection and processing of data on access to and quality of services ⊃ Mid-year and ex-post independent evaluation of project executing agency

The two approaches are not always entirely distinct. Neighborhood upgrading may involve a sequenced provision of services over time, or provision of only a partial package of services, depending on community demand. The appropriate approach is determined by various factors, including community demand, community willingness to pay for a particular service, cost and design issues (for example, location, geology, and the physical layout of settlements), and institutional issues (for example, capacity of municipalities, NGOs, or other agencies to manage an integrated improvement program). (See also technical note M.3, table M.1; for principles of scaling up slum upgrading, see box M.15 and, for slum upgrading examples, boxes M.16 and M.17.)

Land and housing projects

Provision of affordable housing to low-income households mostly takes the form of site and services projects and core housing projects. Beneficiaries develop serviced plots and core housing units depending on their needs and the availability of savings and credit. Target groups are generally households that need to relocate from unsafe areas or residents currently without tenure security. Loans may be made available to beneficiaries either by formal credit organizations or by NGOs (see technical note M.3, table M.2 and box M.18). The key issue facing such housing projects is the need to effectively target poor households by keeping design standards modest so that units remain affordable.

Land regularization and tenure security programs can make an important contribution. There are two basic approaches to deal with informally occupied urban land: (1) provide property rights (ownership through a legal title); or (2) provide use rights (to individuals or communities), without changing the legal tenure status. In the first approach, in addition to providing tenure security, the objectives include supporting the development of land and housing markets, and thus increasing the local revenue base. In the second approach, the basic objectives are integration of informal settlements and their populations into urban fabric, providing tenure security and mobilizing community resources for home improvements. Authorities need to decide which approach is appropriate by considering local social circumstances, land ownership structure, and the priorities of residents (see technical note M.3, table M.3, and boxes M.19 and M.20).

Finance-based interventions

A number of finance-based interventions are available. These include municipal development funds, social funds and AGETIPs, and microfinance.

Municipal development funds (MDFs) are parastatal institutions that lend to local governments for infrastructure investments. MDFs usually start as an intergovernmental approach to municipal credit supply, structured as parastatal organizations, but then evolve to become financial intermediaries focusing on municipal credit. MDFs do not provide credits exclusively for poverty-alleviation programs. However, they are included in this menu as a financing tool since they can be used for poverty reduction objectives, such as basic infrastructure investments in low-income areas and the development of marketplaces, schools, and clinics for poor residents (see technical note M.3, table M.4 and boxes M.21 and M.22).

Social funds and AGETIPs are nongovernmental entities that select and finance projects where formal government institutions are weak—for example, in countries emerging from a period of civil or economic crisis. Their political independence can be their primary advantage. Social funds are intermediaries that channel grant resources to small-scale projects for poor and vulnerable groups, based on proposals prepared and implemented by such organizations as CBOs and NGOs (see chapter 9, “Community-Driven Development”). AGETIPs are delegated contract managers for public works that prepare and implement subprojects, usually for municipal governments (see technical note M.3, table M.5 and box M.23).

Microfinance schemes target low-income and moderate-income households that do not qualify for formal or traditional credit. Government funding and small savings of households, coupled with foreign donor assistance, are the typical sources of funding. NGOs can help in packaging small loans and mobilizing small savings. Loans can be given to communities or individuals for a variety of specific purposes. Loans for housing/home improvement can have multiple benefits because the poor often work

out of their homes and rent out extra space as a source of income (see technical note M.3, table M.6 and box M.24).

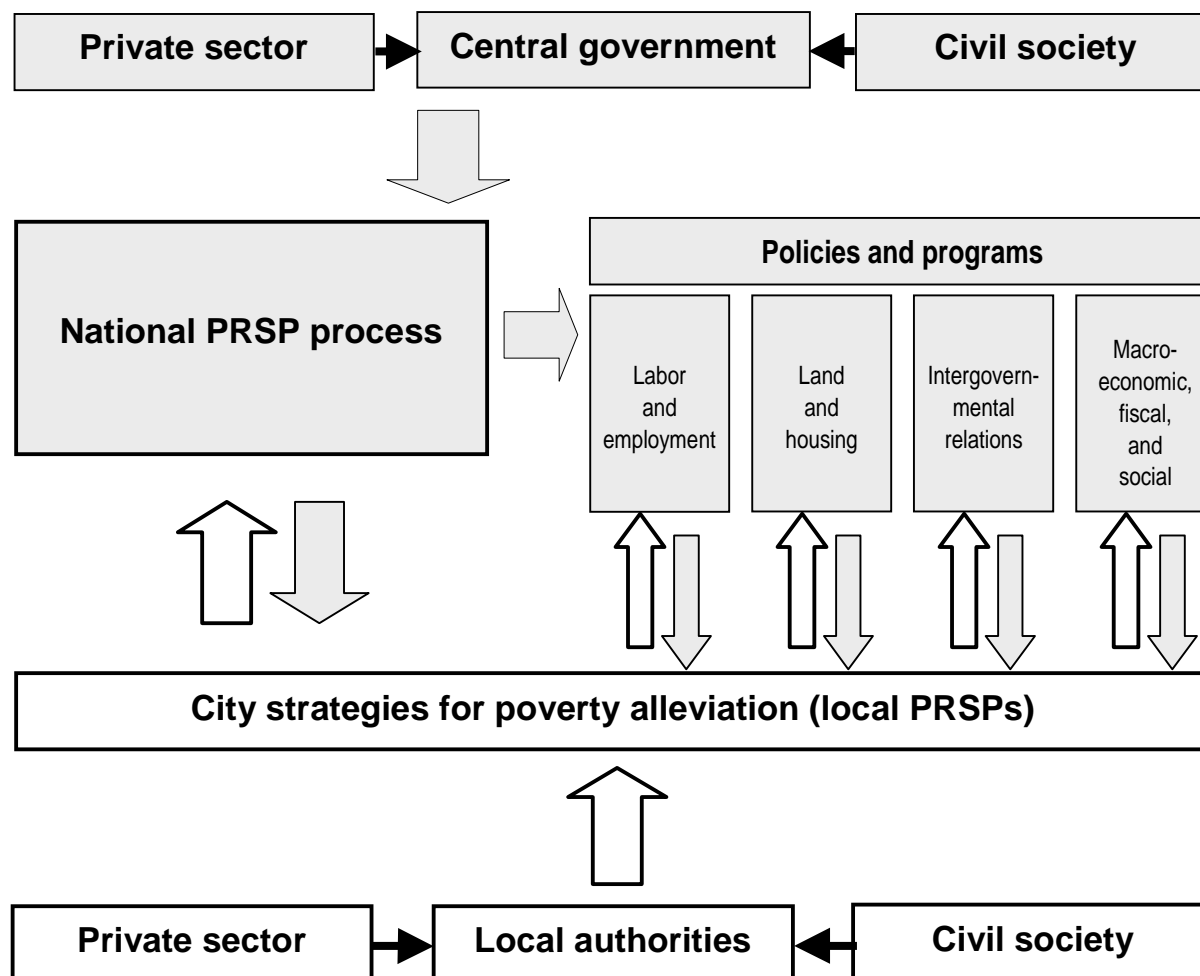
16.3.4 How to determine priorities and develop consensus for urban poverty reduction strategies

Urban poverty reduction strategies need to be grounded and implemented at the local (city) level. The scaling up of such strategies, however, requires both the national and local government to act simultaneously, eliminating impediments at both levels. While the central government is working on a nationwide scale, addressing policy matters and regulatory impediments and initiating new programs, the local authorities should be designing strategies to make appropriate interventions and regulatory changes in the city. Local experiences should be fed back to the national government to influence its support of cities and to assist the redesign of national programs (see figure 16.2).

What can national governments do to reduce urban poverty?

When designing a poverty reduction strategy at the national level, governments need to consider how urban poverty reduction can contribute to progress overall and to complementarities across regions and sectors. City and national governments could focus on three priority areas, for their high payoff in urban poverty reduction: (1) employment/labor markets (including safety nets); (2) land, housing, and infrastructure (including private financial markets); and (3) intergovernmental relations (including municipal finance and capacity building). At the same time, interventions in other areas—including

Figure 16.2. National–Local Feedback Process for Urban Poverty Reduction Strategies



education, health, transport, and energy, as well as macroeconomic and fiscal stability—are also important to reduce poverty in cities. The three priority areas identified here are suggested as the primary themes for agencies working on urban and local government issues.

Perceiving urban poverty reduction in a wider context and with reference to the many dimensions of poverty and its cumulative impacts (see table 16.1) would help national authorities design their policies and strategies in a more effective way. Much of what has been discussed about urban policy would also help other sectors improve their poverty impact. To cite only a few examples: reducing the incidence of

Table 16.5. Summary of Actions that Can be Taken by National Governments for Urban Poverty Reduction Strategies

<i>Policy-level decisions</i>	<ul style="list-style-type: none"> ⊃ Develop urban poverty reduction measures as a component of national development plans and sectoral policies ⊃ Develop instruments to help local governments respond to the demands placed on them in alleviating poverty at the local level—for example through fiscal transfers and matching grants ⊃ Ensure stability in revenue sharing with local authorities ⊃ Synchronize the elements of decentralization—for example by balancing the transfer of decisionmaking and revenue-generation authorities to local authorities ⊃ Take action against corruption by supporting the privatization of service provision, ensuring transparency and accountability ⊃ Remove disincentives to the hiring of low-income workers ⊃ Support equal opportunities and policies against discrimination against gender, ethnic origin, and so forth ⊃ Review constraints on sectors with high employment-generation capacities, such as housing construction ⊃ Design policies and support actions to remove bottlenecks in the supply of developed land ⊃ Give local authorities the freedom to establish land use and zoning regulations ⊃ Support tenure regularization and transferable property rights ⊃ Ensure political and economic stability
<i>Programmatic innovations</i>	<ul style="list-style-type: none"> ⊃ Initiate and promote national programs such as Indonesia's national governmental support for the Kampung improvement (slum upgrading). Central government support is one of the underlying factors of this program's success and replicability ⊃ Promote microenterprises by encouraging financial organizations to lend to them and by making funds available as seed funding or guarantees to facilitate resource mobilization ⊃ Transfer or sell unoccupied government land (treasury land) to local authorities for local use
<i>Regulatory framework</i>	<ul style="list-style-type: none"> ⊃ Identify/diagnose national policy impediments to improving the living conditions of the urban poor in sectors such as land, housing, infrastructure, health, and education ⊃ Liberalize interest rates to facilitate operations and cost recovery by microfinance organizations ⊃ Develop simplified and appropriately designed taxation policies for small businesses, banks, and financial institutions ⊃ Permit paralegal practices that facilitate collateral and credit underwriting for small-scale enterprises ⊃ Establish standards of public accountability for local authorities, such as municipal auditing requirements ⊃ Clarify the responsibilities of different levels of government agencies ⊃ Make worker protection measures and social benefits affordable and accessible to low-income groups; reduce barriers to the inclusion of informal sector workers
<i>Monitoring and coordination</i>	<ul style="list-style-type: none"> ⊃ Support and monitor poverty outcomes in cities through national agencies such as statistics institutes, based on agreements with local authorities on appropriate and realistic benchmarks ⊃ Coordinate intercity efforts at sectoral level ⊃ Support training and dissemination of municipal experiences; for example, through national associations of local authorities. Foster intermunicipal cooperation

communicable diseases through better housing and infrastructure services; reducing crime and strengthening governance through community involvement in improving neighborhoods; increasing employment and savings through efficient housing markets; and supporting macroeconomic stability through sound intergovernmental fiscal relations and fiscally responsible local government.

What can cities do to reduce poverty?

City stakeholders, whether in industrial, transition, or developing countries, can take an active role in defining a shared vision of their city's future and improving the quality of life in the city, particularly for the urban poor. A menu of possible actions that could be considered by city authorities is set out in table 16.6. A city development strategy (CDS) is a process devised and owned by local stakeholders that seeks to formulate a holistic vision for their city. The process involves analysis of the city's prospects for economic and social development, identification of priorities for investment and development assistance, and implementation of the strategies identified through partnership-based actions.¹⁴

This section briefly presents the strategic planning (or action planning) method to illustrate how cities can get started and how they can proceed in the development of poverty reduction strategies.¹⁵ It should be noted that strategic planning is not an attempt to blueprint the future: strategic planning looks at the cause-and-effect consequences over time of an actual or intended decision. Nor is strategic planning merely a set of wishful thoughts: it should relate actions to resources that are available or that can be mobilized realistically. Finally, like a national poverty reduction strategy, strategic planning should not involve the preparation of massive and detailed plans but should concentrate on a few issues on which there is consensus regarding priority.

Strategic planning is designed to overcome the typical shortcomings of traditional statutory planning tools. That is not to say that strategic planning and traditional methods of planning are mutually exclusive: the strategic planning method can be used without first abandoning conventional methods. Strategic planning can be used both at the city and at the neighborhood/community level for decision-making and strategy design (see boxes 16.12 and 16.13).

Steps in the strategic planning process can be set out as follows:

- ***Identifying problems, their causes and consequences, and their relation to other problems.*** For example, this may involve working with stakeholders to design a problem tree to identify multiple problems and how they are linked. Problem identification requires the collection and analysis of data. Information gathering, that is, encompassing factual and quantitative data as well as observations/qualitative analysis for a rapid assessment of the poverty situation and an overview of policies and programs addressing poverty, is best initiated before problem analysis with stakeholders.
- ***Formulating objectives, which should be specific, measurable, realistic, and time-bound.*** The objectives have to be appraised against the constraints and opportunities that would work against and in favor of the realization of those objectives. This analysis, which is also known as a SWOT analysis (strengths, weaknesses, opportunities, and threats) is the basis for determining options for actions. It may be necessary at this point to return to step one, to reassess the problem and to analyze further its visible and policy-related causes.
- ***Developing strategies and formulating options for influencing the key forces.*** Coordination and integration to avoid overlaps and the waste of resources is necessary. The chosen options should be compatible.
- ***Defining tasks.*** The strategies or action plans should be broken down into tasks to be undertaken by specific responsible agents, including the monitoring of progress, and time frames should be defined. Ensure stakeholders will receive feedback on progress.

Table 16.6. Summary of Actions that Can be Taken by Municipalities for Poverty Reduction Strategies

Policy issues	<ul style="list-style-type: none"> ⊃ Make poverty reduction a part of the city development strategy. Ensure a completely transparent process that is open and shares all information fully and freely. ⊃ In countries where the poor have the vote, hold referendums about key issues—referendums will both inform the public and produce a clear mandate about future actions. ⊃ Be sure to enlist all stakeholders in projects. The participation of such entities as resident associations, neighborhood groups and specific forces within the community, notably women, is vital to the success of any policy. ⊃ Rather than relying on intergovernmental transfers, increase revenue generation via progressive taxation.
Program Innovations	<ul style="list-style-type: none"> ⊃ Initiate programs at the city level. (See menu in section 16.3.3.) ⊃ Provide poor communities with access to information on potential jobs and markets, and collaborate with the private sector to organize training programs.
Regulatory framework	<p><u>Land</u></p> <ul style="list-style-type: none"> ⊃ Increase tenure security within the scope of cultural possibilities and community priorities. ⊃ Try to make land rights tradable to facilitate land market transactions. ⊃ Simplify registration procedures. ⊃ Recommend and encourage better use and supply of developed land, especially in underutilized areas. <p><u>Housing</u></p> <ul style="list-style-type: none"> ⊃ Simplify construction and occupancy permits. ⊃ Apply realistic standards regarding minimum plot size, building materials, and construction codes. ⊃ Accept multiple use of dwellings. <p><u>Infrastructure and services</u></p> <ul style="list-style-type: none"> ⊃ Simplify subscription procedures and allow subscribers to pay fees in affordable installments. ⊃ Apply realistic and affordable standards of service. ⊃ Cooperate with water vendors and other informal providers to serve the poor. <p><u>Employment/labor markets</u></p> <ul style="list-style-type: none"> ⊃ Alleviate constraints on small and microenterprises, such as high license fees. ⊃ Allow urban agriculture and home-based income-generating activities.
Monitoring and evaluation	<ul style="list-style-type: none"> ⊃ Carry out city poverty assessments to update information on poverty and its causes. Such assessments can be a basis for a city poverty strategy. ⊃ Develop and use indicators and measurement benchmarks to evaluate achievements. ⊃ Monitor implementation of strategies and impacts of policies and programs on the poor. ⊃ Disseminate results to stakeholders.
Financial issues	<ul style="list-style-type: none"> ⊃ Avoid relying entirely on budget transfers from central governments or other entities—rather, look to local resource mobilization, including levying local taxes. ⊃ Introduce cost recovery: complete cost recovery cannot be expected, but it is not unreasonable to expect contributions from a program’s beneficiaries, through labor or through cash. ⊃ Target subsidies to well-defined groups for better cost recovery and effective utilization of scarce resources.

Consensus building is needed to define shared goals, priorities, and strategies over a medium-term horizon and to mobilize resources. The consensus needs to include a broad range of stakeholders, including citizens, civil associations, the private sector, regional authorities and local representatives of central government (who can fulfill an important role in creating conducive conditions and providing support for city strategies). Maintaining a flow of clear, accurate, and complete information among stakeholders should be a part of the strategy from the beginning.

City consultations are a primary means of reaching consensus among stakeholders. There are various ways to arrange city consultations. For example, in Vitebsk, Belarus, an action plan was developed for inner-city revitalization, and meetings were held on different platforms with different stakeholder groups (see box 16.12). In Cali, Colombia, consultations for a city development strategy were organized as an extensive event, including interactive software (see box 16.13). Local media can be a primary channel to invite stakeholders to discussions, to inform the general public about the purpose of those discussions, and to disseminate decisions and strategy choices.

Urban financial and organizational audits: A complementary approach for city strategizing

One method to prepare municipal investment programs is the urban financial and organizational audit. These audits set out the priority investments to be financed and the improvements or reforms the municipality intends to make in its management, and can complement city poverty assessments. The urban audits method has recently been used in World Bank-supported projects in Senegal and Burkina Faso to determine priority investment programs.

An urban audit is a diagnostic tool that can help a municipality establish a priority investment program. It should diagnose a city's needs and then propose a coherent set of priority projects that can be undertaken given existing financial constraints. Such an audit should have several expected outcomes. These include identifying needs and priorities; understanding the municipality's financial capacity (which should be defined by a financial audit conducted simultaneously); then listing the investments suitable for funding.

An urban audit can consider the following factors:

- Urban site and location: assessing the municipality within its region and the city within its natural setting, and considering such factors as slopes, flood risks, erosion, and water table.
- City organization: describing municipal boundaries, divisions into districts and neighborhoods, physical growth, land occupancy; and looking at recent municipal projects and future commitments.
- Urban economy: presenting economic activities and employment.
- Demographics and land needs: describing population trends for the city and the region since the last census, population by district and type of housing, population density per district (according to infrastructure and services inventory), and the people's need for serviced sites.

Box 16.12. Action Planning in Vitebsk, Belarus

Stakeholders' different, yet complementary interests: The municipality's interest was to promote the inner-city area as the core of cultural and commercial activities and to support economic development. The private sector was interested in finding vacant premises in the center. The residents of the inner-city area, especially those with ground-floor apartments, wanted to improve their housing conditions. Most of the ground-floor apartment owners are lower-income households living in damp and unventilated conditions. Neither the households nor the municipality have sufficient financial means to renovate these units. One option was to enable people to shift their residential space to commercial use by selling or renting to the small-scale private sector. Such a strategy would also lead to more jobs.

Participation of stakeholders: In Belarus, the state is still large and pervasive and there is no tradition of grassroots activity. It took a lot of time and effort to get different interest groups to participate. The first step was to enlist local media to invite residents, NGOs and the private sector to open discussions. Although people were attracted to the idea of discussing and tackling inner-city problems, they still hesitated to speak, lacking experience and doubting that much could be done. It also became clear that media invitations would not convince many people to become involved. This was when the municipality decided to take a more personal approach. The city's chief architect began contacting residents and NGOs personally.

Achievements: Lines of communication were forged between the local authorities and the general public. The municipal planning department, the main authority for inner-city revitalization, rehabilitation of housing stock, and the issuance of construction permits and land use changes, additionally managed to get its own budget account in 1999. It is now a separate legal entity, able to raise funds and disburse them more or less at its own discretion, which is an important step toward decentralization in the same year. The municipality started issuing permits for commercialization, and a couple of shops opened in the center. Although the national government has since passed a decree against changing the functions of residential premises, it should be noted that there is intense debate surrounding this legislation.

Source: Baharoglu and Lepelaars (Forthcoming).

Box 16.13. Consensus Building in Cali City Development Strategy

Several factors motivated a city strategic process: Cali, a city in southwest Colombia, has suffered a general decline of the trust of its citizens and stakeholders. In the late 1990s the city was in the midst of the worst economic crisis in its recorded history, with GDP falling since 1995 and unemployment exceeding 20 percent. The latest figures on poverty show a doubling from 1994 to 1998 and rising inequality levels. The education system is not closing the gap between social classes; it is not providing young people with the skills to enter and participate successfully in the labor market, and its quality and coverage have worsened. Violence—particularly homicide—has become one of the most serious problems for Caleños and is the most tangible symptom of the decline of city livability. The financial situation of the municipality was critical, with a large debt and debt financing obligations. Intensive collaborative work to revive the city began in early 1999.

City consultation and prioritization of problems: The first step was a participatory consultation process to identify and rank the city’s problems. About 250 people from different sectors and groups in Cali were invited to participate in the consultation meetings. The participants represented many different groups, including NGOs, citizens, the private sector, academia, sectoral professional associations, youth organizations, sectoral departments of government, municipal government, and central government, and there was also good representation by gender and age. This was not intended to be a statistically representative survey, however, but rather a poll of opinions to gauge the level of agreement around the most important problems. The consultation was made using computer software that permitted anonymous group feedback.

The results: There was a significant consensus among participants in the selection and ranking of issues. Economic reactivation and employment generation emerged as the main issue in five of the six sessions, placing well above other problems identified. Social development, poverty alleviation, and attention to vulnerable groups and peaceful coexistence, safety, and prevention of urban violence virtually tied for second place. This consensus provides a good basis for formulating strategic priorities for action that will attract broad support from stakeholders.

Source: World Bank (2001).

- ⊃ Urban infrastructure and services: taking inventory of neighborhoods and classifying them by their needs and their existing services.
- ⊃ Priority projects: prioritizing possible projects in view of finances available; and taking an inventory of the projects each locality submits, by location, cost and urgency, then classifying each area’s needs with an execution schedule.
- ⊃ Project sheets on priority investments: providing economic justification for proposed projects as well as listing the possible social and environmental impacts of the investment (Farvacque-Vitkovic and Godin 1998).

The financial audit establishes the municipality’s financial resources, and thus how much capital expenditure the city can expect to commit to under the project. This audit generally covers the following areas: the municipality’s financial situation; its revenues and expenditures; its arrears and risks; its monthly cash flow; investments in past years; the dimensions of the priority investment program (including such factors as sources of finance, average and projected revenues, and monthly payments); a projection test; assessment of the city’s financial equilibrium; and performance indicators. The organizational audit identifies the reform measures the municipality decides to undertake. This audit can lead to negotiation of a contract between the municipality and the national government.

Notes

1. This chapter uses the terms “cities” and “urban areas” interchangeably. It is understood, however, that “city” is a legal designation given to a specific administrative or local government structure and that many large urban areas consist of more than one city jurisdiction. The chapter also uses “local governments” or “local authorities” mainly in reference to municipalities. Although their legal status differs among countries, municipalities are understood here to be the lowest organized units within the administrative apparatus of the state.
2. For an updated collection of guidelines and case studies on urban poverty assessment techniques and poverty reduction policies and programs, see www.worldbank.org/urban/poverty.
3. Insecurity as a dimension of poverty is defined as vulnerability to a decline in well being. The shock triggering the decline can occur at the microeconomic (household) level, at the meso (community) level, and/or at the national or international level (World Bank 2000b). Since lack of tenure security is among the key factors that can trigger decline in the well-being of the poor in cities, both at the

household and community levels (see also technical note M.2), it is considered in this chapter to be a specific dimension of urban poverty. As discussed in section 16.3.2, tenure security needs to be addressed, in accordance with community priorities, to complement other measures to reduce poverty.

4. In this chapter, the terms “slum,” “informal,” “illegal,” and “spontaneous” are used interchangeably to refer to settlements built (1) on public or private land without the land owner’s permission; (2) on land that is not legally approved to be developed; and/or (3) without occupancy and construction permits—even if the land belongs to the occupant and is approved for development.
5. The index of unsatisfied basic needs consists of a composite index that includes access to water, crowding, housing quality, sanitation, school attendance, and subsistence capacity.
6. Indicators to be chosen should be decided locally and with respect to policy objectives (that is, those aspects of poverty to be analyzed). The success of policies needs to be measured in terms of relative changes in the chosen indicators as well as with respect to the locally established benchmarks.
7. There are many ongoing efforts to develop indicators. The objective here is to provide a set of illustrative indicators, rather than a definite list and definitions. There are some points noted here—for example, disaster mitigation and discrimination in access to jobs and urban services—where specific measurable indicators need to be worked out. Such items were included to attract the attention of policy makers and professionals to those issues that should be taken into consideration in assessing, monitoring, and evaluating poverty in cities.
8. More information on the good governance campaign can be obtained from UNCHS (Habitat), P.O. Box 30030, Nairobi, Kenya (<http://www.unchs.org/govern>).
9. See chapter 3, “Monitoring and Evaluation,” and also “Evaluating the Poverty Impact of Projects: A Handbook for Practitioners,” Judy L. Baker, World Bank (2000).
10. The terms “projects” and “programs” are used interchangeably here, although projects often refer to activities whose duration and coverage are more limited than under programs. When projects are expanded to cover the large majority of potential target beneficiaries and have sustainable financing over a long term, they would usually be deemed programs.
11. Indicator examples: the percentage of the target group using or being eligible to get credits from formal credit organizations, or the percentage of formal loans given to the target group in the last two or three years.
12. Indicator examples: the availability of vocational training for target groups at the local level or the percentage of the target group attending training programs.
13. For more information, contact the Thematic Group on Services to the Urban Poor: The World Bank (email: urbanhelp@worldbank.org). A compact disc on urban upgrading can be accessed online at: <http://web.mit.edu/urbanupgrading>.
14. To learn more about city development strategies, see http://www.worldbank.org/html/fpd/urban/city_str/cds.htm and the home page of the Cities Alliance, a multidonor partnership launched by UNCHS (Habitat) and the World Bank in 1999 (<http://www.citiesalliance.org/citiesalliance/citiesalliancehomepage.nsf>).
15. This type of planning is a widely used technique in various urban development and capacity-building programs carried out by multilateral and bilateral donor organizations, including the UN; the Cities Alliance (initiated by the World Bank and UNCHS); the German Technical Assistance Program (GTZ), where the approach is referred to by the acronym ZOPP; and the Institute for Housing and Urban Development (IHS–The Netherlands), among others.

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Part 5

Human Development

Chapter 17

Social Protection

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Overview

Policies that promote economic growth are central to poverty reduction, but social protection (SP) measures also have a role to play in reducing the vulnerability and protecting the welfare of the poor. Choosing the mix of SP programs and policies that will best contribute to poverty reduction requires care. A range of policy reforms, programs, and delivery mechanisms, from changes in labor law to provision of public works programs and from public to private mechanisms, may need to be introduced, modified, or strengthened to improve the poverty impact of SP measures.

The first step in choosing an appropriate mix of SP policies is to analyze the main sources of risk and vulnerability of the population and identify the population groups most affected by these risks. Once the groups and their characteristics are identified, the role that SP can play, in conjunction with interventions in other sectors and at the macroeconomic level, can be investigated. Policies to ensure macroeconomic stability, rural development, and human capital formation are especially important and will complement SP programs.

The second step is to determine which of the identified groups are covered by existing SP programs and policies and assess the effectiveness of these instruments individually and in combination. Special attention should be paid to the compatibility of the policy context and the expenditure programs, and the specific objectives of each intervention, its effectiveness at achieving these objectives, and its cost-effectiveness in delivering the observed outcomes.

The aim is to reveal both gaps in coverage and the cost-effectiveness of existing interventions. If full cost-effectiveness analysis cannot be done, then consideration of partial indicators such as sustainability, targeting effectiveness, administrative costs and unintended effects, and constraints can be used.

This analysis of existing programs and policies, together with information on alternative interventions and the constraints faced (for example, budget constraints, administrative capacity, and political economy), provides the basis for determining the most effective mix of interventions. In all cases, the full SP strategy will be composed of a mix of policies and programs. The appropriate mix, of course, will vary by country.

The final step is to develop an action plan that specifies the actions, resource requirements, timetable, and parties responsible for each action. This will help ensure that the immediate and intermediate steps are taken to lead to the medium-term and long-run goals of the Poverty Reduction Strategy (PRS).

To illustrate both how the line of analysis proposed here can be implemented, and how the mix of interventions selected will vary by country, the last section of this chapter considers the country cases of Argentina, Malawi, and Togo.

A wealth of experience is available about the different types of SP policies and programs. Not every type of program or policy will be appropriate, or even feasible, in every country, as the country cases illustrate. The fact sheets presented in technical note N.2 highlight key design features and lessons gained from the past implementation of SP policies and programs to help Poverty Reduction Strategy Paper (PRSP) teams judge the performance of existing interventions and assess what might be realistically expected of new ones.

Figure 17.1 provides a schematic of the line of analysis proposed, to facilitate easy navigation through the chapter for readers who want a quick overview of the ideas presented here before or after reading the whole chapter more thoroughly.

17.1 Introduction

Social protection interventions are “actions to (1) assist individuals, households, and communities to better manage risk and (2) provide support to the critical poor” (World Bank 2000). A country’s policy framework on SP will include a set of laws and regulations and a set of expenditure programs. In addition, private mechanisms—both market-based and informal—provide important support. These policies, programs, and norms are combined to manage risks— that is, events that would harm a family’s

Figure 17.1. Schematic of Flow of Analysis

<i>Step in analysis</i>	<i>Quick references</i>
1. Profile risks faced and vulnerable groups Determine mix of SP and non-SP interventions	Table 17.1 and box 17.3 for generics Tables 17.4, 17.5, and 17.6 for country examples Table 17.2
2. Determine cost-effectiveness of individual SP interventions (existing or potential) 2.1 Labor regulations 2.2 Contribution-financed social insurance 2.3 Effectiveness of publicly funded programs to ↳ map vulnerable groups to interventions ↳ determine their cost-effectiveness – objectives – outcomes	Bulleted text on page 12 Bulleted text on pages 13–14 Bulleted text on pages 15–16 International benchmarks in technical note N.2
3. Adjust program mix	Bulleted criteria on pages 19–20
4. Specify action plan	Text on pages 20-21

welfare. Some risks, such as economic recession, harvest loss, natural disaster, and war, affect whole societies or large groups; others, such as the illness of a family member, loss of the breadwinner’s job, and crime, affect only individual households. Risk management strategies should include actions to reduce the likelihood that certain risks will occur, thereby mitigating risk by reducing the negative consequences associated with an event, and to help the poor cope with the residual effects of the shock so that they do not suffer irreversible negative effects. Some examples of SP interventions appear in box 17.1 and later in this chapter.

Promoting economic growth is necessary to reduce poverty. Social protection programs assist in reducing poverty by reducing income swings, fostering long-term investments in human capital, and, sometimes, by compensating those who are affected by policy changes meant to promote growth.

Box 17.1. Examples of Social Protection Activities

Public actions

Labor-market interventions. Improve the ability of households to provide for themselves through work via the development of efficient and fair labor policies, active and passive labor-market programs, and pre- and in-service training programs.

Pensions. Help governments take care of their older and aging populations by creating or improving private pension provisions, mandatory savings, and public old-age income support schemes. Governments intervene heavily in both regulation and expenditure in this area.

Social safety nets. Provide income support and access to basic social services to the poorest population groups and those needing assistance after economic downturns, natural disasters, or household-specific adverse events that reduce income.

Child-labor reduction programs. Promote the development of human capital and increase equity and education for all groups by designing comprehensive strategies for broadly based poverty reduction, and craft appropriate legislation and programs specifically for child laborers to reduce the occurrence and mitigate the risks of harmful child labor.

Disability programs. Help the disabled through community-based services, including family support (respite care, child care, counseling, home visiting, domestic violence counseling, and alcohol treatment and rehabilitation), support for people with disabilities (inclusive education, sheltered workshops, rehabilitation, and technical aids), help for the elderly (senior citizen centers and home visits), and out-of-home placements (foster care and adoption).

Social funds. Through agencies, channel grant funding to small-scale projects to help poor communities design and implement their own projects to meet their self-defined needs.

Private actions

Market transactions. Private markets can provide insurance policies for health and physical assets, pension plans for retirement, and vehicles for saving in good times and for obtaining credit when needed.

Informal arrangements. Support community or family members through informal insurance arrangements. Arrangements can include marriage; children; mutual community support; savings or investment in human, physical, and real assets; and investment in social capital, such as rituals and reciprocal gift giving.

Furthermore, there is growing evidence that high levels of inequality are associated with low growth due to poor policy choices, lack of social cohesion, or civil unrest. Social protection programs may improve income distribution and good policy choices and thus growth. The poor are often the most likely to face risks of many sorts, from drought-induced food shocks to the death of a breadwinner or other earner to the loss of housing as a result of natural disaster. Compounding this, the poor have few assets with which to face such shocks, so a drop in their income is more likely to reduce them to unacceptable levels of welfare. Good SP measures for the poor, especially in poor countries, thus cannot be considered a luxury. SP programs can help manage risks and facilitate poverty reduction, but, as do all interventions, they require fiscal, administrative, and policy resources that are limited in poor countries. It is therefore crucial for national authorities to be able to prioritize across their alternative options.

The objective of this chapter is to aid policymakers in choosing the right mix of SP policies and programs to meet national goals as determined by the PRS. The chapter proposes a four-step process. The first step (outlined in section 17.2), consists of diagnosing the sources of poverty and vulnerability and considering whether SP or non-SP interventions are most appropriate to deal with them. The second step (section 17.3) gives guidance on evaluating the cost-effectiveness of individual SP interventions. The third step (section 17.4) brings together the results of these diagnoses and information on budget considerations to inform the final choice of program mix, and suggests the criteria that might be used in selecting that mix. The fourth step (section 17.5) is to devise a concrete plan to implement the strategy chosen in step 3. Then section 17.6 presents country case study examples from Argentina, Malawi, and Togo as illustrations of the analytical framework suggested here.

17.2 Step 1: Diagnose Risks and Vulnerabilities

The first step in determining appropriate interventions is to identify vulnerable groups, the risks that they face, and the sources of their vulnerabilities. The term “vulnerability” as commonly used includes several notions, all of interest. Some analysts use it to mean variability in income or an indicator of welfare, even when the average level is satisfactory. Understanding variability in income, even for those who start somewhat above the poverty line, is important in understanding poverty and the concerns of households and policymakers with respect to SP mechanisms. Other analysts use vulnerability to mean the likelihood that the indicator will pass below the defined acceptable threshold and fall into the range that signifies poverty or hunger, for example. Such an adverse outcome can stem from one or a combination of three factors: (1) starting below the threshold (chronic poverty); (2) exposure to risks or shocks, especially for those close to the poverty line; and (3) having few risk management tools available. It is important to know how prevalent each of these problems is and how they interact, as each should be addressed with different interventions. Box 17.2 gives some examples of factors that can be categorized as sources of structural or transitory vulnerability.

This section outlines methods for identifying the key risks that contribute to poverty, along with the groups that are most vulnerable to these risks. These methods point to potential interventions, some of which fall within the definition of SP but many of which are outside the sector. Guidance is also provided on how to decide whether or not SP interventions are the best means to address identified problems. When a preliminary “long list” of SP interventions has been identified, the next step is to prioritize these to reflect the fiscal constraints, political economy considerations, and institutional capacity of the country in question.

17.2.1 Identify major sources of risk and affected groups

Various means can be used to identify the major sources of risk faced by the poor. Analyses for several Latin American countries (see the Argentina example in section 17.6) categorize the population into age groups, list the risks theoretically faced by each age group, marshal data on the basic indicators of each risk, and use those data to assess whether or not the potential problem represented by each risk should be a priority for attention. For example, one would look at indicators of nutritional status to see if children’s health and development are threatened. If the malnutrition rate is low, higher priority should be given to other risks. Such analysis can be enriched by systematically distinguishing by gender (see technical note N.1 for more on this topic); by ethnicity, where pertinent; and by level of poverty. It has the advantages

that most audiences find it easy to understand and that the programs to address unacceptable outcomes match well with this approach. Its disadvantage is that it ignores the role of the family in grouping together individuals of different ages, contributions, and needs.

Another approach is to list all risks that have been prevalent in the country over a given period—say, over the past five years—then relate each risk to the groups that are likely to be most vulnerable. This is the approach adopted in Togo (see section 17.6), where household data and analytical capacity were limited. Still another approach would be to analyze the risks faced by those in different regions or with different sources of livelihood. Box 17.2 shows some sources of vulnerability and risk. (Although structural and transitory vulnerability are obviously related, they have been separated in an effort to help isolate the different causes.)

Once the sources of risks have been identified, each type of risk should be assessed for its severity, scope (in terms of the numbers and groups of people affected), and types of effects and their expected frequency within the particular country context. It is important to determine whether the identified risks affect specific individuals or households and are therefore idiosyncratic (such risks include noncommunicable illness, individual short-term unemployment, and family breakup) or whether they affect whole regions or groups of households and are therefore covariate (such as drought, seasonal price volatility, war, or financial crisis that affects an entire community at the same time). Risks also can be either single or repeated events, examples of the latter being repeated droughts or floods. Covariate, repeated, or compounded shocks are typically more difficult to handle through informal means, and an appropriate response to catastrophic events may be long-term net transfers. In contrast, noncatastrophic events that occur with high frequency but have nonsevere effects, such as transitory illness and temporary unemployment, do not always require long-term net transfers to the affected household because the household may be able to cope in the short term using savings, loans, reciprocal gifts, or, in some cases, private insurance. For very poor households, however, even these types of events can be devastating.

Thus mapping risks and vulnerable groups requires the determination of:

- ⊃ *The frequency of the risk*—for example, a yearly or periodic drought or a rare economic crisis.
- ⊃ *The severity and scope of the risk.* Household data can be used to identify the income sources and expenditure patterns of the poor, and can be used together with qualitative/rapid assessments or geographic information systems (see chapter 1, “Poverty Measurement and Analysis”).
- ⊃ *The types of groups or individuals affected.* Is the risk limited to a particular group, such as women, men, those in certain regions or occupations, or minority groups, or does it affect whole areas or individuals in a totally idiosyncratic manner? (See chapter 1, “Poverty Measurement and Analysis,” and chapter 10, “Gender.”)
- ⊃ *The effects of the risk* on income, social interactions between groups and families (social cohesion), and access to social services and other non-SP risk management interventions, such as microeconomic-finance.

Once vulnerable groups have been mapped against the types of risks they face, the results can be used to make a preliminary prioritization of the possible interventions. Some of the risks may not be inherent in the economy but rather may be the result of existing policies or programs, for example, inflation stemming from poor macroeconomic or fiscal policy. Table 17.1 provides an example of the type of mapping that can be conducted.

17.2.2 Choose between SP and other interventions

Once the major sources of risk and vulnerability and the groups most affected by them have been identified, two questions should be answered: (1) could changes in existing policies, laws, regulations, or programs reduce vulnerability and poverty; and (2) should SP interventions be used to address these difficulties and, if so, which interventions would be most appropriate?

The decision to use SP or non-SP interventions will depend on whether the risks are primarily structural or transitory. It will also depend on whether the primary objective is to reduce risk, mitigate risk, or facilitate coping with risk. Table 17.2 illustrates many of the options available according to these two typologies.

Box 17.2. Sources of Vulnerability and Risk Relevant to SP

Structural vulnerability

- ⊃ High levels of poverty, large numbers of extreme poor, and high levels of inequality
- ⊃ Lack of access to basic services
- ⊃ Seasonality of employment, income, or consumption needs
- ⊃ High levels of lawlessness and crime
- ⊃ Geographic, gender, or ethnic concentration of the poor
- ⊃ Poor macroeconomic, labor, and social policies
- ⊃ Low asset levels and lack of asset portfolio diversification
- ⊃ Low skill levels of labor force
- ⊃ Structural unemployment (for example, for youth, graduates, or women)
- ⊃ Limited social and family networks or limited flow of information
- ⊃ High levels of child labor
- ⊃ Permanent physical or mental disability

Transitory vulnerability

- ⊃ Natural or weather-related, for example, earthquakes, floods, droughts, hurricanes, or pests
- ⊃ Economic downturn or crisis, for example, recession, transition, inflation, wage arrears, changes in taxation or spending, decline in production in sectors from which workers are immobile, job loss
- ⊃ War, conflict, and violence (national, regional, or individual)
- ⊃ Illness or injury, for example, individual illness, epidemics, or temporary physical or mental disability
- ⊃ Life cycle events, for example, effects on household income of old age, death of a household member, widowhood or family breakup, or multiple births

If the risk or vulnerability is structural, risk reduction or prevention efforts will in most cases be the most appropriate course of action. Risk reduction efforts tend to fall more into the realm of policy than program-style intervention, and many key elements of these efforts also fall outside the scope of SP. Of those within the scope of SP, many are in the form of labor-market regulation and programming. Risk mitigation strategies in many instances may also be best dealt with by using interventions outside SP, such as efforts to help diversify the “portfolio”—the physical, financial, human, and social capital assets—of the poor to cushion shocks. Finally, risk-coping mechanisms that relieve the impact of shocks once they have occurred are essential to protect against unacceptable levels of poverty. Many risk-coping mechanisms require support from SP interventions, although others do not.

In deciding the balance between SP and non-SP interventions, one should keep in mind that:

- ⊃ Interventions that promote widespread poverty reduction should always have high priority.
- ⊃ If poverty is more structural than transitory, interventions to deal with the structural aspects, which are usually non-SP interventions, should have priority.
- ⊃ Groups that are not benefiting from general economic growth may need special SP policies or programs.
- ⊃ SP programs can be expected to reduce poverty both directly, through reducing vulnerability to income swings and preventing irreversible losses, and indirectly, by broadly contributing to social cohesion and sound policy choices.
- ⊃ The best mix of policies and interventions in any given circumstance will depend on the context of macroeconomic policies, fiscal constraints, and competing budget priorities; the institutional capacity to design and implement; and political economy considerations.

17.2.3 Indicators for monitoring progress

There is little international consensus on SP indicators. However, the list of potential indicators in box 17.3 may be a useful set from which countries can choose to monitor their progress in improving the lives of vulnerable groups. The specific indicators chosen by a particular country will depend both on what is pertinent to measure—the kinds of risk, the groups that are most vulnerable, and the kinds of programs present—and the realities of what data are available. In most cases it will be advisable to gather data on

Economic crisis	Gross domestic product (GDP) growth rate, exchange rate, trade statistics, business failures	Unemployment rate, decline in wage rate	Number of months	Numbers of persons by sectors, regions	Workers in most-affected sectors	Macroeconomic, finance, trade policies	Unemployment insurance, active labor-market programs, safety nets
Poor rains	Rainfall, timing	Income or proxy (harvest, yields)	Season	Numbers of persons by regions, sectors	Rain-fed farmers, their suppliers and buyers	Irrigation, crop choices, agricultural inputs for next season	Labor-intensive public works, nutrition programs
Landslides	Number affected	Loss of life, livelihood, property		Numbers of persons by location	Residents in affected areas	Land-use regulations, insurance/savings	Safety nets
Illness	Morbidity rates	Cost of treatment, opportunity cost of caregivers' time	Acute versus chronic	Numbers of persons	Children, the elderly, high-risk groups	Health care delivery system, health insurance	Nutrition programs for zero- to five-year olds
Retirement	Labor force statistics	Income	Permanent	Numbers of persons	The elderly, especially from formal sector; those without family	Savings vehicles, labor-market that facilitates part-time employment	Pensions system

Table 17.2. Possible Means to Manage Risks

<i>Outside SP</i>	<i>SP measures</i>
Risk reduction	
<ul style="list-style-type: none"> ‣ Macroeconomic policies ‣ Public health, education, agricultural, and environmental policies ‣ Resources allocation (human and financial) for providing quality basic social services to the poor ‣ Provision of essential infrastructure ‣ Regulated and supervised financial sectors ‣ Institutions and judicial systems ‣ Proper feeding and weaning practices ‣ HIV prevention programs ‣ Asset accumulation (land, livestock, financial) 	<ul style="list-style-type: none"> ‣ Measures to reduce risks of unemployment or underemployment and inadequate earnings ‣ Standards to ensure basic health and safety at work ‣ Appropriate disability policies to support inclusion of persons with disabilities ‣ Measures to reduce harmful child labor ‣ Measures against discrimination in employment ‣ Vocational education and training programs that support human capital investment ‣ Some community-level interventions through social funds, such as preventive health care and the accumulation of social capital through strengthening structures for community action ‣ Infrastructure produced through public works
Risk mitigation	
<ul style="list-style-type: none"> ‣ More formal kinds of portfolio diversification ‣ Asset transfers ‣ Development of savings mechanisms for the poor and vulnerable ‣ Access to microcredit schemes ‣ Protection of property rights ‣ Provision of legal services that preempt the need for other SP programs by ensuring the provision of or improvement in key laws such as those pertaining to property rights and gender-neutral inheritance, and family law that prevents women and children from being left destitute by desertion, divorce, or death 	<ul style="list-style-type: none"> ‣ Insurance programs for unemployment, old age, disability, survivorship, and sickness ‣ Pension systems appropriate to and effective in the country context ‣ Market-based and informal community schemes that aim to reduce risk ‣ Support for the development of strong levels of community social capital ‣ Some types of social fund interventions, such as income diversification through microenterprise credit and access to education and training ‣ Public works during seasons of slack labor demand to reduce seasonal variability of income
Risk coping	
<ul style="list-style-type: none"> ‣ Selling real or financial assets ‣ Borrowing from neighbors or banks ‣ Migration 	<ul style="list-style-type: none"> ‣ Formal transfers or social assistance ‣ Disaster relief programs ‣ Price subsidies (for example, for food) ‣ Public works as means to transfer income after a shock ‣ Informal intracommunity transfers or charity

indicators in each of the three categories shown in box 17.3: exposure to risk, mechanisms to deal with vulnerability, and outcomes.

17.3 Step 2: Determine the Effectiveness of Individual SP Interventions

This section includes checklists that policymakers can use to determine the effectiveness of interventions for labor-market regulations, contribution-financed social insurance programs, and publicly financed safety net expenditure programs. Ideally, data from several sources would be available for this purpose, including budget and administrative statistics; expert opinion of officials and informed critics of the interventions; feedback from clients, in the form of beneficiary assessments or client-satisfaction surveys; household survey data to reveal targeting outcomes; and sophisticated analysis of survey data to quantify program impacts.

In practice, countries often have little of this information readily available, but a first round of decisions is needed based on the data that are already available or that can be assembled quickly. In these cases, policymakers should do their best to consider all the main factors suggested here, even though their conclusions may be tentative, based as they will be on imperfect data or on partial indicators under each factor. Policymakers should seek also to create mechanisms to ensure that adequate data will be available for ongoing or periodic future assessments of the effectiveness of interventions, so that

Box 17.3. Potential SP Indicators

Indicators of exposure to risk and vulnerability

- ③ Frequency of national or regional susceptibility to specific natural or weather-related shocks
- ③ Index of chronic or transitory macroeconomic distress or poor macroeconomic performance (Country Policy Institutional Assessment-type indicator)
- ③ Percentage of population affected by war, violence, crime, or ethnic or class tensions
- ③ Prevalence of communicable diseases, such as AIDS, and alcoholism and drug addiction
- ③ Percentage of disabled persons
- ③ Percentage of single heads of household or divorce rates (this can also be an outcome)
- ③ Percentage of orphans (may also be an outcome indicator)
- ③ Percentage of elderly people
- ③ Percentage of widows

Indicators for mechanisms to deal with risk and vulnerability

- ③ Qualitative evaluation of effectiveness, efficiency, and coverage of country's SP system (poor, fair, good, excellent) within the context of country realities
- ③ Qualitative evaluation of government commitment and capacity to help the poor manage risk (poor, fair, good, excellent)
- ③ Percentage of poor and nonpoor covered by SP programs, and average levels of benefits, overall and by program (coverage and incidence)
- ③ Public and private expenditures on different SP (or SP-related) programs
- ③ Percentage of (poor) households receiving transfers (formal or informal), and average transfer amount
- ③ Percentage of (poor) households with savings accounts, and average size of savings
- ③ Percentage of (poor) households with multiple sources of income (farm/nonfarm, multiple jobs)
- ③ Percentage of (poor) farmers using irrigation or planting several different crops

Indicators of outcomes

- ③ Poverty headcount and depth, if possible disaggregated by rural/urban population and, ideally, by different potentially vulnerable groups, including the elderly and widows
- ③ Levels of chronic versus transient poverty (again disaggregated, even approximately, for different, potentially vulnerable groups)
- ③ Prevalence of seasonal hunger
- ③ Distress sales of livestock or land
- ③ Child malnutrition rates
- ③ Unemployment rates and estimates of underemployment, capturing the level of formalization or informalization in the labor-market (by age and gender)
- ③ Primary school dropout rate (for boys and girls)
- ③ Incidence of child labor (percentage of children who work, based on age and gender)
- ③ Hours worked by children
- ③ Labor-market situation for vulnerable groups (youth, women)
- ③ Estimated percentage of children or families left vulnerable or destitute as a result of communicable diseases (indicators for AIDS, for example, might include the number of infected, number of infirmities, and estimated number of orphans)

subsequent rounds of decisionmaking are more firmly grounded in rigorous analysis (see chapter 1, "Poverty Measurement and Analysis," and chapter 3, "Monitoring and Evaluation," for guidance in that effort).

In assessing interventions, policymakers should consider all the important and pertinent policy, legal, and regulatory frameworks and publicly funded programs and private market-based or informal arrangements that provide social risk management (see box 17.4). The same sort of analysis should be applied to proposals for both new and reformed interventions. The treatment of public programs should be especially thorough because government directly finances these and can therefore most readily manipulate them.

Interventions may be operated out of various institutions—including ministries of labor, social security, education, health, housing, public service, and transport. State and local interventions may be important, and they may dwarf national or federal interventions in some sectors and countries. In many instances, NGOs or large donors sponsor programs outside government that are important parts of the

Box 17.4. Examples of SP Interventions

The interventions listed here are typical of those found in many countries. Not every country will have all of these interventions, nor should it—fragmentation may result in programs that are too small to accomplish much, and several interventions on this list are usually not cost effective. This is meant merely as a checklist to help the PRS team ensure that it has all of the relevant pieces of the puzzle.

Public programs and policies

- ⊃ Food-for-work or labor-intensive public works
- ⊃ Social funds
- ⊃ Agricultural input subsidies (prices or vouchers)
- ⊃ Energy subsidies
- ⊃ Food price subsidies
- ⊃ Housing subsidies
- ⊃ Food rations
- ⊃ Food stamps
- ⊃ School feeding programs
- ⊃ School fee waivers or scholarships
- ⊃ Family assistance
- ⊃ Employment legislation, including hiring and firing rules (including severance), contracting for labor, minimum wages, and so forth
- ⊃ Unemployment assistance
- ⊃ Job search assistance
- ⊃ Unemployment insurance
- ⊃ Job retraining programs
- ⊃ Integrated savings account
- ⊃ Health insurance
- ⊃ Needs-based cash social assistance
- ⊃ Old age insurance, disability insurance, survivors insurance
- ⊃ Noncontributory pension programs
- ⊃ Regulatory framework for private pension programs

Market-based risk management mechanisms

- ⊃ Savings or credit from commercial outlets or nongovernmental organizations (NGOs)
- ⊃ Crop insurance
- ⊃ Property insurance
- ⊃ Private pension plans
- ⊃ Private insurance for health, disability, and life

Informal safety nets or transfers

- ⊃ Exchange of labor (for farming, construction, and so forth) between households
- ⊃ Transfer of cash, food, and livestock between households
- ⊃ Child fostering
- ⊃ Reliance on children
- ⊃ “Dis-saving”—selling assets, livestock, farm equipment and jewelry and drawing down savings
- ⊃ Migration
- ⊃ Tied labor
- ⊃ Sharecropping
- ⊃ Savings or insurance associations or societies, such as *roscas*, *tontines*, and burial societies

SP system and that should be included in the overview. The analysis should not be limited to interventions that are meant to reach the poor explicitly; pensions for public employees are often a major SP expenditure, for example, and although they are unlikely to have much direct effect on poverty because they accrue largely to the nonpoor, they can be a significant use of budget resources and can have both a political and an opportunity cost that should be included in the analysis. Market and informal mechanisms should additionally be examined to see where comparative advantage lies and what gaps such mechanisms can fill, as well as to assess whether public interventions help or hinder their contribution to risk management.

This assessment of possible interventions can clearly be daunting and the PRS team will need to be pragmatic about setting a realistic agenda. The first step is to gain a broad overview of the full range of interventions. This need not be in great detail, and the team can choose a subset of interventions for more in-depth analysis. Programs that receive substantial budget allocations, policies or regulations that cause large distortions in the economy, and interventions that affect large groups of people or for which good evaluations are already available are obvious candidates for inclusion, as are smaller interventions that appear to address important, largely unmet needs. Once a triaged list of interventions is selected, the PRS team should quickly assess what existing analyses and data sources are available. They can then determine how ambitious to be in their analysis and where to focus any data collection efforts.

The tools for addressing regulatory, contribution-financed social insurance programs and publicly funded expenditure programs are somewhat different, and are each treated in turn in the following sections.

17.3.1 Analyzing labor regulations

By allocating labor to its most efficient use in the economy and encouraging employment and human capital investment, well-functioning labor-markets can contribute to long-term economic growth and poverty reduction. Moreover, sound labor-market policies and programs can reduce the risks associated with unemployment, lost income, and poor working conditions, and can help workers manage these risks when they do occur.

A labor-market policy framework includes both regulations and programs. The details of an appropriate framework, however, are not universal and vary from country to country depending on the country's stage of development, its history, and its culture.

Labor-market programs, such as unemployment benefits and training programs, can be evaluated like other SP programs in terms of cost-effectiveness (see section 17.3.3). However, it is generally not possible to do the same in the case of labor regulations, such as rules governing hiring and firing and antidiscrimination regulations. To evaluate labor regulations, policymakers need to answer three fundamental questions:

1. What regulatory interventions would be appropriate?
2. What would be the impact of interventions, including their enforcement, on the functioning of the labor-market?
3. What would be the impact of interventions on workers—especially on poor workers?

It is very difficult to attach a value to the benefits or costs of many labor regulations, and the challenge is complicated further by the fact that the key issue is not simply the regulations themselves but how they are enforced. While it may not be easy to answer these questions either definitively or quantitatively, the following steps may be undertaken in an attempt to understand the labor-market regulatory framework and its implications for poverty reduction.

Conduct an empirical overview of the labor-market

Sound monitoring and diagnosis of labor-market indicators is the first element of a labor-market analysis. This will assist in identifying the trouble spots where policymakers might choose to intervene, and the dimensions in which the labor-market is already functioning well.

Labor-market problems can take many forms, for example, high open unemployment, low earnings, or hardship focused on particular groups. Conducting an empirical overview requires the determination of key indicators that are disaggregated to assess their effects on the poor and other vulnerable groups, including groups defined in terms of gender and age. Some indicators that could be monitored include rates of labor force participation; unemployment, both short-term and long-term; employment; and underemployment; the level and distribution of earnings; productivity; and formal versus informal shares of employment.

It should, however, be noted that in many developing countries, indicators of labor-market problems are not straightforward. (An increase in open unemployment, for example, is not always a bad thing.) The poor cannot afford to be unemployed where there are few formal SP mechanisms in place, and consequently they are often compelled to take low-paying or inappropriate jobs rather than continue searching for a better position. While a rise in the open unemployment rate may mean that jobs are harder to come by, it may also indicate that prosperity or better SP mechanisms are permitting longer job searches. Furthermore, the quantitative database is often limited. An ongoing policy objective should therefore be to assess the data situation, identify data needs, and take steps to improve the in-country capacity to monitor labor-market and other indicators. This can involve strengthening survey capacity as well as improving administrative data.

Qualitative indicators can also be important for monitoring purposes, both because quantitative data may not be available and because some key aspects of labor-market performance may not be amenable to capture by “hard” data. As an example of the latter, an important metric of labor conditions is the set of core labor standards (against child labor, forced labor, and discrimination and supporting freedom of association and collective bargaining) that have been agreed to internationally. An overview of the labor-market should include an assessment of how a country is performing relative to these standards. This can be important for diagnosis of labor policy needs.

Assess the role of regulations

Having identified key trouble spots through an empirical overview of the labor-market, the next step is to assess the role of regulations (or lack thereof) in determining the observed outcomes. Here, it is important to recognize that performance may or may not be due to labor-market regulations. For example, low formal employment rates can be due to a variety of factors, some of which, such as macroeconomic conditions, have little to do with labor policy. However, they may also be attributable to labor-market policies, such as high costs associated with the hiring and firing of workers. Careful analysis is required to disentangle the causes of what are often complex processes.

Assessing the impacts of regulations is important for determining where policymakers should focus attention. This is true for existing regulations that may be causing problems, such as high labor costs due to employment protection rules. It is also true for existing labor-market problems that may require regulation—for example, discrimination against women—where there are no effective regulations in place. Some of the regulatory areas that policymakers could examine include

- minimum wages;
- payroll taxes;
- rules governing the hiring and firing of workers;
- labor standards, such as hours of work, leave, and occupational health and safety; and
- regulations against gender and minority discrimination.

Evaluate the costs and benefits of labor regulations

Once the role of regulations has been assessed, the next step is to evaluate the costs and benefits of the various regulations that are thought to have a significant impact on poverty and growth. While the benefits and costs cannot be precisely calculated, it should be possible to assess whether benefits outweigh costs or vice versa, as well as what impact these regulations may have on poverty reduction. Questions that need to be answered include:

- What is the objective of the intervention?
- Are these appropriate objectives given the condition of the labor-market?
- Conceptually, what are the benefits and costs of this type of intervention?
- From international experience, what are the costs and benefits of this type of intervention?
- What is the empirical evidence of the costs and benefits of this intervention in the context of the country in question?

Assess options

Based on an assessment of the role of regulations and of the costs and benefits of those regulations that affect poverty and growth, the final step is to assess the options that policymakers should consider with respect to labor legislation and policies to ensure that they encourage growth in demand for labor.

17.3.2 Analyzing contribution-financed social insurance programs

One approach to protecting individuals against the risk of old age, disability, death of a family member, sickness, maternity, unemployment, or work injury is through the use of social insurance programs. These programs mitigate such risks by providing a source of income should the individual encounter one of these problems. Individuals contribute to the program while working, often with the employer, and in a few cases the government, making additional contributions. Sometimes funds are accumulated over time, but typically these are insufficient to cover the full expected future payments to insured workers.

Industrial countries typically have social insurance programs that are able to provide substantial risk mitigation for these particular risks and that involve only residual reliance on coping mechanisms. In a typical developing country, social insurance programs often are able to prevent high- and middle-income individuals from falling into poverty when faced with these risks but do not provide equivalent protection for the poor. There are a variety of reasons underlying such incomplete coverage, all of which stem to one degree or another from the difficulty of collecting contributions from the poor. It is only those who contribute that are entitled to protection through these programs, and the chronic poor who are employed in the informal sector, and who do not participate in contribution-financed social insurance programs, are thus excluded from them. Even where schemes exist for the informal sector, the chronic poor are often too poor to participate, have higher discount rates, or rely instead on public safety net programs.

Contributions-based social insurance programs often end up running deficits once they have matured, which become obligations of the government. Thus, not only do the poor not have access to these programs, but fiscal resources that might otherwise be used for social programs to help the poor mitigate or cope with risk are spent on propping up social insurance programs that benefit only the upper- and middle-income classes. Where the general tax revenue base (for example, through a value-added tax) is broader than that of social insurance, the situation is even worse, since taxes collected from the poor are thus used to pay benefits for the better off.

A basic first step in evaluating a social insurance system is to determine what percentage of the working-age population contributes to the system and what percentage of the vulnerable population, including the elderly, widows, and the disabled, receives benefits. Should the program be broad based, budgetary support from the government might be justified as poverty reducing. The U.S. social security system, for example, has a redistributive benefit structure and broad coverage, and is thus often credited as the nation's most effective poverty reduction program. In doing such an evaluation, the analyst should consider both current and future coverage trends. For example, in much of Eastern Europe, coverage rates among the elderly are high, perhaps justifying some level of budgetary support. Coverage rates among the working-age population are falling as people join the private sector, however, and evasion of contributory obligations is becoming easier; and in some cases, participation is now voluntary. This suggests that coverage rates among the vulnerable will be lower in the future and thus that budgetary support may not be justified in the long term.

Assuming that social insurance coverage is limited, as is typically the case in developing countries, the criteria used for evaluation include:

- *Fiscal sustainability.* Is the insurance system designed to be financed strictly through contributions from the covered population and its employers in both the short term and long term?
- *Adequacy of benefits.* Are the benefits provided under the system adequate to prevent the covered population from falling into poverty? Are the benefits sufficient to provide incentives for contributing to the system, as compared to other means for mitigating these risks?

- ⊃ **Avoidance of crowding out.** Are the benefits provided so generous that they crowd out or undermine other means of risk mitigation through informal or market means, where these are available?
- ⊃ **Avoidance of regressive redistribution.** There is some element of redistribution, whether intentional or unintentional in all social insurance schemes. For example, in health insurance, premiums are often set as a percentage of salary. Where health outcomes are positively correlated with income—meaning that the wealthier would tend to require less health care—this would create a situation in which those who are in less need of the benefits contribute more and therefore the system would inherently incorporate some level of redistribution to the poor. On the other hand, higher-income workers tend to live longer than low-income workers and thus can expect to receive pensions for a longer period of time, raising their overall pension gains relative to low-income workers. Whether the redistribution is progressive or regressive needs to be examined.
- ⊃ **Avoidance of vulnerability-raising incentives.** Encouraging women, for example, who on average live longer than men, to retire earlier on pensions that are often not fully indexed results in lower pensions that fall in relative value over the longer retirement period, thus raising the risk of female poverty in extreme old age. In another example, long duration unemployment benefits raise the risk of long periods of unemployment, which may jeopardize the beneficiary’s return to normal employment.

17.3.3 Analyzing the effectiveness of expenditure programs

There are three aspects to program effectiveness: poverty objectives, outcomes or impacts, and cost-effectiveness in delivering the observed outcomes. Questions that should be answered in the analysis of each of these three aspects follow.

Poverty objectives of programs

Poverty reduction programs may have any of a wide range of specific objectives: for example, to reduce the poverty headcount, to raise wages, to shorten the “hungry” season, to improve access to health care, or to improve the voice of the clients in social programs. This range of objectives stems partly from the multidimensionality of poverty itself, and partly from the complex, and often difficult to measure, linkages between actions and their effect on a summary measure such as income poverty. In analyzing effectiveness, it is important to define the objectives of a program and to check that they are congruent with the poverty and risk diagnostics for the country.

Poverty outcomes from programs

There are two main questions to answer when analyzing the outcome of a poverty intervention:

1. Is the intervention helping to meet the poverty objective?
2. Have there been changes in the indicator toward the desired objective that can be reasonably attributed to the program?

There is seldom a good summary indicator of poverty impact, much less one that has an appropriate chain of causality. Analysts must therefore make do with proxy indicators that are likely to reflect or influence actual (unobserved) outcomes. For example, if the program reaches few people among the target group, or if it achieves only a small transfer, it can be inferred that its overall impact is likely to be small. The particular proxy indicators used may vary somewhat by intervention, and more so by the availability of data. It is also important to establish that the change in the indicator is due to the program and not to other influences. (For a more thorough treatment of outcome assessment, see chapter 3, “Monitoring and Evaluation.”)

Cost-effectiveness of SP programs

Classic cost-effectiveness analysis results in comparable numbers for different program options aimed at the same indicator—for example, the cost per calorie delivered to the target group via general price subsidies, means-tested food stamps, or food rations given away at public health centers. A different technique should be applied here. Classic analysis is limited to cases where the specific outcome indicators are identical, but antipoverty programs may have a range of specific objectives, such as to increase caloric intake, decrease headcount, and lower unemployment rates. Moreover, the data required for a classic analysis are not likely to be available in quantitative form for all interventions to be evaluated. An analysis of several aspects of the programs—in particular, sustainability, targeting, administrative costs, institutional structure, unintended effects, and constraints—is more appropriate in this context. These factors can feed into the determination of a single summary indicator of cost-effectiveness of a program, but even should such a summary indicator not be used, judgments can still be made after systematically considering the information on each dimension for each program. Technical note N.2 contains fact sheets on the more common SP programs that summarize international experience and provide some benchmarks for comparison.

The questions included in this section were originally developed to evaluate public expenditure programs, but most can also be applied to the analysis of labor regulations and of contribution-based social insurance programs. Most of the checklist is also germane to the analysis of private sector provision of SP support, and most of the concepts also apply to informal private arrangements, although the costs may not be to the government but to the individuals in the network that provides the transfer or insurance. For market-based provision of pensions; of insurance for life, health, or property; or of savings vehicles, issues of coverage and constraints may be particularly relevant.

This diagnosis not only enables a summary judgment about which programs are more cost-effective than others, but also yields information about how each intervention might be made more effective; it thus provides insights into priorities for reform. A country might, for example, discover that in its public works program, only 20 percent of the costs are for unskilled labor, which is well below the international standard (see technical note N.2). A change in the labor intensity of the works financed would increase the income available to the poor in the short run.

Sustainability

- ⊃ What is the cost of each program as a percentage of GDP?
- ⊃ What is the budget or expenditure allocation to each SP program, as a percentage of total government expenditure and of SP expenditure?
- ⊃ What is the source of financing for each program (external or internal)? Are funds earmarked? Are there issues of intergovernmental financial flows?
- ⊃ Is this source of finance likely to shrink or to grow over time in concert with need?
- ⊃ Is the program in conflict with existing policy, legal, or regulatory frameworks that could undermine its sustainability?
- ⊃ What is the unit cost of the intervention (for example, to reduce the unemployment rate by 1 percentage point or to transfer \$1.00 to the target group of a social assistance program)?

Targeting performance

- ⊃ What percentage of targeted and nontargeted groups are covered by the program?
- ⊃ What percentage of the transfer goes to poor and to nonpoor groups?
- ⊃ What is the budget or expenditure allocation for each program by administrative unit, by rural or urban location, by ethnicity, by gender? How does this correspond to the distribution of poverty by these factors?

Administrative costs

- ⊃ What is the administrative cost as a percentage of the total cost?
- ⊃ Is it so high as to be unreasonable?
- ⊃ Would additional spending allow significant improvement in some aspect of the program and thereby improve its impact significantly?
- ⊃ How do these costs compare across programs?

Institutional structure

- ⊃ Which ministries operate the programs and at what level (national, regional, community)?
- ⊃ What type of institutional delivery mechanism is used by the program (direct government delivery, government contracts with NGOs or private sector, social fund)?
- ⊃ Is the overall capacity (staff, equipment, transport, administrative budget, procedures, information systems) adequate to implement the program well?
- ⊃ Are there issues of coordination between agencies or levels of government?
- ⊃ Do the institutions and their agents have incentives to act in ways that ensure that the program is well implemented?
- ⊃ Does the institutional delivery system facilitate proper targeting?
- ⊃ Are systems adequate for participation or client voice?

Incentive effects

- ⊃ What are the sources and potential magnitudes of unintended effects at the program level? (These may vary by type of program. For example, in a public works program that uses private contractors, local contractors or supervisors may cut workers' wages below the program wage to cover the costs of transporting workers to work sites or to maintain sleeping facilities at work sites.)
- ⊃ What are the program's unintended effects at the household or individual level with respect to work incentives, fertility, and household formation? (When considering the effects on work incentives, the nature of the labor-market and the pattern of work of the poor in the country needs to be kept in mind.)
- ⊃ What are the potential sources of household- or individual-level unintended effects (institutional delivery mechanisms, targeting mechanisms, level of transfer), and can they be minimized?
- ⊃ What will be the likely impact on the level of private transfers and household coping arrangements?

Constraints

- ⊃ Are there institutional, infrastructural, financial, or political constraints to effective program operation?
- ⊃ Are there existing institutions to support operation of a new program? If not, can they be set up quickly?
- ⊃ Do staff members have the appropriate skills and training to implement programs?
- ⊃ Are there funds to implement the program?
- ⊃ Is there political will to sustain the program?
- ⊃ Are there aspects of the program that may be constrained by cultural considerations (for example, for some countries, women doing heavy labor on public work sites)?
- ⊃ Do households face any constraints in receiving the benefits of the programs (high transport costs, overcrowding, long waiting periods to receive benefits, language barriers with service providers)?

After carrying out the analysis suggested in this section of the paper, the PRS team should have an idea of the strengths and weaknesses of each of the important SP interventions in the country.

17.4 Step 3: Adjust the Mix of Interventions as Needed

This section aims to help identify the combinations of interventions likely to be most effective in meeting poverty reduction objectives within a country’s fiscal and administrative capacity. The information needed to do this includes the diagnosis of the general character of poverty in the country and the appropriate types of public actions to reduce poverty under those conditions, as derived in Step 1; the assessment of the cost-effectiveness of individual poverty interventions, as derived in Step 2; judgments about the potential of different interventions (see the benchmarks provided in technical note N.2); and information on budget envelopes derived from other parts of the PRS exercise.

Using this information, PRS teams can construct a list of likely interventions to address the existing SP gaps and needs. The next step is to prioritize the potential interventions and determine the implications for existing programs or policies. This exercise will result in one or more proposals for a more appropriate mix of SP interventions. These proposals may differ from the status quo in one or more of the following ways: they may (a) change the budget envelope for SP interventions, (b) modify existing interventions to make them more effective or to change their purpose, (c) include new interventions, or (d) replace or remove existing interventions entirely (usually to reallocate fiscal or administrative resources to another intervention that is deemed more effective or that addresses a more important target group).

PRS teams will have to make their own informed judgments about the relative cost-effectiveness of different public actions for poverty reduction, considering both SP and non-SP interventions and the appropriate budget envelope for SP interventions.

A number of tools are available to help:

- Chapter 6, “Public Spending” offers some general guidance on thinking through some of these tradeoffs.
- The International Labour Organisation’s Social Budget Model provides a computer-based tool to help work through how changes in one sort of SP mechanism may affect the need or budget for another.
- The World Bank’s Pension Reform Option Simulation Toolkit (PROST) includes a tool for judging how different parameters in the pensions system will affect costs and outcomes.
- Technical note N.2 gives some information on the likely range of unit costs for different kinds of programs.

Often, it is helpful to modify existing SP interventions. In some cases, manageable changes in program rules or administration can markedly improve the effectiveness of the program. In these cases, the program should already be reasonably well suited to the poverty situation.

Introducing a new SP intervention is often tempting, especially when a major risk or cause of poverty may be going largely unaddressed. (The fact sheets in technical note N.2 give a summary assessment of which groups and circumstances are best served by each program reviewed.) Although there may be a *prima facie* justification for the program in such cases, the value of the new program with regard to other use of funds must be assessed.

It is tempting to establish a new program that addresses an issue that should have been addressed by other, poorly performing programs. Particular care must be taken in such situations. Sometimes it is appropriate to start new programs, as when small local programs cannot be scaled up without losing effectiveness, but in many cases, starting a new program rather than resolving an old one’s flaws can prove costly in the long run. The forces that led to the need to reform the old program, or that made it difficult to reform, may over time affect the new program, leaving the country with two poorly performing programs. Moreover, neither program will have as much opportunity to achieve full economies of scale.

Replacing or removing existing interventions may be desirable if they are ineffective and cannot be feasibly modified or if they address lower-priority groups or risks. To make such a move palatable, it is

usually necessary for a government to show that the funds (and sometimes staff and structures) will be used for some other intervention in support of a broadly similar goal.

In developing working proposals for the “best” set of SP interventions in a country, PRS teams must keep firmly in mind the reality of limited budgets and administrative capacity. These sometimes require harsh tradeoffs between SP and other poverty reduction interventions, such as transport or education, and, within SP, between SP programs intended to reduce or cope with risk and those that affect different target groups. The situation is further complicated and reform difficult when poorly designed or badly functioning social insurance programs already exist, because individual contributions to such programs carry with them some entitlement to future benefits.

There is little international consensus, either in the policy advisory community or among governments, on what share of a country’s resources should be spent on SP programs or how to divide the resources among different SP programs. This is illustrated in table 17.3, which shows the regional averages and high and low country cases for social security and transfer-related government expenditure. The range overall is quite broad, and neither the poorest countries nor Organisation for Economic Co-operation and Development (OECD) countries can be said to be completely meeting the needs of the poor. The poorer countries do not spend enough to make their programs effective; in the countries with the highest expenditures, the need to contain or reduce SP expenditures is often a central element of the political and social policy dialogue.

Table 17.3. Expenditures on Social Security and Welfare

<i>Region/country</i>	<i>Percentage of GDP</i>
Sub-Saharan Africa	
Average	1.11
High (Guinea-Bissau)	1.94
Low (Liberia)	0.29
South Asia	
Average	2.31
High (Sri Lanka)	4.53
Low (Nepal)	0.08
East Asia and Pacific	
Average	4.40
High (Japan)	8.29
Low (Singapore)	0.51
Latin America and Caribbean	
Average	4.67
High (Chile)	8.69
Low (Haiti)	0.65
Middle East and North Africa	
Average	5.68
High (Israel)	10.51
Low (Bahrain)	0.85
Eastern and Central Europe	
Average	10.94
High (Poland)	21.35
Low (Turkey)	0.53
North America	
Average	11.19
High (United States)	14.12
Low (Canada)	8.26
Western Europe	
Average	12.34
High (Luxembourg)	19.32
Low (Iceland)	5.37

Source: Extracted from Besley, Burgess, and Rasul (2001).

The data in table 17.3 include expenditures in the following categories: social security affairs and services; sickness, maternity, or temporary disablement benefits; government employee pension schemes; old age, disability, or survivors benefits other than for government employees; unemployment compensation benefits; family and child allowances; other social assistance to persons; social security affairs not included elsewhere; welfare affairs and services; children’s residential institutions; old persons’ residential institutions; handicapped persons’ welfare services; other residential services; and welfare services not delivered through residential institutions. Figures are unweighted averages across each of the regional groupings and are for central government.

In developing program and budget proposals, the political economy of change deserves particular attention. PRS teams must ask if there are groups or stakeholders who stand to either gain or lose from changes that are designed to make the intervention more cost-effective. What are the potential forms of loss that can be associated with these groups or stakeholders? Will compensating these groups ensure the political viability of the reform or the sustainability of the program or policy? What is the least costly way to compensate these groups? Is there public support or political will for the program or policy? (See technical note N.1.)

Policymakers must also consider whether any proposed change to the existing mix of programs would be limited by the same constraints and pitfalls that existing programs face (see box 17.5). Should policymakers find that the existing SP programs are the best that can be in the country, further attempts at reducing poverty would necessarily have to focus on non-SP programs and policies.

In evaluating proposed changes to SP programs and policies, the fundamental criterion should be the impact on poverty. Often, however, good estimates of this effect are not available before decisions on the changes must be made, obliging instead a fall back to other criteria that can be expected to contribute to poverty reduction. Cross-country experience suggests the following criteria, which are listed in the order they should be considered. The “best” program or policy change would satisfy the highest number of criteria (see Klugman 1999; World Bank 1999c ; Subbarao and others 1997; Grosh 1995; World Bank forthcoming):

- ⊗ Is the potential mix of interventions suited to the context (characteristics of poverty and economic state—that is, crisis, postconflict, normal times, economic boom)?
- ⊗ Is the net benefit or impact of the proposed intervention higher than for other options (existing interventions or modifications thereto) after netting out administrative costs, errors in targeting (of both exclusion and inclusion), costs to the participants (in particular, opportunity costs like forgone wages), and any behavioral changes induced?
- ⊗ If there is an urgent and immediate need for the proposed change (crisis, postconflict, booming economy), can the intervention be rapidly scaled up or down while still maintaining reasonable quality?

Box 17.5. Common Pitfalls for SP Interventions

Several generic pitfalls have been found through experience to await a country’s intended mix of SP interventions:

- ⊗ **trying to cure the ills caused by poor policy choices, such as inappropriate macroeconomic structural policies;**
- ⊗ **lack of coordination of the diverse policies, programs, and actors involved in SP interventions;**
- ⊗ **having so many interventions that few will have adequate resources to operate efficiently, much less accomplish their objectives;**
- ⊗ **missing the possible synergies and complementarities between programs—a failure that can lead to duplication or to missed economies of scale;**
- ⊗ **expanding the intervention’s coverage or benefit level without considering the design or implementation issues that could make the intervention more effective;**
- ⊗ **focusing on the groups for which an intervention would have popular support but only a moderate correlation with poverty, for example, in some countries formal sector pensions may not reach the poor;**
- ⊗ **concentrating attention on the formal sector when poverty is largely in the informal sector, or on urban occupations when poverty is largely linked to agricultural activities or residence in rural areas;**
- ⊗ **failing to reach groups that may be highly correlated with poverty but that are outside the reach of traditional mechanisms or sympathies; for example, refugees, internally displaced persons, and ethnic minorities; and**
- ⊗ **not taking into account the long-term impact when designing initial interventions.**

- ⊃ Will the intervention prevent persistent or irreversible effects? For example, will it ensure that young children are nourished adequately, so that their future intelligence and health develop fully? Will it ensure that girls and boys remain in school so that their future earnings capacity is not reduced? Will it ensure that small farmers and entrepreneurs (both men and women) do not have to sell the assets (traction animals, tools, land) upon which their livelihoods depend?
- ⊃ Will the intervention improve the balance of SP among different target groups (young children, the elderly, the unemployed, the working poor)?
- ⊃ Is there are a match between institutional requirements of the proposed change and capacity within the country? If not, is there congruence between the proposed change and the potential for a realistic and timely buildup of capacity?
- ⊃ Is the political economy of the intervention favorable? Will there be political support for the intervention sufficient to sustain its budget? Could public information or other campaigns help contribute to its attractiveness?
- ⊃ If the intervention is targeted toward mitigating potential poverty rather than coping with existing poverty, is it fiscally self-sustainable or will it draw resources away from more directly poverty-focused programs?

17.5 Step 4: Develop an Action Plan

The purpose of an action plan is to ensure that medium-term and long-run goals are accomplished by making sure that the immediate and intermediate steps are taken. At a minimum, the plan should include details on (a) the steps required to get from the status quo to the goal, (b) the resources required, (c) the timetable, and (d) who is responsible for each action. It may also be useful to include other factors, such as how stakeholders will be consulted and indicators to monitor progress. Many of the issues that must be addressed in developing an action plan for the SP sector of a PRS are generic to action planning generally.

Often the plan will need to be developed iteratively. For example, a first, general version might include an entry such as “reform the public works program.” A more detailed version should elaborate on subcomponents of the reform, such as “get an exemption from minimum wage law,” “develop a poverty map,” and “develop a manual of unit costs for tools and materials with suitable regional variations.” A third version should detail the steps required to pass legislation or to gather the data for the unit cost manual. As successive levels of detail are added, inconsistencies between goals, resources, and timeframes may emerge. It is important to identify these so that they can be resolved. The different levels of detail are also useful for the different users of the plan. The policy matrix in the PRS and pamphlets for dissemination to the general public may reflect only broad goals and minimal detail, for example, but those who are actually implementing the plan will need much more detail if the work is to stay on track—especially where it is necessary to coordinate work among multiple offices. The detailed development of the plan is additionally an important way of verifying that the goals in the general version is actually achievable.

The resources required can be specified in several ways, with the one-time investment requirements and the annual recurrent costs specified separately. Each, however, will need to be squared with the respective budget envelopes (see chapter 6, “Public Spending”).

It can be useful to specify in detail the administrative resources required (personnel, training, equipment, processes). Though their financial cost may be small relative to the benefits to be distributed in the program, it may take significant lead time to make them available, for example, if significant training is required, if new tasks are to be accomplished so that new staff must be hired or jobs redesigned, or if databases or administrative systems need to be built. Identifying the specific needs makes it possible to see what measures are required to meet them and what phasing of the whole program is possible.

Determining the total resources required to achieve a given improvement in an SP or poverty indicator is the hardest part of developing a PRS action plan. Ideally, prior impact evaluation and cost-

effectiveness studies would be available to guide the magnitudes, but these usually are not available for most interventions and a good deal of guesswork will be required.

A timetable is important to help decisionmakers and task teams visualize how all the actions will come together. It is useful to specify in the timetable which actions can proceed in parallel and which must be in sequence.

Specifying who is responsible for each action can be particularly important for SP strategies, because SP interventions are carried out by so many actors. There is no single “head of sector,” as, for example, a Ministry of Education is for all matters relating to education. Unless specified, it would be unclear, for example, who is in charge of cross-cutting actions such as “ensure that SP programs carry out impact evaluations at least once every five years.” A single desk, usually in the planning, finance, or prime minister’s office, may be assigned to monitor progress and provide technical assistance, but many agencies will have to carry out evaluations of their own program (see box 17.4). Furthermore, many single programs involve multiple actors, such as a central ministry, local offices, municipality, NGO, and grassroots groups. It is especially worth noting that donor agencies have a large role in some safety net programs and that they may have to take some actions to bring about the desired reforms. The assignment of responsibility in the action plan is meant to ensure that each and every action is carried out, with none omitted because the parties involved are unaware of their responsibilities. It may also reveal the complexity of the process or highlight potential synergies, wherein, for example, a common consultative process might be done jointly by several actors rather than separately by each.

17.6 Country Examples

This section summarizes three case studies: Argentina, Malawi, and Togo. Although these cases were not conducted as part of a PRSP and thus do not reflect the process that a PRSP would require, they do illustrate applications of the analytical approach outlined in this chapter. The objectives, constraints, and approaches of these case studies differ, but each provides insights with regard to the various methods that might be adopted in identifying vulnerable groups, risks, and potential programs and in prioritizing among these in different country contexts.

For purposes of illustration, each case has its own areas of strength, with different relevance for application in different low-income countries. Argentina provides a good example of a comprehensive approach, particularly with regard to the use of indicators. While the Argentinean programs may be more heavily weighted toward broad social insurance than would be appropriate in many low-income countries, the analysis used provides a valuable illustration of program evaluation under less than ideal circumstances. The Malawi case demonstrates good analysis of an ad hoc, donor-driven type of SP system in a poor country, in which a number of programs were analyzed in depth and an affordable SP strategy developed and proposed to be appropriate to the country context. Togo is included because of its focus on analyzing informal SP mechanisms that are important in most low-income countries. It also offers insight on the implications of the analysis of informal mechanisms for SP systems in poor countries.

The approach and conclusions of each of these studies is presented in the following subsections, with a final subsection (section 17.6.4) summarizing the state of the dialogue in each country, the data requirements, and the approximate timeframe for undertaking these studies.

17.6.1 Argentina

The Argentina case study draws on the work summarized in the World Bank report “Argentina: Managing Social Risks” (World Bank 2000b). The report diagnoses key social risks and vulnerable groups in Argentina, outlines a conceptual framework for managing social risk, analyzes current SP program coverage, and discusses the options, key issues, and general principles to follow in designing effective safety net programs.

It is generally less costly to prevent risk than to cope with its effects. In an upper-middle-income country such as Argentina, first best solutions should enable individuals and households to protect themselves through social insurance such as unemployment insurance or pensions rather than having to

turn to government social assistance programs. This is reinforced by OECD experience that shows that social insurance plays a far larger role in reducing poverty than social assistance programs.

Country Context

About 29 percent of Argentina’s population is classified as poor, and 17 percent of the poor live in rural areas. Between 8 and 12 percent of the total population live in rural areas. Although it has the highest per capita GDP in Latin America (US\$9,000) and relatively high social sector expenditures (17.6 percent of GDP, or US\$1,594 per capita, and 65 percent of total public expenditures), Argentina still has large pockets of poverty as a result of the highly unequal distribution of income and public resources. In addition, the social insurance system reinforces a dualistic labor-market that favors formal sector employees to the detriment of workers in the informal sector, where the poor are concentrated. The policy challenge is to find ways of improving the cost-effectiveness of existing programs and of dealing with the needs of those outside the large formal sector. The scope for reallocating funds within the social sector is limited, since roughly half of social spending is controlled by municipal and provincial governments, another third of expenditures is earmarked for federal pensions, and the remaining 20 percent finances basic sectoral programs such as education and health. This leaves targeted SP programs, which account for only 3.5 percent of total social sector spending and 0.6 percent of GDP, to respond to the large holes in coverage generated by the dualistic system.

Constraints and challenges

There were tight time constraints in this case. As a result, the analysis had to rely on available data to provide estimates of the degree of risk, its severity, and the vulnerable groups affected by these risks, as well as for estimates on program effectiveness. Poverty measures were derived from a semi-annual income–employment survey that covers 70 percent of the urban population. The 1997 national demographic survey, which covered 85 percent of the population (and excluded rural settlements of fewer than 2,000 inhabitants), was used for estimates on social indicators and social program incidence. Unfortunately, neither of these surveys covered the rural areas where most of the extreme poor are located and where the sources of risk are also likely to be different. Additionally, there was limited information available on the SP expenditures of provincial authorities, making it difficult to assess how much in total is actually allocated to SP interventions for the vulnerable.

Identifying sources of risk, vulnerable groups, and potential interventions

In diagnosing the key social risks and vulnerable groups, the population was classified by age group and the number of poor and very poor individuals estimated in each group. The main risks faced by each of these groups were then identified, along with the leading indicators of these risks. (The team that prepared the report noted that using age group classifications resulted in missing some key risk groups, such as indigenous populations, and risks that affect all poor, regardless of their age, such as housing. Distinguishing systematically by gender within each age group would have allowed a more detailed and accurate analysis.) Estimates for each indicator were given, where possible, and an estimate of what percentage of each group is covered by SP programs was made. Finally, the team identified possible measures to address gaps, classifying the measures according to which gaps they covered, based on the type of risks faced by each group. These measures were distinguished according to whether they prevent risk, mitigate risk, or facilitate coping with risk. The role of SP programs in complementing these various aspects of risk management was specified. Table 17.4 provides a summary of the results of this diagnosis.

Identifying the optimal mix of SP interventions

The team used rough estimates of the cost-effectiveness of existing programs, based on available data on national programs. The analysis focused on cost per beneficiary, under- and over-coverage rates, and targeting efficiency—that is, the percentage of the target group reached by the program and the percentage of beneficiaries who are poor. This analysis highlighted the fact that there is a complex array of more than 60 programs with overlapping objectives and target groups. It also pointed to programs that

need to be scaled back and to programs for which targeting can be improved to increase coverage within current spending levels. The complexity of the array of programs is compounded by the fact that municipalities run many local programs that draw on either coparticipation funds from the federal level or their own resources. Hence, one recommendation of the report is to reduce overhead costs by moving toward a model in which provinces and municipalities would be responsible for administration and implementation under federal guidelines.

Based on the analysis of risks and vulnerable groups, the report identified both direct SP and non-SP areas that require change. A number of non-SP interventions were identified as essential to improving the SP system. These include better macroeconomic labor-market policies, to promote long-term increased demand for labor and reduce rigidities in the labor-market, and policies to improve the quality of education to raise earnings potential. The direct SP programs were prioritized according to the key risks that they address for each of the vulnerable age groups. Taking into account the fiscal constraints, recommendations were geared to making better use of funds rather than expanding the budget envelope. The emphasis was on improving the targeting of well-functioning programs and scaling back those programs that are not performing well.

17.6.2 Malawi

The situation in Malawi holds valuable lessons for other low-income countries, highlighting the ad hoc, donor-driven state of the safety net system in a low-income country and demonstrating how to evaluate, prioritize, rationalize, and move forward with reforms.

Country context

The challenges Malawi faces are typical in many ways of those that low-income countries face in providing safety nets. Using a poverty line of US\$150 per year—less than 50 cents per day—65 percent of the population would be classified as poor. Furthermore, it is estimated that around 30 percent of the population is absolutely poor, surviving on less than 25 cents a day, and is prone to shocks such as drought and HIV/AIDS. The vast majority of the population is dependent on subsistence agriculture and has limited involvement in the cash economy or wage employment. Growth is unlikely to be rapid enough in the near or medium term to pull significant numbers of the poor out of poverty. Domestic revenue for redistributive transfer is very limited. The database is weak, making it difficult to identify and target the poorest; there is limited administrative capacity to manage complex programs; and there is a multitude of ad hoc and often inconsistent donor initiatives whose aggregate effect on reducing poverty is probably limited.

Constraints and challenges

The basic challenge in this context is to design a safety net system that is effectively targeted and delivers benefits as efficiently as possible. Most programs fall beyond the control of government, and the ability and willingness of donors to coordinate and collaborate at the overall strategy and program levels is critical. Data constraints are also a significant problem. The analysis in this case relied on data from a survey on income and consumption that was conducted in the early 1990s. A new, integrated household survey has since been completed and will be used to develop targeting mechanisms.

Identifying sources of risk, vulnerable groups, and potential interventions

The identification of vulnerable groups was based on the poverty analysis carried out in the early 1990s, underlining four groups most at risk: (1) rural households with small or no landholding; (2) female-headed households, especially those with a labor constraint; (3) AIDS orphans and their relatives (the extended families and communities who traditionally care for orphans are being overwhelmed because of the scale of the problem); and (4) those who cannot look after themselves and are not in households that can provide for them, including orphans, the disabled, the elderly, and the infirm. Table 17.5 summarizes the size of these various groups.

0-5 Years 12% very poor 43% poor	Stunted development	Malnutrition, preschool program coverage (22%)	Increase coverage of ECD programs	Care of malnourished	PHC services, preschool education	ECDs
6-14 Years 13% very poor 45% poor	Poor education quality (low human capital development)	Late entry (8%), grade repetition (27%)	Reduce repetition, late entrance; raise quality	Remedial education	Improve primary school quality, improve secondary school access/quality	Scholarship/return-to-school incentive programs
15-24 Years 7% very poor 31% poor	Low human capital development (education quality/attainment), unemployment/low wages, inactivity (violence, substance abuse, and so forth)	Secondary school enrollment repetition (62%), unemployment (33%)	Raise secondary school enrollment, sex education, employment	Remedial education, scholarships/income support tied to school attendance, youth programs	Labor-intensive growth and labor-market reforms	Unemployment insurance, workfare/income transfers
25-64 Years 5% very poor 23% poor	Low income	Unemployment (23%), below-poverty earnings (underemployment)	Labor-intensive growth, flexible labor-market	Workfare program, income support; remedial education, targeted training/job search assistance		Social security (contributory pensions), noncontributory pensions (income transfer)
Over 65 Years 1.4% very poor 13% poor	Low income	Pension coverage rate (55%)	Increase coverage of SIJP system for future elderly	Increase coverage of noncontributory pensions	Provision of health services, mortgage facilities, and infrastructure investment	Health insurance, housing subsidies
General Population 7% indigent 29% poor	Poor health care; poor housing/lack of basic infrastructure	Health insurance coverage (35%), running water (66%), sewerage (53%), in flood-prone area (28%)	Health insurance, savings/mortgages, investment in water and sanitation provision, titling programs, relocation	Health care, housing subsidies		

Notes: Rates based on the 1998 *Encuesta Permanente de Hogares*, which covers 70 percent of the urban population. Surveys in two rural provinces estimate extreme poverty rates of at least 30 percent and poverty rates of about 75 percent (World Bank 2000b). Rates are calculated for the following age groups: 0-4-year olds, 5-14-year-olds, 15-24-year-olds, average of 25-39- and 40-64-year-olds, and over 65 years old. The unemployment rate is calculated for 15-64-year-olds.

Source: World Bank (2000b).

Table 17.5. Priority Vulnerable Groups and Potential Interventions in Malawi

<i>Group (by order of priority)</i>	<i>Estimated size</i>	<i>Proportion of the population</i>	<i>Potential interventions</i>
Those who cannot provide for themselves (the disabled, elderly, and infirm not supported by their community/family)	Not available	Not Available	Targeted direct transfers (perhaps through local communities)
AIDS orphans	500,000	5%	Targeted transfer program through NGOs/communities Nutrition supplementation for malnourished children
Female-headed households	2,700,000	27%	Targeted transfer program
Landless (with less than 0.2 hectare)	1,000,000	10%	Public work program Targeted starter pack (through voucher-for-work scheme) Targeted transfer program (perhaps through local communities)

Source: World Bank (1999).

The sources of risk in Malawi are closely linked to the agrarian nature of the economy—90 percent of the population lives in rural areas, mostly engaged in smallholder, rain-fed agriculture. Using information on food shortages, price changes, drought history, and macroeconomic trends, three major risks were identified: (1) the annual seasonal shock in food shortages and price increases, (2) periodic droughts, and (3) large periodic macroeconomic shocks. To these, the threat of HIV/AIDS has to be added: Malawi has one of the world's highest prevalence rates, with an estimated lifetime risk of dying of AIDS of about 45 percent.

Potential interventions were identified to address these problems, based on the above risks and vulnerable groups. Because of the seasonal nature of poverty in Malawi, the proposed interventions focus mostly on the four-month lean season, during which a large proportion of the population suffers severe nutritional stress. Targeting to specific households or vulnerable groups is difficult because of the lack of data, low administrative capacity, and political economy factors. These difficulties suggest that self-targeted programs or programs that use simple categorical or geographic targeting mechanisms (for example, targeting of malnourished children or AIDS orphans) would be best in this setting. Finally, the proposed bundle of interventions tried to focus, when possible, on productivity-enhancing mechanisms that can help alleviate extreme poverty in the longer run. The options considered for the different groups are summarized in table 17.5.

Identifying the optimal mix of SP interventions

A cost-effectiveness analysis of existing programs was conducted before the potential interventions were prioritized. This revealed that approximately US\$65 million (for both donor and government programs) was spent on safety net programs during 1998–99, with relatively little expected sustained impact on poverty. About 42 percent of this was spent on agricultural starter packs, 30 percent on a maize subsidy, 15 percent on food distribution, 8 percent on public works, 3 percent on various food-for-work schemes, and 2 percent on school feeding programs. The analysis also estimated program costs, coverage, value of the transfer, and targeting efficiency of each of the major programs, along the lines outlined in section 17.3 of this chapter. Sensitivity analysis was also conducted, based on the estimated target populations for the proposed programs.

National budget constraints played an important role in the choice of interventions. The proposed approach aims to reach the poorest 25 percent of the population via self-targeting safety net programs for 15–20 percent of the population and a more substantial transfer for the bottom 5–10 percent. The transfers would be targeted first to the elderly, disabled, infirm, and orphans who are not in households or who are in very poor households; second, to labor-constrained female-headed households; third, to the rural

landless; and fourth, to the urban poor and the rural poor with very small landholdings. The results from the cost-effectiveness analysis and identified risks and vulnerable groups, in conjunction with the need to focus on productivity-enhancing interventions, gave rise to the following specific programs for a safety net strategy in Malawi:

- ⊃ **Public works.** Because programs need to enhance productivity while considering fiscal constraints, public works are identified as a key priority, given their risk-reducing benefits, their production of assets to improve productivity of the poor, and their self-targeting nature, which reduces administrative costs.
- ⊃ **Transfers** for those orphans who cannot be supported by their communities or who live in very poor households. Targeting could be done by the community groups that work with AIDS sufferers and orphans.
- ⊃ **Nationwide nutrition program** for malnourished children.
- ⊃ **Targeted cash transfers to the needy.** Given the administrative and information constraints, transfers need as far as possible to be self-targeting. The targeting of starter packs and food subsidies is a politically sensitive issue, but cost calculations show that universal provision of these two programs is not fiscally sustainable and is therefore not recommended. Instead, national nutrition programs and targeted cash transfer programs are suggested.

Following a similar approach to that outlined earlier in this chapter, the proposed program mix—since adopted by the government of Malawi as its National Safety Net Strategy—includes an expansion and improvement of some of the existing programs (public works, nutrition program), the creation of new programs (orphan support scheme), and the elimination of some existing programs (starter pack and subsidies).

Many of the SP interventions in Malawi are likely to remain outside the government’s direct control in the short term. The authorities have therefore decided to focus the activities of the newly created National Steering Committee of Safety Nets and its secretariat on developing targeting mechanisms, developing and disseminating best practices and lessons from past experience, analyzing the impact of existing programs, and playing a central role in the mobilization of resources and in the coordination of interventions. These activities should allow a progressive shift toward the objectives set in the National Safety Net Strategy while enhancing the effectiveness and relevance of specific interventions.

17.6.3 Togo

Bendokat and Tovo (1999) provides a description of the SP mechanisms applied within the constructs of a very poor country and attempts, within the limits of data availability, to assess the effectiveness of these mechanisms. The main points illustrated by the example of Togo are the identification and analysis of informal SP systems and the reforms that might be pursued to support them.

Country context

Togo has experienced a deterioration in living standards over the past decade, with real GDP per capita now 25 percent below its 1980 level. The government has been able to collect only around 15 percent of GDP in revenues, and only about 0.4 percent of the budget is dedicated to SP. As with Malawi, the SP system in Togo is woefully insufficient in coverage and effectiveness, and the provision of basic social services such as health and education has deteriorated from already low levels. People have retreated into kinship-based networks and patron-client networks, but even these traditional, informal SP mechanisms and systems have come under strain as society has become urbanized and exposed to persistent economic and political crisis. Exclusion from traditional support mechanisms is a sign of utter destitution. New, informal, grassroots solutions to risk management are emerging to try to fill the gap left by inadequate government basic services, but these efforts are typically small, fragmented, and require the increased coordination of a much wider range of stakeholders.

Constraints and challenges

A major policy challenge is the lack of data to quantify the degree of risks and vulnerability faced by poor groups and to assess existing interventions. However, qualitative methods and various sources can be drawn upon to determine the risks of most concern to various groups.

Identifying sources of risk, vulnerable groups, and potential interventions

In Togo, the approach was to review the different risks resulting from natural, social, economic, and political factors at the individual or household level, the community or regional level, and the national level. Given the multitude of risks, the analysis then prioritized and identified those risks that should receive particular attention, either because they are the most damaging or because they are not easily recognized and therefore are the most likely to be ignored. These include the death of a family member (loss of income, funeral costs, and traditional rituals imposed on surviving wives), failed crops and unemployment (loss of income and assets, deterioration in human capital), disease (loss of productivity and loss of assets to pay for treatments), environmental degradation (reduced productivity, incomes, and diversification potential), high fertility, gender discrimination (in the family, at school, and in access to services), and HIV/AIDS (death of breadwinners and increased number of orphans).

The analysis then identified and attempted to quantify vulnerable groups that are the most exposed to the identified risks or the least equipped to manage them. In the absence of comprehensive household data, these were identified through consultative processes, and the estimation of their size was based on a variety of sources, including a number of university-, ministry-, and NGO-specific studies, as well as information from the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS UNAIDS. It is recognized, however, that since some of these groups are heterogeneous, all members might not share a particular risk—for example, not all the elderly are abandoned, nor are all female-headed households poor—and that some individuals might fall into more than one category. Table 17.6 presents the main groups identified.

The Togolese rely on mostly informal arrangements and strategies, organized both by households and by local and international NGOs. The existing public sector activities take primarily the form of (a) information or education and regulation, (b) social security for a privileged few (a pension system catering to public servants and private sector employees—a total of around 5 percent of the population), (c) social assistance (mainly public works and regional social funds) for only 10 percent of those who are in theory eligible to receive it, and (d) basic health and education services. With the government finding it increasingly difficult to provide these basic services to its citizens, the private sector is filling some of the gaps with private schools, private clinics, and private insurance schemes. The contribution that these make is still extremely limited, however, and most of the gaps are filled by communities themselves, through informal arrangements relying on a variety of mechanisms, including marriage and well-structured, kinship-based reciprocity networks; rotating savings and credit associations; and socioprofessional or geographic-based associations.

Identifying the optimal mix of SP interventions

The analysis proposes a strategy that relies on the entire range of actors, according to their comparative advantages, and including NGOs, local institutions, and international agencies. The proposed interventions are summarized in table 17.6, corresponding to the risks identified. They concentrate on two areas:

- Preventing risks, in collaboration with other line ministries, the donor community, and local communities, through information and education campaigns, revised laws and regulations, and improved access to basic services.
- Strengthening existing, well-functioning informal mechanisms and filling the gaps currently not addressed by (a) supporting existing informal efforts (supporting NGO networks, disseminating information, facilitating communication, and supporting training); (b) discouraging ineffective or harmful arrangements such as widowhood rituals, female genital mutilation, or expensive traditional ceremonies, in collaboration with local leaders and NGOs; (c) stepping in for those with no access to informal arrangements, such as the very poor, children at risk, and the mentally ill;

(d) reforming existing pension programs; and (e) developing interventions in areas not covered, including interventions to discourage child labor and trafficking, and more efficient mechanisms for large-scale disaster relief.

17.6.4 Summary

None of the analyses reviewed in the preceding sections took place within a PRSP context (although that done for Malawi was an important input into the later Interim PRSP [I-PRSP])—they were instead selected for their coverage and quality. The teams in the three countries were faced with different challenges, some of which are typical of PRSP contexts. The data available upon which to undertake each analysis were different, and usually limited, and the approaches chosen in each study reflect these differences.

Immediate purpose and approach

In the Argentina case, a newly elected government was about to take office. As background for and input into the policy dialogue it expected to have with the incoming government, the Bank decided to undertake an analysis of the SP system. The initial process was thus less participatory than in the cases of Malawi or Togo or than would be the case in a PRSP. Nevertheless, it did include collaboration with a number of government ministries and agencies in gathering data and undertaking some of the analysis (the speed of the analysis and the use of only existing information was not atypical to that of an I-PRSP process). The dialogue is now underway with the new government. In Malawi, the analysis and dialogue on SP issues was developed more closely with the government. This dialogue has followed a substantial process of public consultation, including agreement on tentative priorities for target groups, and this study has thus relied on direct collaboration with the government and donors. In Togo, the process was launched with a workshop for key stakeholders from government and civil society to define SP in a way meaningful in the Togolese context, to take stock of available knowledge, and to assess formal and informal SP mechanisms. This was followed by short fieldwork to fill gaps in knowledge. The preliminary results of the analysis have been discussed at the Bank with key stakeholders who participated in the first workshop and with representatives of all sectoral ministries, and further fieldwork has followed.

Approach and data

All three case studies were hampered by data problems, requiring each of the three teams to apply common sense and broad assumptions to arrive at general magnitudes in their analysis. While the Argentina analysis was able to draw on a recent poverty assessment and a number of recent analyses of labor-market issues, the national household survey data did not include rural areas, where poverty is likely to be more severe and program coverage is likely to be lower. As a result, estimates of poverty rates and the identification of at-risk groups and their sources of vulnerability do not reflect conditions in rural areas, where an estimated one-sixth of the poor reside. In addition, little is known about coverage rates of existing social programs in rural areas or about SP expenditures by provinces. Government agencies were, however, able to provide information on the national budget and a matrix with a list of SP programs, their objectives, and their target populations (where available); the number of beneficiaries per year (where available); the annual program budget; and, on occasion, information on actual coverage and amount of transfer.

Data availability in Malawi was much more limited, with this analysis based on poverty data from 1992, updated to 1998 prices. As in Argentina, estimates of SP program expenditures, direct beneficiaries, coverage, and average transfer and benefits were based on information provided by various agencies, with varying degrees of accuracy and using bases that are not necessarily comparable with one another. A healthy dose of common sense and broad assumptions were therefore applied in undertaking the analysis, which relies on a general sense of the relative magnitudes and ranges with respect to the quantitative analysis.

<ul style="list-style-type: none"> ⌘ Death of a family member ⌘ Failed crops and unemployment ⌘ Disease ⌘ HIV/AIDS 	<ul style="list-style-type: none"> ⌘ Members of female-headed households ⌘ The handicapped ⌘ The elderly ⌘ The unemployed ⌘ Displaced persons/refugees ⌘ The mentally ill 	<ul style="list-style-type: none"> ⌘ 1,350,000 (African standard, 30% households) ⌘ 450,000 (WHO, 10% population) ⌘ 246,000 (6% population) ⌘ 600,000 (33% labor force) ⌘ 101,000 ⌘ 45,000 (African standard, 1% population) 	<ul style="list-style-type: none"> ⌘ Support existing informal mechanisms ⌘ Develop disaster relief systems ⌘ Revised family law and land tenure ⌘ Discourage harmful/ineffective arrangements ⌘ Improved access to social services and infrastructure ⌘ Reform existing SP system ⌘ Measures to fill the gaps
	<ul style="list-style-type: none"> ⌘ HIV/AIDS victims and their families ⌘ School dropouts 	<ul style="list-style-type: none"> ⌘ 170,000 (UNAIDS, plus 78,000 orphans) ⌘ 309,000 (35% enrolled primary students) 	<ul style="list-style-type: none"> ⌘ Information campaigns ⌘ Improved access to social services and infrastructure
	<ul style="list-style-type: none"> ⌘ Children in difficult circumstances (street children, domestic servants, prostitutes, victims of trafficking, and so forth) 	<ul style="list-style-type: none"> ⌘ 150,000 (80,000 girls) 	<ul style="list-style-type: none"> ⌘ Improved access to social services ⌘ Campaigns, legislation, and measures to reduce household difficulties
<p>General risks not easily recognized or likely to be ignored</p>			
<ul style="list-style-type: none"> ⌘ High fertility 			<ul style="list-style-type: none"> ⌘ Information campaigns ⌘ Improved access to education and contraception
<ul style="list-style-type: none"> ⌘ Environment degradation 			<ul style="list-style-type: none"> ⌘ Information campaigns
<ul style="list-style-type: none"> ⌘ Gender discrimination 			<ul style="list-style-type: none"> ⌘ Information campaigns ⌘ Discourage harmful/ineffective arrangements ⌘ Revised laws and regulations

Source: World Bank (1999b).

In Togo, the analysis built on work undertaken for the Poverty Assessment (with much of the background work having been undertaken in 1994 and before). It thus relied on a participatory process to define issues, fieldwork to test hypotheses and fill knowledge gaps, further consultation, and another short data-gathering phase. It also relied on a number of academic, ministry, and NGO studies on specific issues in Togo. To arrive at its orders of magnitude for estimates of different vulnerable groups, it used information from the WHO, UNAIDS, and other sources. It did not attempt to quantitatively evaluate existing SP programs.

Timeframes and costs

The timeframes for these studies and their costs were in large part determined by the amount of existing information and analysis. In Argentina, the team was able to draw from background analysis prepared for the Poverty Assessment, the adjustment operation on pensions, and the labor-market study. In Malawi, the team benefited from other donors financing local background work and from the inputs of some individual consultants. In Togo, the team was able to draw on analysis in the Poverty Assessment, which had already identified vulnerability factors and vulnerable groups. Generally speaking, the timeframe for these studies was around eight months to a year. The costs are difficult to express in a way transferable between countries because they consist primarily of analysts' time. The price of local analysts' time and whether task team members are hired and paid separately or seconded from participating institutions will vary from country to country.

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Chapter 18

Health, Nutrition, and Population

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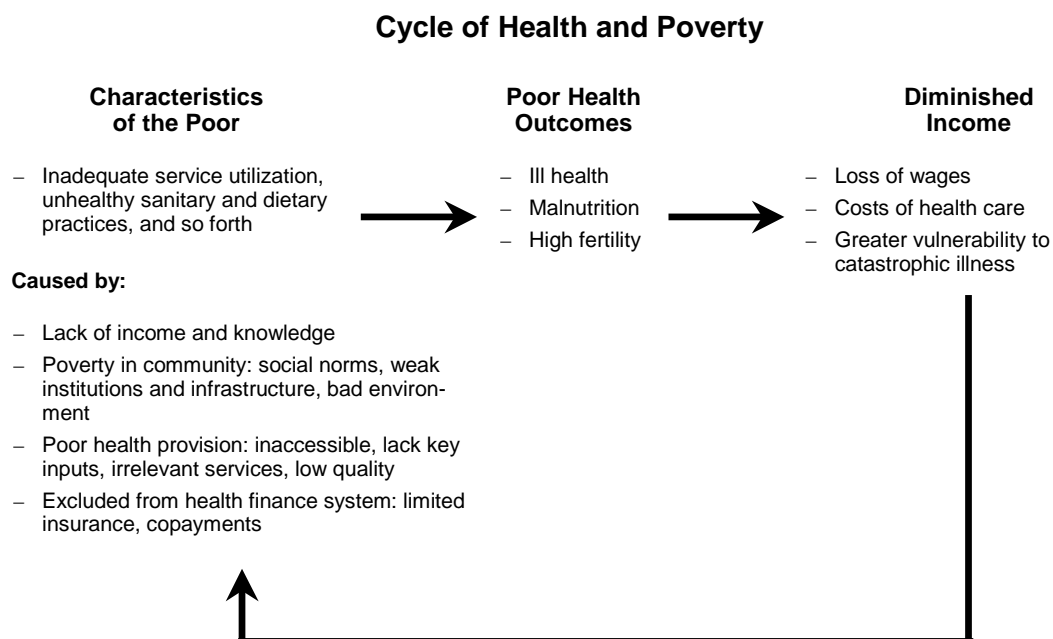
18.1 Introduction

Poverty is both a consequence and a cause of ill health. Ill health, malnutrition, and high fertility are often reasons why households end up in poverty, or sink further into it if they are already poor. The illness of a household breadwinner and the consequent loss of income can undermine a poor household's ability to cope financially. Out-of-pocket payments for health services—especially hospital care—can make the difference between a household being poor or not. High fertility additionally places an extra financial burden on households, by diluting the resources available to other household members and by constraining earning opportunities, especially for women.

Poverty is also a cause of ill health. Poor countries and poor people suffer from a multiplicity of deprivations which translate into levels of ill health that far exceed the population average (see box 18.1). Most obviously, they lack the financial resources to pay for health services, food, clean water, good sanitation, and the other key inputs to producing good health. It is not just lack of income that causes the high levels of ill health among poor people, however: the health facilities serving them are often dilapidated, inaccessible, inadequately stocked with basic medicines, and run by poorly trained staff. Furthermore, the poor are also disadvantaged by a lack of knowledge about prevention and when to seek health care. They also tend to live in communities that have weak institutions and have social norms that are not conducive to good health. In short, poor people are caught in a vicious cycle: their poverty breeds ill health; and this in turn conspires to keep them poor (see figure 18.1).

Governments can improve the health of poor people. Health, along with education, is seen as one of the key ultimate goals of development, and increasingly is seen as a dimension of poverty in its own right. This is reflected in the fact that no fewer than four of the seven international development goals (IDGs) relate to health, broadly defined (see box 18.2). Governments can do much to improve the health of their populations, and especially of the poor. They can mitigate the effects of low income on health outcomes by reducing the price poor people pay for health and other key goods and services, through, for example, health insurance, fee-waivers, and targeted food subsidies. Governments can also reduce the non-income disadvantages faced by poor people: they can (1) improve poor people's access to and knowledge of health services; (2) improve the quality of services that poor people use, both in technical terms and by making them more user-friendly; and (3) get services more focused on the interventions that are relevant to the health profile of poor people. Improving the health of poor people means contemplating action on several fronts. The main objective of this chapter is to provide guidance on accomplishing this. One

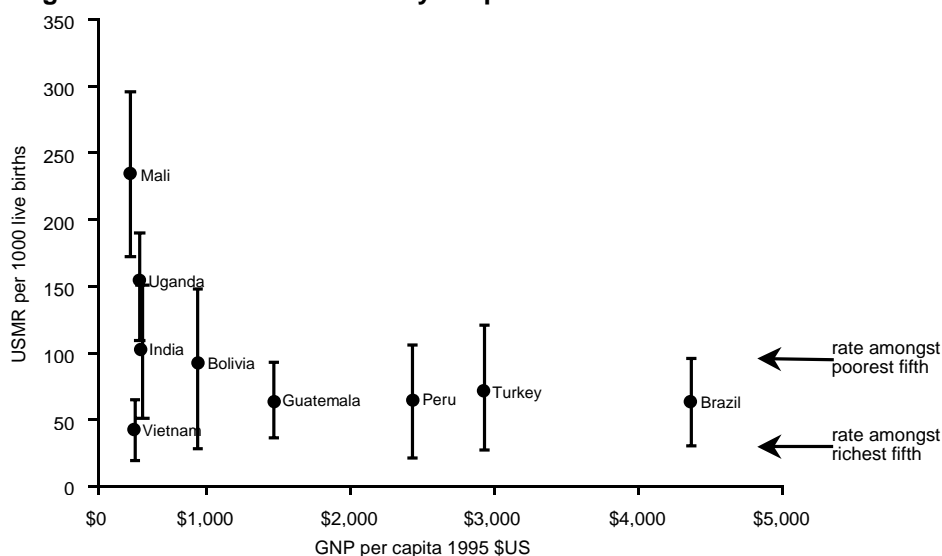
Figure 18.1. Health and Poverty Linkages



Box 18.1. Poor Children Die Early

It is well known that poor countries tend to have worse health outcomes than richer countries. For example, in several sub-Saharan African countries as many as 200 out of every 1,000 children born will die before their fifth birthday; in Sweden, by contrast, the under-five mortality rate is only 5 per 1,000 live births. This tendency is shown in figure 18.2, where the population under-five mortality rate (indicated by the marker) is usually higher in poorer countries. What is less well known, but should come as no surprise, is that within countries poor people have worse health than better-off people. The vertical bars in figure 18.2 show that poorer children—however affluent or poor their country—tend to have a smaller chance of reaching their fifth birthday than better-off children. The chart also shows another important point: the gaps in survival prospects between poor and better-off children vary from one country to the next. Vietnam, for example, despite its low per capita income has not only a low national average child mortality rate but also a small gap between poor children and better-off children.

Figure 18.2. Under-Five Mortality: Gaps between and within Countries



Source: Data from Gwatkin and others (2000), and World Development Indicators (2000).

point needs emphasizing at the outset: funds linked to poverty reduction strategy papers (PRSPs), including debt relief or IDA credits, will have a far greater impact on poor countries' health levels if they are accompanied by a thorough review of existing policies and by a willingness to link new spending with reforms that make health systems work better, especially for the people they tend to serve least well—the poor.

Governments can reduce the impoverishing effects of ill health. By improving the health of their populations, governments can reduce income poverty. They can also reduce income poverty indirectly, by reducing the impact of ill health on household living standards; for example, by modifying health-financing arrangements to ensure that people do not face large out-of-pocket payments when they fall ill. This is sometimes called the financial protection goal of health systems; it is clearly a secondary goal to that of improving health, but is nonetheless an important one. Other parts of government also have a role to play here; for example, by introducing schemes to provide income support to households where the breadwinner is ill and unable to work. The second objective of this chapter is to provide guidance on what health ministries can do to reduce the impoverishing effects of ill health. (See chapter 17, "Social Protection," for discussion of what other parts of government can do on this issue.)

The role of government. In countries as poor as those preparing PRSPs, funds are extremely limited and it is vital that they be used wisely to ensure they have the greatest impact. Governments cannot do everything, and in the health sphere they never will. Good health in any case is not just about what goes on inside health clinics and hospitals—good health can be produced in many ways, and central to this process are people, as members of households and as members of communities. This is not to belittle the role of governments. Governments have a key role to play, and fulfilling that role is not just a question of pumping money into health services. Services need to be relevant, accessible, and affordable to poor people. There has to be coordination between government and the other actors in the health system,

Box 18.2. Health and the International Development Goals

The international development goals (IDGs) have been embraced by much of the international development community as a way of ensuring that progress in poverty reduction can be measured and monitored. Health features prominently in four of the seven goals:

- **Reducing extreme poverty.** The proportion of people living in extreme poverty in developing countries should be reduced by at least one-half between 1990 and 2015. Progress is to be measured via income poverty statistics but also via the proportion of children under age five who are underweight. Large health expenditures by households and ill health are widely recognized to be contributory factors to income poverty.
- **Reducing infant and child mortality.** The death rates for infants and children under the age of five years should be reduced in each developing country by two-thirds between 1990 and 2015.
- **Reducing maternal mortality.** The rate of maternal mortality should be reduced by three-quarters between 1990 and 2015.
- **Reproductive health.** Access should be available through the primary healthcare system to reproductive health services for all individuals of appropriate ages, no later than 2015.

Source: <http://www.paris21.org/betterworld/home.htm>.

such as donors, NGOs, and community organizations. Actors in the system have to be kept well informed about the costs and benefits of different health interventions, about best practices in their delivery, about the health risks associated with certain activities and products, about the opportunities for obtaining care from different providers, and so on. Good government also entails reaching out across ministries. In short, a good government is as much a steward of the health sector as it is a financier and provider of health services.

The different levels of government action. Putting together policies aimed at improving the health of poor people and reducing the impoverishing effects of ill health requires thinking broadly, but it also means thinking across all the relevant levels of policymaking. The first of these is the macroeconomic level—the level of the government’s national budget. Here the major concern is the amount of resources allocated to health, but an important secondary concern is the possible reallocations of budgets to reach poor people better. The second level is the health system, where the concern is to put together reforms and improve incentives to get the system to function better for poor people. The third level is the microeconomic or service delivery level, where the focus should be on how to implement specific activities to reach poor people. Work at these three levels is interdependent: those working at the project or service delivery level cannot succeed without the cooperation and assistance of those at the systems and spending levels. The PRSP represents an opportunity for all people working at all three levels to work together.

18.2 The Key Stages in Policy Design

Diagnostics. What are the health outcomes of the country in question and how do these vary between poor people and those that are better off? How far are households put at risk of poverty because of payments for health care?

Analysis. What explains the bad health outcomes of poor people and the impoverishment associated with ill health, and how far do existing policies help improve matters? This chapter proposes a framework for organizing an analysis of these questions, taking as its precept the understanding that health outcomes and impoverishment are the result of the interaction between households, communities, health services, other sectors, and government.

- **Households.** In effect, it is households that “produce” health, through their consumption of food, their sanitary and sexual practices, their consumption of health-damaging commodities such as cigarettes, and their use of preventive and curative health services. None of these variables is fixed. Some households seek and manage to obtain health care when ill; others do not. Some manage to consume the recommended daily amount of different nutrients while others do not, and so on. Invariably, because of their poverty, poor households fall behind better-off households—often dramatically so. Key questions to ask at the household level include: What household actions, broadly interpreted, make for good health outcomes? How does the population, and different sections of it, fare with respect to key household actions and risk factors? What household-level factors prevent poor households from achieving good health outcomes? (Examples include insuf-

ficient income; lack of knowledge—for example, about appropriate preventive services; and gender inequality within the household.)

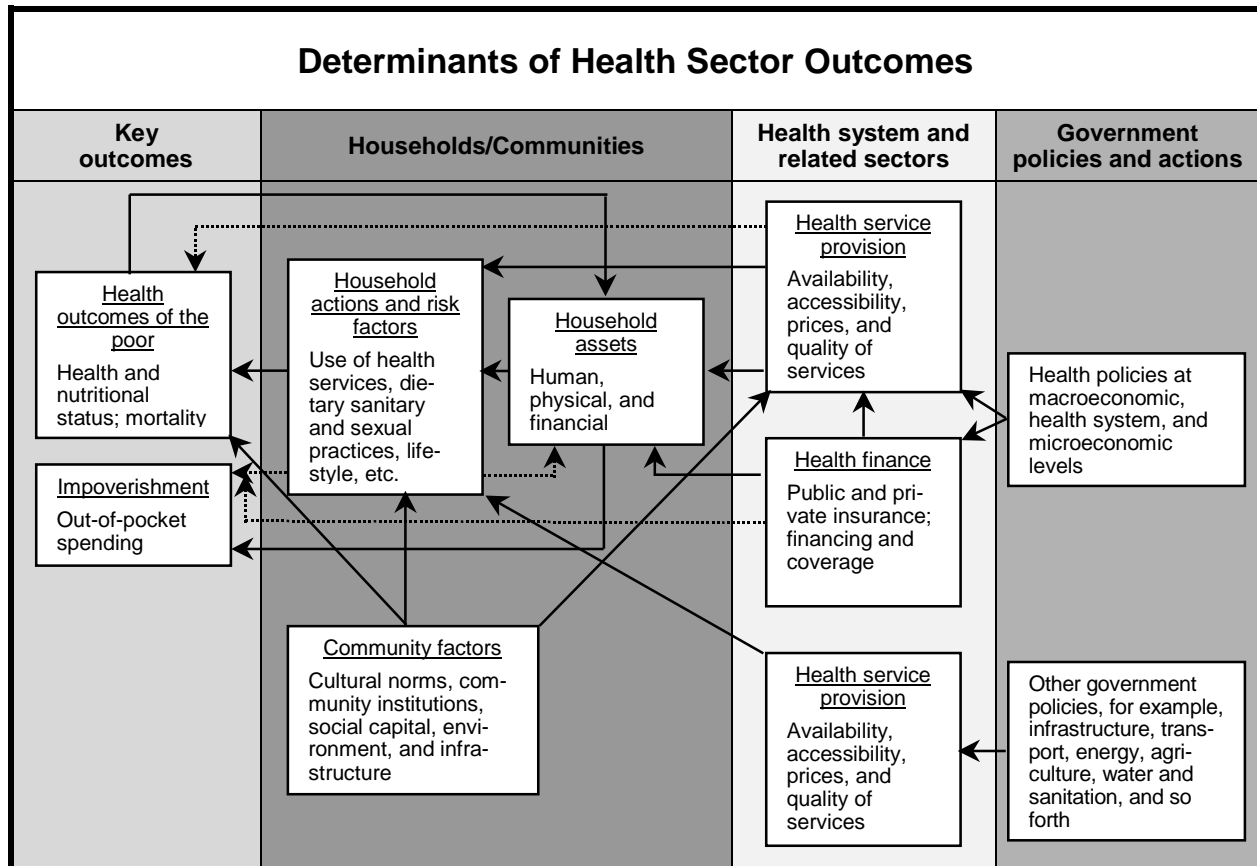
- 3) **Communities.** The values and social norms a community shares can make a big difference to health outcomes; for example, through the use of antenatal and other reproductive health services by women. Communities can also exert a major influence over the way local health services are run. Involving communities in the running of health services can improve social accountability and empower the poor, which may be seen as a goal in itself. Other community-level influences on health outcomes—the environment (broadly defined) and infrastructure—are also important, but are covered elsewhere in this volume.
- 3) **Health services.** A number of aspects of health service provision should be considered. Most obviously, there is the question of accessibility: whether or not services are sufficiently close to the population they serve and whether or not the infrastructure is sufficiently good to enable access. There is also the issue of whether or not the facilities have a sufficient supply of key inputs—drugs, vaccines, and so on. Other important dimensions include organizational quality, technical quality, and efficiency. Throughout, a key question is how the poor are served. Also important is the financing of health care. How much do different groups have to pay out of pocket? Who is covered by some form of insurance scheme—whether public or private—and for what risks? How far do people with insurance share risks with the insurer through copayments? How is health insurance financed?
- 3) **Other sectors.** Obvious examples of other sectors to examine are the market for food, the education sector, the transport and infrastructure sectors, energy, and water and sanitation. Other examples include pollution, workplace health hazards, and so on. The issue of how to assess the role of these sectors in improving health outcomes is addressed elsewhere in this volume (see, for example, part 4, “Rural and Urban Poverty;” part 6, “Private Sector and Infrastructure;” and chapter 11, “Environment”).
- 3) **Government.** Governments have at their disposal a number of instruments to influence the provision of health services, in the public sector and also in the private and charitable sectors. They also have ways of influencing the way that health services are financed, and can exert a considerable influence over sectors beyond the health sector. They can also influence households (for example, by improving the education of women) and communities (for example, by giving communities a degree of control over the planning and management of the health facilities in their area).

Prioritization. After analysis comes prioritization. Although putting together policies aimed at improving the health of poor people and reducing the impoverishing effects of ill health means contemplating actions in a variety of areas, this does not mean that countries should try to do everything. Resources—financial and human—are limited, and it is essential to draw up priorities based on assessment of the likely payoffs associated with various policies, their impact on poor people, and the resources required to implement them. This stage is likely to involve learning from the experiences of other countries and a dialogue within the country between the various stakeholders.

Setting targets, and monitoring and evaluation. Targets have to be set realistically, and progress toward them needs to be monitored. The success of policies in terms of moving the country toward those targets also needs to be evaluated.

A conceptual framework. Figure 18.3 provides a conceptual framework linking the areas discussed thus far. Working from left to right moves from diagnostics, analysis, and prioritization to policies and actions; working from right to left signifies the monitoring and evaluation of the effects of these actions. The chart thus makes clear the steps between policy action and improved outcomes, and can help structure the process of producing a PRSP for health, nutrition, and population and can aid as a means of identifying desired outcomes, actions to achieve those outcomes, and inputs required to produce the actions. The process itself may be as important as the actual PRSP in gaining consensus on the key problems and how to address them, on the risks that will have to be managed to succeed, and on what should be measured to monitor and evaluate performance.

Figure 18.3. A Conceptual Framework for Linking Government Policies to Health Sector Outcomes

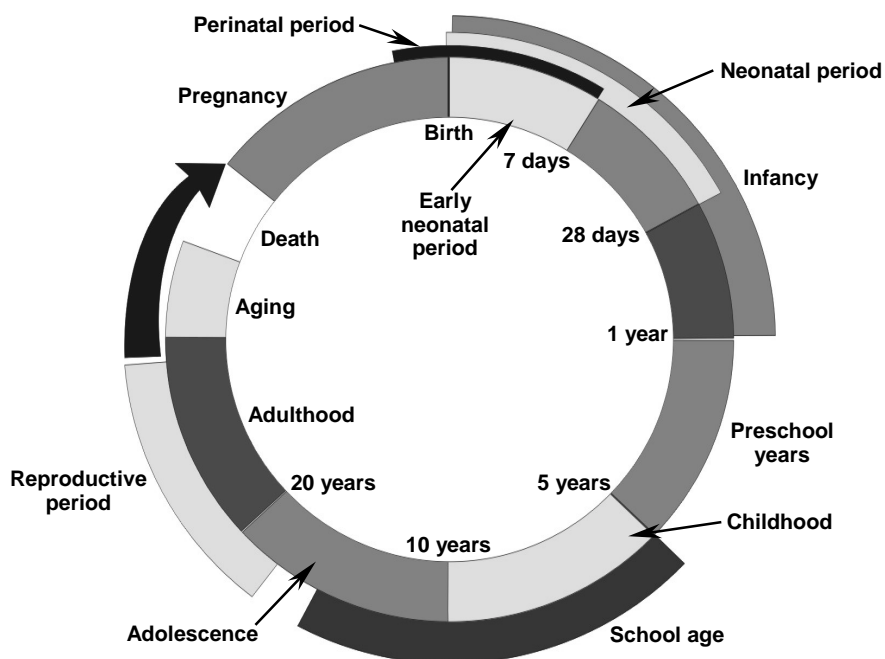


18.3 Health Sector Outcomes: Diagnosis

Diagnostics is the first step. This section shows how the two key outcomes—health and impoverishment—can be measured, and where PRSP teams can look for evidence on them.

18.3.1 Health outcomes

Lifecycle. The concept of health is a broad one, embracing health status, nutritional status, morbidity, fertility management, disability, and mortality. It embraces not just the health of young children but also the health of older children and adults. It also embraces reproductive health—the health of women during and after pregnancy, and unwanted pregnancies. A useful way of organizing a health assessment is to focus on the lifecycle (see figure 18.4), which starts in pregnancy and moves through birth, infancy, childhood, the school years, adolescence, adulthood, and aging to death. In the reproductive period, the lifecycle comes full circle, with pregnancy and the birth of a new generation. This framework highlights four principles. First, health interventions have a cumulative impact: the benefit, nature, and cost of interventions at a later age is partially dependent on earlier interventions. Second, prioritizing interventions at several points across the lifecycle is needed to sustain improvements in health outcomes. Third, interventions in one generation bring benefits to successive generations. The most obvious of these are good prenatal care and programs that help teenage girls delay pregnancy, both of which give babies a healthier start in life. Finally, the approach also facilitates identification of the key risks for families and associated gaps in the health system; hence, where interventions can break the cycle of poverty and ill health.

Figure 18.4. The Main Stages of the Lifecycle

Risks and outcomes vary over the lifecycle. At each stage of the lifecycle there are risks to health, and associated with each is a corresponding outcome indicator. For example, during the first year of life (infancy) there are risks of illness, poor nutrition, slow growth and development, permanent impairment, and even death. The corresponding indicators include the incidence of specific illnesses (such as diarrhea, pneumonia, or disabling diseases such as polio and diphtheria), low weight for age (underweight), low height for age (stunting), and death (infant mortality). Technical note O.1 contains lifecycle risk and indicator sheets for all the various stages of the lifecycle, including adulthood. The note outlines the major risks at each stage of the lifecycle, the corresponding outcome indicators, and their definition and measurement. Some of these are included among the international development goals (see box 18.2).

Assembling diagnostics on health outcomes by poverty grouping. It is not necessary—and in many countries is simply not feasible—to assess all of the various health outcomes for all stages of the lifecycle. What can be done is to select, for as many stages of the lifecycle as possible, key health outcome indicators for which data are available. It is vital for the PRSP that data should be assembled not just for the population as a whole, but also separately for different poverty groups (see box 18.3). PRSP targets need to be set not just for national averages, as has been the case in the four PRSPs to date, but also for the poor. (See section 6 for further discussion of target-setting.) Data such as those represented by figure 18.5 have been produced (for one year only, so far) for 48 countries, including many HIPC (heavily indebted poor countries) and IDA (International Development Association)-member countries. The data cover maternal and child health (MCH) outcomes, and derive from the Demographic and Health Survey (DHS) data (see technical note O.1 [Section O.1.2]). The references in the technical note discuss how countries can generate similar data from other surveys. Also useful are disaggregations by geographic area, especially if these can be linked to poverty maps.

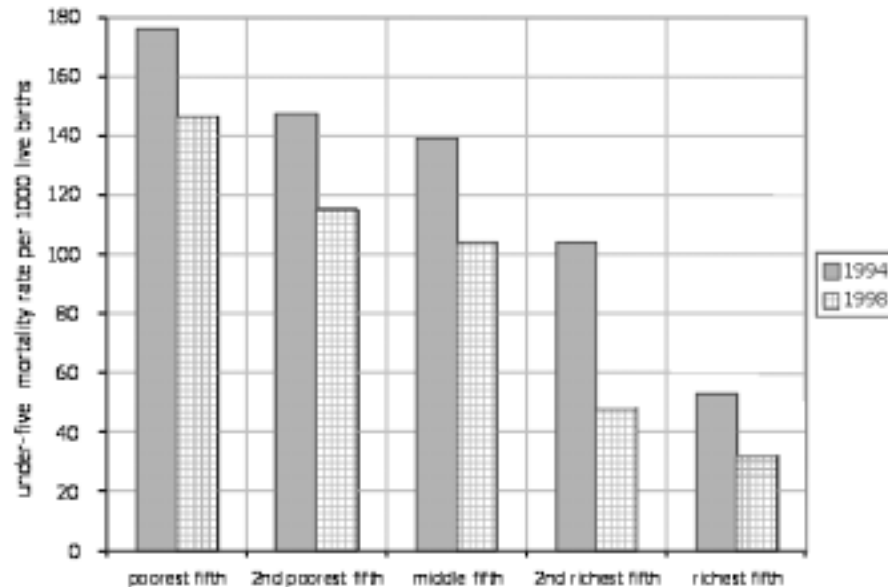
18.3.2 Financial protection outcomes

The impact of health spending on household living standards. Data from household expenditure or multipurpose surveys on health spending by quintiles of living standards can provide a useful indication of the extent to which health spending compromises the ability of households to finance other consumption. Expressing the data as a proportion of household income allows one to assess progressivity. However, spending could be progressive (poorer households spend less on health as a proportion of their income than richer households) and yet households in poverty or close to the poverty line might

Box 18.3. Improvements in Population Averages May Mask Widening Inequalities

Box 18.1 showed how poor children have worse survival prospects than better-off children. Examination of the data for each fifth (or quintile) of the population reveals that survival prospects worsen progressively as one moves across the income groups from richest to poorest (see figure 18.5). It is also evident that there is no guarantee that the poor will, over time, see the same proportional (or even absolute) improvements in their health as the better-off. Figure 18.5 shows that in Bolivia over the period 1994–98 the largest proportional reductions in under-five mortality were in the second-richest and the richest quintiles, and that the largest absolute declines were in the second-richest and middle quintiles.

Figure 18.5. Changes in Under-Five Mortality by Poverty Grouping, Bolivia



Source: Data from Gwatkin and others (2000).

nonetheless find it hard to cope financially with unforeseen health payments. An alternative approach would be to examine households' actual living standards relative to the poverty line, and then compare this with where they would have been in the absence of the health "shock" that necessitated the payments. From such calculations, it is possible to compare the change in poverty—as measured by the headcount or the poverty gap—attributable to health payments. Calculations along these lines suggest that out-of-pocket spending on hospital care might have raised the headcount in India by two percentage points, and that out-of-pocket payments for all health services might have raised the headcount in Vietnam by as much as four percentage points. While somewhat crude, these calculations provide some indication of the degree of impoverishment attributable to the burden of health care payments.

18.4 Households and Communities

This section begins with a summary of the evidence on the household actions and risk factors that make for good health. It then shows how countries can assemble evidence on the extent to which the health of its population and subsections of its population are compromised by households getting locked into actions that are not conducive to good health. It then shows how countries can assemble evidence on how far this is due to factors at the household and community levels. Section 18.5 looks at the role of the health system.

18.4.1 Key Health-related household actions and risk factors

Extensive scientific evidence is now available on the factors that contribute to good health outcomes in childhood, the reproductive period, and adulthood. For example, much is known about preventive and

curative health services that promote good health among small children; sound dietary and sanitary practices; and the importance of stimulation for young children. Corresponding to these various health service interventions is good information about the training and resources required to deliver the services. Much is known, too, about how to alter household choices and actions through behavior change and communication (BCC) programs. Specialized agencies such as UNDP, UNICEF, the United Nations Program on HIV/AIDS (UNAIDS), the United Nations Population Fund (UNFPA), and the World Health Organization (WHO) have extensive resources on these issues. The lifecycle sheets in technical note O.1 provide summaries of what is known about the interventions, household actions, risk factors, service delivery issues, and policy issues that are relevant at each stage of the lifecycle, including the intersectoral issues that are so important for diseases such as AIDS.

Assembling evidence on household actions and risk factors by poverty grouping. The key household actions and risk factors vary widely across countries. For example, in Chad, only 10 percent of children are immunized, while in the Kyrgyz Republic the figure is nearly 70 percent. In Uganda, 70 percent of infants are exclusively breastfed; in Senegal, only 9 percent are. The factors directly influencing health outcomes also vary widely within countries, especially between poor and nonpoor households. The preparatory work for the Burkina Faso PRSP, for example, noted that poor children in that country are less than one-third as likely as rich children to be delivered by a medically trained person. When they have diarrhea, children in Burkina Faso are only half as likely to be treated with oral rehydration therapy, and they are less than one-third as likely to receive a full course of childhood immunizations. The pro-rich bias in public health services in developing countries is not confined to MCH services. In India, for example, as in many other developing countries, the better-off make greater use not only of private hospital services but also of public hospital services. Technical note O.1 discusses how survey data and other methods can be used to assemble evidence on the key household actions and choices, including health service utilization, and risk factors. For many of those actions relevant to MCH outcomes, disaggregated data by poverty group are available for 48 countries.

18.4.2 Household influences on health actions

The ability of households, especially poor ones, to obtain appropriate health services, adopt healthy dietary and sanitary practices, and so on and so forth depends on a variety of factors, including several at the household level.

The role of household finances. Poor households have limited resources at their disposal—not just money and in-kind income, but financial assets and physical assets, such as land and animals. Low levels of wealth, and especially of wealth that can easily be converted into cash, is a major constraint for poor households in times of illness and crisis. Also important is the variability over time, or the riskiness, of an income stream, whether in cash or in kind. As the World Bank's *World Development Report 2000/2001: Attacking Poverty* emphasized, insecurity—of income, of food, of access to health services—is one of the many deprivations suffered by the poor.

Using household surveys to see how household finances matter. Household surveys provide one of the best ways of getting evidence on these issues. Many allow estimates of household consumption to be derived (household consumption is usually considered to be the best measure of a household's living standards, since it takes into account the household's production of food and smoothes out short-term fluctuations), but some surveys contain income data but not data on consumption, and some do not contain even these. In such cases, measures of household resources can be constructed using data on housing characteristics and ownership of assets such as consumer durables or cars (see technical note O.1 [Section O.1.2]). One way of determining the impact of income or consumption on health-related actions is to link measures of health-related household actions and choices (for example, service utilization) to data on income, consumption, or other influences, using a multiple regression framework: a large estimated effect of income for specific groups or a large effect (by international standards) for the country as a whole would suggest that low income is a serious barrier to beneficial health actions, such as utilization of health services. An alternative is to use direct questions on the impact of income on service utilization. Many Living Standard Measurement Surveys (LSMSs), for example, ask respondents who were ill but did not seek care if this was because the care was likely to be expensive. Responses to this

question were used in the preparation of the PRSPs in Burkina Faso and Mozambique, where 24 percent and 35 percent respectively of respondents reporting sickness but not seeking health care said their decision to not seek care was based on financial considerations (see section 6 for further discussion of the issue of household finances).

The role of knowledge. The human assets in the household—knowledge, literacy, and education—are also important. Knowledge about health issues is especially important: lack of such knowledge, which is especially common in poor households, often leaves members of the household unaware of available healthcare opportunities. Household surveys typically inquire about the educational attainment and literacy of household members. Of special importance here are levels of general education and the health-specific knowledge of women and girls, and some surveys specifically address this question. For example, the preparatory work for the Tanzania PRSP noted that poor women were less likely to know the sexual transmission routes of HIV/AIDS than better-off women. Regression analysis may help to shed light on the question of whether lack of knowledge, especially among specific groups, acts as a barrier to beneficial health actions, but, as with income, some surveys seek to elicit this information directly from the respondent. The immunization example from India in technical note O.2 provides an example of how such a question can be used effectively: the survey data made it clear that lack of knowledge about the benefits of childhood vaccination was one of the main reasons for poor households not vaccinating their children. In a similar vein, the work underpinning the Mozambique PRSP cited evidence showing that it is not lack of food that is the main cause of malnutrition in that country, but rather lack of knowledge on the part of the caregiver and a consequent lack of diversification of diet. The use of focus groups and other qualitative data are also important here, enabling countries to dig deeper into the “why” questions than is usually possible with quantitative data.

The balance of power within households. It is not just the overall level of household resources that matters. In many societies, the balance of power within households is unequal between men and women. Women may have little control over household finances and may play a minor role in decisions about the use of contraceptives to prevent unwanted pregnancy or of condoms to prevent sexually transmitted infections. Mothers may also be constrained in the household when seeking health care for themselves or their children. This unequal power, which may be more pronounced in poorer, less educated households, is a major risk factor for poor reproductive health outcomes and the poor diet of many women. Some demographic and health surveys (DHSs) ask about women’s control over their earnings and about their involvement in family planning decisions; answers to these questions can be used to gauge the extent of intrahousehold inequality.

18.4.3 Community influences on health actions

Cultural norms. Poor communities are often traditional communities, so values, norms, and cultural gaps are key factors affecting their health. Traditional social norms often impede women’s access to resources such as land, extension services, credit, and education, and in turn these impediments limit their capacity to engage in productive work, to seek health care, and to devote time and energy to childcare. Better reproductive health, along with the empowerment of women and their partners to manage fertility, are interventions that work best when they fit into cultural and social norms, but they also can help women break through some of the cultural barriers they face. Different ethnic groups have different values, norms, and beliefs, and these often have both poverty and gender dimensions. Female genital cutting, for example, is determined largely by the existence of a cultural norm. Health programs, however, do not always respond appropriately to differences in norms and values. Cultural constraints such as social taboos surrounding the issue of disability may constrain individuals from taking advantage of the available health and rehabilitation resources. Measuring shared attitudes, norms, and values is complicated, but focus groups, consultation, and other qualitative exercises have been used with great effect to generate insights, from detailing the intricacy with which networks are constructed and reproduced to identifying the various means by which marginalized groups are excluded from equal participation in formal institutions such as banks, courts, and health insurance.

Community institutions. Community institutions, such as community health services, and civic associations, such as youth clubs and women’s groups, matter for health actions. Their impact on health

outcomes is felt not only through their influence on actions but also through their impact on health service provision. Community groups often manage to mobilize community action and resources for better health and nutrition outcomes; they can also play an important role in the oversight of health services, improving social accountability and enabling decisions to be better linked to community needs and preferences. This has been the case, for example, in Burkina Faso, where the work underpinning that country's PRSP was argued to have resulted in improvements in the quality, affordability, and stability of local health services. The activities of community groups can include (1) informing the poor where they can obtain essential services and drugs and at what cost, and how to prevent communicable diseases at household level; (2) organizing the poor to participate in the planning and targeting of specific health services and monitoring the availability and prices of these services and the extent to which they reach the poor; (3) providing a supporting environment for household health practices; and (4) providing institutional support to community comanagement, cofinancing and coplanning services and building the capacity of local organizations (such as local health boards with the participation of the poor) so that they can become real forces to counterbalance and to support the power of public private providers or contractors.

Social capital. The term “social capital” is used to describe the norms and networks that facilitate collective action, such as the setting up of a community nutrition program. There is some statistical evidence, mostly from industrialized countries, that high levels of social capital are associated with better health outcomes, but the evidence noted above relating to Burkina Faso is also consistent with this. There are three key layers of social capital: ties within the community, or “bonding”; relations between members of different communities, or “bridging”; and connections between communities and formal institutions, or “linking.” The poor—as both a cause and consequence of their condition—typically have a lot of the first, a moderate amount of the second, and very little of the third. A challenge for governments is to build on the bonding social capital of poor communities to support and to forge more extensive bridging and linking ties. Schemes like the Burkina Faso one and others like it in the Bamako initiative require social capital to work. Several household surveys inquire about trust and other attitudes, or about the nature and extent of people's participation in the civic life of their community. Answers to these questions, along with other exercises such as focus groups, may shed light on the extent of social capital and help understand its role in shaping health-related outcomes.

Environment and infrastructure. Environmental factors, broadly defined, are known to have an important impact on health, directly and via their impact on actions. Examples include indoor and outdoor pollution, poisoning, water-borne disease, illness associated with poor sanitation, overcrowding in urban slums, and work-related health risks, including those faced by young child laborers. Infrastructure also matters—especially roads and transport, since this directly influences the time costs that households incur when using health services (see section 18.5.1)—and so do electricity and telecommunications. (These issues are covered in depth in part 4, “Rural and Urban Poverty”; part 6, “Private Sector and Infrastructure”; and chapter 11, “Environment.”) It is important when assessing the factors that hold back poor households from achieving good health outcomes that these be taken into account. For example, regression studies often find that water and sanitation at the community level influence individual child health outcomes, and that the passability of roads influences household use of health services. Failure to model such effects could lead to biased estimates of the effects of, say, household income on health outcomes and service utilization. Household surveys, coupled with good community questionnaires, can often shed light on the levels of and gaps in environmental and infrastructure factors, and may help to establish their effects.

18.5 The Health System

Health systems vary. The basic function of a health system is to ensure that providers deliver health services to patients. This is accomplished through a structure of payments and regulations, and this structure varies from one system and subsystem to the next. Patients sometimes pay providers the full cost directly out of pocket, for example; in other cases they may pay only partially directly out of pocket, with a third-party payer—the government or a private insurer—paying the balance to the service provider. For example, in a typical Ministry of Health (MoH) scheme, households pay taxes or compul-

sory contributions to the government, which owns and provides budgets to health facilities, the staff of whom are government employees and are probably paid by salary. Patients either receive services free at the point of delivery, or pay a subsidized fee for them, possibly with the fee varying by income. Another example would be a community health insurance scheme in which enrollees pay a premium and in exchange have the right to use facilities operated by the scheme for a nominal fee. In both of these examples the provider is paid by the third-party payer through a budget or salary, and the provider is part of the insurance or financing organization. Such organizations are known as integrated organizations. In an alternative model, the provider is not part of the organization but instead provides services to enrollees of the insurer on a contractual basis: the MoH might, for example, contract with an NGO to provide certain services instead of delivering them itself through MoH clinics. This is an example of a contract model.

But health systems are judged by the same criteria. Whatever its organization, a health care system will be judged largely according to two criteria: How well does it get high quality and appropriate services to those who need them most, especially the poor?, and do payments for services leave some groups—especially the poor—unable to afford other essential commodities such as housing and food? This section identifies several key dimensions of performance in service provision that influence the quantity, quality, and appropriateness of health service utilization, especially among the poor. It also identifies several key dimensions of a country’s financing system. In sum, what cover do people have against different types of health expenses, and how do they pay for them?

18.5.1 Health care provision

The key steps to quality health services for the poor. This section outlines the tools that are available to countries to capture the key features of health service provision and to assess the performance of health services in terms of their impact on health-related behavior and ultimately health outcomes. The tools presented in this chapter have been used in several interim PRSPs and in some full PRSPs. To a high degree, the provision of quality health services is sequential if services are inaccessible, the issue of whether or not they are staffed properly is irrelevant; if they are accessible but not properly staffed, the issue of whether or not they are properly stocked is irrelevant, and so on. There is little point making progress on one step of the ladder if the system fails badly on the previous step.

Are services physically accessible? Health facilities should be sufficiently accessible to the poor to enable them to make use of them. Distance is clearly one issue in this regard, but so too is travel time, which will depend on the availability of roads and public transportation. In Africa and many other places, it may be important also to consider the seasonal variation of physical accessibility. The physical infrastructure of facilities also matters—stairs, for example, may impede accessibility to persons with disabilities and other physically impaired people. Surveys can be useful here. The work leading up to the PRSP in Burkina Faso, for example, cited survey evidence that 40 percent of health center users had to walk more than one hour to reach the center; and the work underpinning the Mozambique PRSP cited survey evidence that 38 percent of people who had been sick but had not sought care had not done so because their local facility was too far away.

Are human and material resources available? Services may be geographically accessible, but essential inputs such as drugs, vaccines, contraceptives, micronutrients, or trained staff may be unavailable or in short supply part of the time. Are essential resources available for the poor? Again, surveys can be useful. Household surveys supporting the Mozambique PRSP, for example, showed that although a relatively small proportion of sick people not seeking care cited a lack of drugs as the reason for their not seeking care, almost all of those who did cite this reason were rural residents. Surveys and inspections of health facilities are also useful. The work underlying the Burkina Faso PRSP, for example, reported that, when inspected, nearly 20 percent of facilities had run out of essential vaccines, and in 24 percent of centers the refrigerators for storing the vaccines did not function. The Mauritania PRSP reports drug shortages as the most important reason explaining the low level of use of services. The problem of staff shortages in rural areas also is fairly widespread in the developing world. The authors of the *Voices of the Poor* report for Somaliland (World Bank 1999), for example, noted that “rural people said they rarely see health workers

in their localities. If some people have been trained for the villages and other main grazing areas by international agencies, they are not now functional.”

Is organizational quality good? The way health services are organized may deter patients from using services, with hours of operation, waiting time, perceived low quality, gender of providers, lack of courtesy, and required under-the-table payments all potential problem areas. In *Voices of the Poor*, public health facilities were frequently criticized for their long waiting times and rude staff. Household surveys and qualitative consultation exercises are a useful means of shedding light on this issue.

Are services produced relevant? Of concern is the provision of services relevant to the diseases faced by the poor. Although a core package of interventions may be defined, these interventions may not be the ones that are provided in practice. It is therefore critical to examine the case mix of services units and to assess whether or not priority is really given to the most relevant interventions. The performance of health sectors in raising utilization or maintaining high utilization of essential interventions can be measured by assessing the quantity of services produced in a specific area and relating it to the income level of the population of that area. Such a mapping of equity of output production is conducted routinely in Mozambique, where an index is constructed using basic information on children immunized, the proportion of women using antenatal services, and the number of inpatient and outpatient visits.

Are services delivered in a timely way? Is there continuity? Certain key health services, such as emergency obstetric care and epidemic control measures, must be delivered in a timely manner. For other services, such as the completion of tuberculosis treatment or immunizations, continuity is the essential determinant of efficacy and outcome improvement. One indicator of continuity is the proportion of children who are fully immunized. This was used in a study of continuity of care in Benin, where it was found that this measure increased from just over 30 percent in 1988 to around 80 percent in 1996, thanks largely to the introduction of financial incentives to health staff provided on the basis of the rate of children fully immunized against diphtheria.

Is there provision of services of high technical quality? The term “technical quality” is meant to capture the variations across providers or patients in the impact of a particular service on health status. Health facilities in developing countries, especially those serving the rural poor, are often plagued by low levels of training and competence. Health facility surveys undertaken by WHO in the 1990s found that in Burundi only 2 percent of children with diarrhea were correctly diagnosed, compared to 78 percent in Vietnam. Among those correctly diagnosed, there were large variations across countries in the proportion correctly rehydrated, ranging from 0 percent in six (out of 34) countries to around 70 percent in Rwanda and Vietnam. It seems likely that differences in the quality of care are likely to exist within countries too, with lower levels of quality likely in facilities serving poor people.

Is there social accountability in service delivery? Consultation exercises are an especially useful tool for getting evidence on the extent to which health systems and service providers are accountable to their clients and communities, and in particular to their poor clients. Surveys can also be conducted to measure the extent to which joint management contributes to local decisionmaking. A survey conducted in Benin in the early 1990s showed, for example, that about one-third of the health management committees were truly triggering genuine accountability to users, while one-third were considered somewhat functional and the last third were only a matter of token presence. Revision of the election modes and provision of incentives for women to participate in these committees contributes to improving the situation and health committees have grown into powerful forces in the Benin health system today.

A framework for diagnosis and action. The health sector’s performance can be assessed by looking at measurable factors that affect how the sector interacts with clients (see table 18.1, first column). Examination of these factors can help identify the key obstacles to better performance in providing essential services to the poor, and thus enable countries to focus on the determinants that are most problematic. This instrument can also provide a checklist for monitoring improvements in system performance. What should emerge from this analysis is a prioritized set of feasible, time-bound actions with known costs for which there are adequate financial resources (see box 18.4).

Table 18.1. Relationship between Performance and Structural Dimensions of the Health Sector

1. Key determinants of the sector's performance	2. Examples of the nature of the problem identified	3. Instruments available to change each characteristic (see section 6 for an explanation)
1. Physical accessibility	Low access to clinic services and to community-based activities	<ul style="list-style-type: none"> ⤵ Public, private, nongovernmental mix ⤵ Core health packages ⤵ Human resources
2. Availability of human and material resources	Shortages of drugs, vaccines, and trained staff	<ul style="list-style-type: none"> ⤵ Pharmaceuticals ⤵ Human resources ⤵ Stewardship
3. Organizational quality	Inconvenient opening hours and lack of privacy	<ul style="list-style-type: none"> ⤵ Human resources ⤵ Community/civil society participation
4. Relevance of services	Mix of services does not correspond with basic package	<ul style="list-style-type: none"> ⤵ Public, private, nongovernmental mix ⤵ Core packages ⤵ Pharmaceuticals ⤵ Contracting and purchasing ⤵ Stewardship
5. Timing and continuity	Weak linkages with community structures; poor supervision	<ul style="list-style-type: none"> ⤵ Community and civil society participation ⤵ Contracting and purchasing
6. Technical quality	Inefficacious services because of failure to respect treatment standards	<ul style="list-style-type: none"> ⤵ Contracting and purchasing ⤵ Pharmaceuticals ⤵ Human resources ⤵ Stewardship
7. Social accountability	No voice of the poor in delivery of services	<ul style="list-style-type: none"> ⤵ Community and civil society participation

18.5.2 Health financing

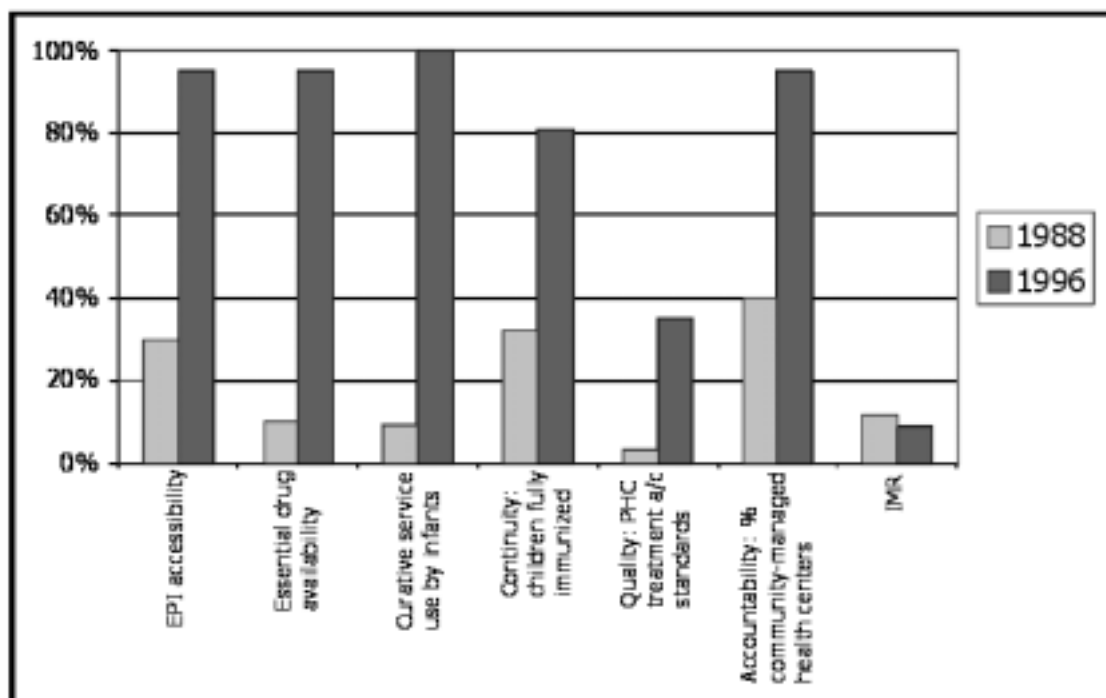
Reducing the role of user fees and out-of-pocket payments. There are numerous ways governments, employers, private companies, and communities can reduce the amount households pay out of pocket when they use health services. Governments can have low user fees or do away with them altogether, and finance the use of health services through taxation. If they do levy fees, they might try to exempt certain groups, such as the poor, through fee-waiver schemes. These schemes have to be financed, of course, and this can be done through, for example, tax revenues. The government also might employ a social insurance scheme for formal sector workers, as either an alternative or a supplementary scheme. Employers might have their own health insurance schemes, arranged in-house or through a private insurer, with workers paying through wage deductions. Private insurers may offer coverage with insurees paying premiums to the insurer, and communities may offer a community-financing scheme whereby those enrolled pay a membership fee or premium to the scheme and in return have lower user charges when they use the services covered by the scheme. What all of these schemes have in common is that people enrolled in or covered by the scheme do not pay the full cost to service providers at the point of use, and the shortfall is financed, in the first instance, by the third-party payer, but ultimately by households through, for example, premiums, contributions, or taxes. All of these schemes are in effect insurance schemes of one type or another, even though they may not usually be thought of as such.

Who is covered by insurance? Health insurance thus provides a way of both increasing the utilization of health services, by reducing the cost at the point of use, and of reducing the impact on household incomes of service utilization. The question of who is covered is important since insurance coverage or the lack of it affects the amount of money people pay out of pocket for health care, which affects their usage of health services and the amount they have left for other consumption after they have used them.

Box 18.4. The “Steps” Framework in Action in Benin

Some countries have attempted to orient the reform of the health sector toward better serving the poor, using a matrix of health sector performance as a starting point to define priority actions (see table 18.1). In Benin, for example, 1989 health system reforms provided the basis for improvements in most health indicators. Infant mortality, for example, dropped from 114 per 1,000 in 1987 to 88 per 1,000 in 1996, exceeding the drop in neighboring countries that were at comparable levels of household consumption. Regular reviews of the sector’s performance in improving key determinants of health outcomes are seen as an essential element of “a virtuous cycle of implementation” in Benin (see figure 18.6). Similar applications of this framework have been undertaken in Guinea and Mali, among other places.

Figure 18.6. Benin: A Virtuous Cycle of Implementation



Sources: Tanahashi 1978, Knippenberg 1986, Miller 1989, Soucat 1997, Knippenberg and others 1997.

The first questions to answer here are: (1) what schemes operate? (2) who is covered by each? and (3) how does the coverage vary across poverty groups?

What is covered by insurance? In both the public and private sectors, there will be some element of “risk pooling” (except in cases in the private sector where there is no insurance of any kind). For example, premiums collected by an insurer from all enrollees will be pooled and used to finance claims from those enrollees who fall ill and seek treatment. The size of the pool and its diversity will influence the benefits offered and the level of premiums and copayments. For example, a small-scale community-financing scheme in a poor rural area will not be able to offer generous benefits per dollar of premium without large copayments, since the probability of illness will be fairly high across the pool. By contrast, a government-run compulsory tax-financed scheme will be able to offer more generous benefits per dollar of tax revenue since the risk pool will be larger and more heterogeneous, and its average risk will be lower. Against this has to be set the greater complexity associated with a large pool and the lower degree of control exerted by the poor. The next questions to answer are therefore: (1) what do the different schemes cover, and what do they leave uncovered? and (2) are the poor covered against the potentially impoverishing costs of catastrophic illnesses? Of course, in the case of public insurance, what is and is not covered may not be written down. For example, the health background document for the Tanzania PRSP noted that as public funding for public clinics has declined, the range and quality of services offered by rural clinics has also declined, thereby reducing effective insurance coverage and forcing people to seek treatment with NGOs or private providers.

How much risk-sharing is there? In many schemes, coverage will be incomplete and the enrollee will be liable for a copayment in the form of a user fee. The size of such fees and whether or not they are affordable for the poor can be assessed by calculating the average user fee per unit of utilization (for example, inpatient day or outpatient visit) and expressing it as a proportion of household income. This can be done for different incomes—say, for the average income of the poorest 20 percent, the next poorest 20 percent, and so on. For example, in Vietnam in 1998 the average user charge per spell of inpatient care in a public hospital was equivalent to 45 percent of the poorest quintile’s average annual nonfood expenditure. The comparable figure for the richest quintile was just 4 percent. Even a visit to a polyclinic absorbed 9 percent of the poorest quintile’s average annual nonfood expenditure. Of course, fees may not be the same for everyone in a particular scheme. Are there any fee-waiver schemes in operation? What proportion of the poor and other groups benefit from them? Are there differences between those who are beneficiaries in principle and those who are beneficiaries in practice? In some cases, there may be a gap between notional insurance coverage and effective coverage because of informal and/or under-the-table payments, which can be significant. The preparatory work for Mozambique’s PRSP, for example, suggested that informal payments “play probably the most important role in hampering access of the population to curative services.” It also acknowledged, however, that “no valid systematic research has been carried out on the topic.”

How much do people pay for health insurance? Health insurance, whether public or private, has to be financed somehow. An MoH scheme might be financed principally through taxes. A social insurance scheme might be financed through payroll taxes, though it is not uncommon for general tax revenues to be used to subsidize the scheme. A private insurance scheme will typically be financed through insurance premiums, though here too there may be a tax subsidy. Community-financing schemes are financed through contributions from members, sometimes with cofinancing from a donor or government. It is important to know (1) how much different poverty groups pay into these different schemes, and to what extent taxes, social insurance contributions, and private insurance premiums are a burden to poor households, and (2) how far the costs of enrollment in voluntary schemes act as a deterrent to poor people joining them.

What is the cost of services not covered by insurance? The amount that households—especially poor ones—pay for services for which they are not covered, whether or not lack of coverage for these services deters the poor from using the services, and whether or not the services are affordable for the poor again can be established by calculating the average out-of-pocket payment per unit of utilization and expressing it as a proportion of household income, for different incomes.

18.6 Government policies and actions

The three levels of government action and how they interlink. Section 18.1 identified the three key levels of government action: the macroeconomic level, the health system, and the microeconomic level. Government decisions and actions at each level influence the amount that households pay for their health care and the quantity, quality, and type of services that they receive. It is important when preparing a PRSP to cover all three levels. Improvements at the macroeconomic level—by, for example, prioritizing spending decisions—will not by themselves make the health system work better, but they can provide an environment in which the system could work better. Developing a sector reform program that addresses key system, organizational, institutional, and incentive problems is an important complement to the macroeconomic level program because it can improve efficiency, efficacy, and impact. Improvements at the macroeconomic and system levels, however, even when accomplished together, do not accomplish the equally important third activity: the identification and testing of interventions at the microeconomic level to address specific health problems, and targeting the poor with needed inputs. These interventions need to be designed, financed, implemented, and evaluated, and absorbed as normal business when they are shown to work and replaced as they succeed and are no longer needed.

How the three levels of government action link with the conceptual framework. Table 18.2 shows the key decisions at each of the three levels, and lines them up with the two key components of the health sector in the conceptual framework—the provision of services, and their financing. The cells in the table

Table 18.2. Levels of Government Policies and Action

	Health service provision <i>(Who provides what to whom, and how are they paid?)</i>	Health financing <i>(How is the burden spread across households?)</i>
Macroeconomic level	<p>Government spending: Macroeconomic. How much should government spend overall? What should government spending be focused on and what should it leave to the private sector? How can it make its own spending more equitable (for example, by altering geographic allocations)? How can it prioritize its own spending across programs and activities, with a view to having the greatest impact on the poor? How can government ensure spending is properly balanced—for example, between labor v. equipment and consumables, and capital v. recurrent and maintenance?</p> <p>Government's role in input markets. For pharmaceuticals, key issues include selection, procurement, distribution, pricing, and quality. For human resources, key issues include training and skills, geographic distribution, retention and continuity, and governance and civil service issues (see chapter 8, "Governance").</p>	<p>Government financing: Macroeconomic. How are revenues to finance government spending to be raised? How much revenue should be raised through user fees? Should the poor be exempt from fees? How much should be raised through earmarked taxes or payroll taxes? Are revenues sustainable? How much public insurance cover should be provided, to whom, how, and at what cost?</p>
Health system level	<p>Improving delivery at system level. Who should provide publicly financed services: government facilities or others working on a contractual basis? How should these providers be paid to achieve best balance between efficiency and equity?</p> <p>Stewardship. Roles include coordination within the public sector and between the public and other sectors; quality assurance; regulation of private providers; dissemination of information to providers and users; and monitoring and evaluation.</p>	<p>Government financing: Health system. How should government charge for different services? How can government reduce or eliminate fees for the poor? What services and interventions should governments cover in their public insurance scheme? How far should revenue-raising be decentralized? How can cross-subsidization be introduced between areas where revenue-raising is substantially decentralized?</p> <p>Stewardship. Government can influence and oversee private insurance market and formal and informal payments levied by private and public providers; regulation can be used to effect change; monitoring and evaluation should be continuous.</p>
Microeconomic level	<p>Improving delivery at facility level. How can management quality and accountability be improved? Should local communities be involved in management and/or monitoring?</p> <p>Deciding what should be delivered and how. What services and interventions should government be focusing on? Should there be a core package? What types of facilities should be delivering the services, and what delivery methods should they be using? What types of community-based preventive services should be used? How will referrals be handled?</p>	<p>Government financing: Microeconomic. What is the best way for governments to collect revenues and make fee-waiver schemes work?</p>

present in summary form some of the key issues facing all countries. The rest of this section focuses on how these issues arise in the countries writing PRSPs.

18.6.1 Government policies and health service provision

Government spending: Macroeconomic

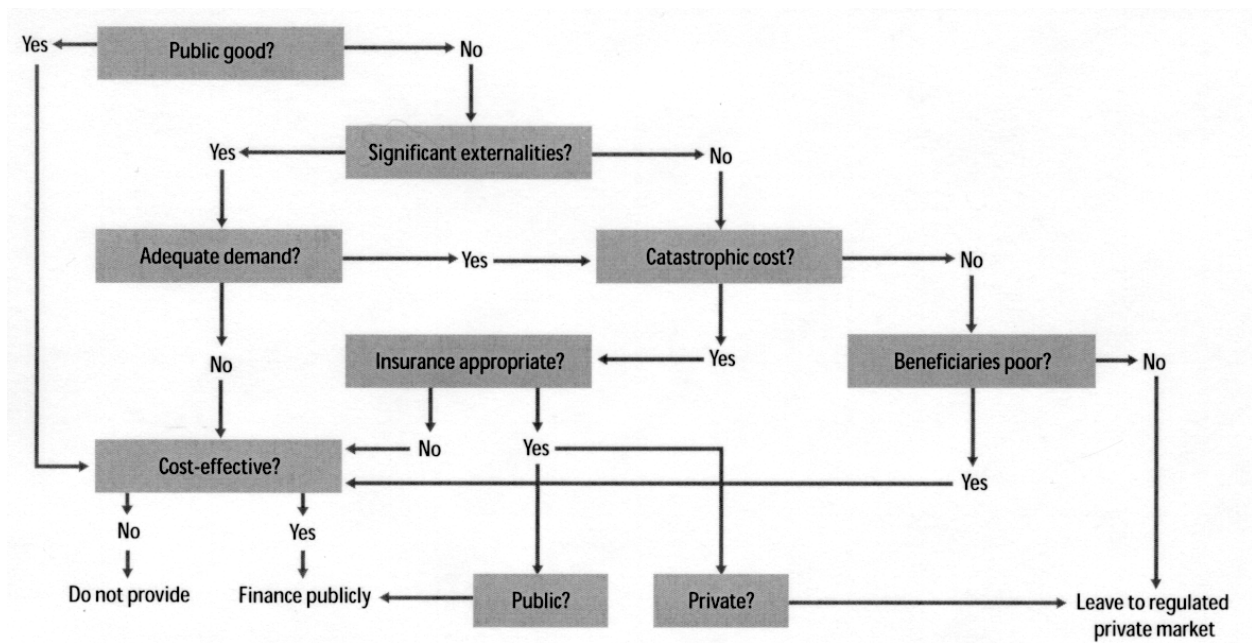
How much? In the poorest countries, total government resources spent on health are usually no more than US\$3 to US\$5 per capita, and private spending adds roughly the same amount, for a total of US\$6 to US\$10 per capita. For the HIPCs, debt relief can open some space to add possibly another 20 percent to public health spending. In considering whether government health spending should be increased further still, it may be useful to compare the country's level of public spending with the spending levels of

countries with a similar GDP per capita, especially neighbors, and to bring into the picture the size of the private sector and the health status of the population.

What should government be doing? It is vital to get the most out of the limited resources available and to improve equity by finding mechanisms to target spending on those least able to protect themselves. The PRSP team could usefully begin by reviewing spending on health, nutrition, and population. This should include all spending, whether direct or in the form of tax subsidies (for example, to insurance schemes), and should be geared toward the goals of the health system. Technical note O.3 provides a schematic for a health spending review, and technical note O.3 (Section O.3.4) a set of spreadsheets designed to convert an administrative budget into a program budget, along with an example of a public spending report from Tanzania. Within the goal of improving health outcomes, the review should be linked to the burden of disease in the country. Technical note O.3 (Section O.3.5) provides a spreadsheet-driven framework for burden of disease and cost-effectiveness analysis tied to public spending. Next, the team should consider which activities the government would do best to focus on, and which to leave alone (some of the latter activities may be addressed by the private sector). Figure 18.7 is a decision tree designed to help this thought process. It starts with the overarching issue of allocative efficiency by asking if the proposed spending is for public goods—generally population-based public health activities that protect many people simultaneously. If the answer is yes, the next step is to rank such spending for cost effectiveness—or even better, benefit-cost analysis—to decide which will be funded. If the proposed spending does not meet the criteria for public good, the decision tree moves through other relevant considerations: whether or not there are significant “externalities” (for example, smoking and risky sexual behavior, where the actions of one person affect the health and well-being of others); if a risk of catastrophic costs is involved; and if the proposed beneficiaries are poor. This is one example of how allocative efficiency, risk, equity, and cost effectiveness should interact to determine public financing decisions in health.

Making government spending more equitable. At the macroeconomic level, two key issues are how funds are disbursed geographically from the center and how locally raised revenues are shared across localities. Often, central funds are allocated in a highly inequitable way. The preparatory work underlying the Mozambique PRSP, for example, noted that Zambezia received less than one-seventh of the government spending on health per capita than Maputo City. One way to approach this issue is to use geographic resource-allocation formulae, the simplest of which allocates public funds geographically on a per-person basis. More sophisticated formulae would take into account the differing health needs of

Figure 18.7. Questions to Ask in Deciding What to Finance through the Public Budget



Source: Adapted from Musgrove P. Public spending on health care: how are different criteria related? *Health policy*, 1999, 47(3): 207–223.

different areas: for example, some may have a lot of young children and elderly people, some may have a lot of poor people, and some may have a lot of sick people. In some cases, additional funds might be allocated to take into account the differences in the quality and age of facilities or the different costs of maintaining them; for example, higher allocations may be appropriate to disease-ridden areas, or to rural areas to reflect the greater distances for outreach work and obtaining supplies and the greater difficulty of retaining staff there.

Balancing spending. Quality of services is partially determined by the overall level of spending, but also by the mix of spending. The quality of labor, capital, equipment, and consumables depend on balanced allocations on: (1) labor versus equipment and consumables, (2) capital versus recurrent spending, and (3) maintenance. Spending on labor, for example, of 45–60 percent of recurrent spending would provide a rough indication that the full complement of inputs would be available at the point of service if the system functions relatively well. Many developing countries have budgets that are overcommitted to labor costs. In the preparatory work underlying the Tanzania PRSP, for example, it was noted that 70 percent of the budget is spent on personnel.

Government's role in input markets

Governments have a major role to play in the two key markets that support and feed into the health system: the pharmaceutical and labor markets. The availability of drugs affects the clinical quality of health services, costs, and the perceptions of clients. Purchasing pharmaceuticals in the private market is also one of the main out-of-pocket expenditure items for the poor. Key aspects to be assessed include selection, procurement, distribution, pricing, and quality. Instruments for improving pharmaceuticals transactions market-wide include communications campaigns to improve the understanding of drugs among clients and sellers; social marketing to improve the quality and availability of drugs and family planning supplies; and impartial enforcement of regulations to protect consumers. By maintaining and disseminating essential drugs lists and pursuing policies to encourage use of low-cost, high-quality generic drugs, governments can improve the functioning of the pharmaceutical system. Procurement in the public sector can be improved through using essential lists of drugs, supplies, and equipment; use of competitive bidding; and encouragement of competition in logistics and distribution systems. The labor market, too, is a key issue. The quality, distribution, and responsiveness of health personnel influence the availability and quality of and the access to interventions by the poor. Issues to examine include the number and distribution of various types of providers, by geographical location and level of care; the retention capacity of the system for trained staff; the quality of education and skills (technical skills as well as responsiveness to the client); and the underlying incentives for provider performance, particularly in relation to poor clients. If civil service regulations prove to be an important constraint on the availability and quality of health personnel, this finding should inform the PRSP governance objectives.

Improving delivery at system level

In many countries, publicly financed services are (or could be) provided by private and nongovernmental providers. One issue the PRSP authors may want to explore is the extent to which different types of contracting are being used in the health sector, and whether or not these contracts include explicit provisions for serving the poor or incentives for improving pro-poor services. Could existing contracting mechanisms be modified or expanded to better serve the poor? Other service providers could be brought into the PRSP process to explore options for more effective use of contracts, secondments of staff, shared logistical systems, and government subsidies (especially generous contractual terms) to improve service delivery for the poor.

Stewardship issues in health provision

A core responsibility of government in a mixed system is to exercise effective oversight, or stewardship. Stewardship becomes more important as governments shift from direct service provision to a role dominated by policy—on population-based health interventions, financing, regulation of providers and

insurers; and on guiding the system and behavior through research, provision of information, quality enhancement activities, and careful use of financial subsidies. There are four key areas:

- **Regulation.** This area encompasses establishing and enforcing appropriate laws for governing the public and private sectors. This could include generic drug laws, and the use of minimum service standards as an eligibility criterion for providers that wish to benefit from public financing.
- **Coordination.** It is essential that Ministries of Health coordinate the charitable activities of external donors, coordinate within government across sectors, and provide a policy framework and institutions for coordination domestically across different players in the health sector. Coordination requires clear policies, leadership, and institutional methods. The preparation of the PRSP provides an opportunity to engage donors, program managers, other government ministries, and private/charitable providers in the process of assessment and taking action to improve results.
- **Monitoring and evaluation.** Any result-oriented activity, such as the PRSP, must be concerned with measuring impact. Crucial to this monitoring and evaluation (M&E) exercise is a focus on the poor, but also a focus on other disadvantaged groups. A gender-sensitive M&E strategy that evaluates how well women fare in the system would be especially valuable for women but would also be valuable for the poor.
- **Information.** The poor may use private, traditional, or charitable services as much as or more than public services. Public information campaigns about effective types of spending can be a useful way of improving the efficacy of out-of-pocket spending by the poor. Information that can improve the ability of consumers to choose providers and consume appropriate services should thus be given high priority, given the importance of household actions in determining outcomes. Also important is the dissemination of information that can protect consumers, such as product labeling, especially for pharmaceuticals and dangerous substances. In countries where labels would be less effective than other methods of dissemination, measures to improve awareness of hazardous products and actions could be made part of community health education programs. Finally, dissemination of best practice and new findings is also important. Often providers will change behavior simply when they discover a better way of doing their work, so knowledge can have a strong independent impact on quality.

Improving delivery at facility level

A key question is whether performance in the delivery of health services can be improved for the poor by increasing their voice in decisionmaking. There are several ways of realizing the involvement of the poor. One is to move to direct management of local clinical services, through community health centers or revolving drug funds, as in the Bamako Initiative. A second is to mobilize communities for health-promotion activities, from malaria prevention to improved water supply. A third is to involve the poor in monitoring the performance of facilities and providers. Assessing these different methods is a key task for the PRSP team. Another issue is how to improve accessibility. Physical proximity of health services to poor clients can be improved through investment decisions, but the fact should also be taken into account that better infrastructure may support quality and productivity improvements through enabling the consolidation of some services. Accessibility can be improved at lower cost not by duplicating available services in the private and charitable sectors, but rather by allowing clients more choice of service delivery outlets through contracts with NGOs and private providers, and by improving technical efficiency and incentives among public service providers. Moreover, NGOs may have greater experience in dealing with certain at-risk groups, such as people with disabilities or youth at risk of sexually transmitted diseases, than the government. Health care facilities that have shown to be costly or inefficient in treating their intended beneficiaries, such as residential institutions for the mentally ill or physically disabled, should be reconsidered in favor of lower-cost, higher-impact services, such as daycare facilities.

Deciding what should be delivered and how

Many developing and middle-income countries have developed core packages that define the health interventions that should be available at the village (health post), community (health center), and district

levels (district hospital). Effective packages respond in a cost-effective way to the needs of the poorest segments of the population, and represent priority activities for public financing. They should include services that respond to the burden of disease afflicting the poor and should be linked to poverty maps to facilitate geographical targeting. Figure 18.8 shows these key interventions in the context of the lifecycle of figure 18.4, covering the periods before birth, the first year of life, and into the next reproductive cycle. Virtually all of the interventions in figure 18.8 are community- and clinic-based, but they also require a supporting infrastructure of population-based services, communication and knowledge dissemination, school health, and environmental health.

18.6.2 Government policies and health financing

Macroeconomic issues

How are revenues to be raised? It is desirable that all public health, health education, and preventive services be subsidized to the fullest extent possible, recognizing that there are government budget constraints. If these services cannot be fully subsidized, policies can be pursued to encourage charitable activities in these areas. Given the typical resource-constrained public budget, some user fees will be necessary for acute services. Fees can be designed such that they do not create barriers at the point of use for the poor, however, through the use of waivers, prepayment, credit, or other options.

Are revenues sustainable? The issue here is whether or not the resources available to the sector are sufficient to ensure the provision of essential services to the poor. If the resources are insufficient to sustain the chosen package of interventions, priorities should be imposed to shrink the package to fit the resource constraints. Sustainability does not necessitate unlimited access to funds, but rather requires that hard decisions be made to ensure that the system delivers the highest-priority services over time.

What insurance should be provided and how? Another key issue is whether or not prepayment and insurance methods, when combined with public subsidies, can successfully create pools of poor and nonpoor individuals, thereby offsetting the higher health risks of the poor with the lower risks of the better-off. Often, risk pools are intentionally segmented to prevent such cross-subsidies, but an important issue for governments seeking universal access to basic services and separation between financing and provision is how these risk-sharing methods can become more inclusive of all income groups. Typically, it takes incentives, subsidies, and compulsion to achieve this goal. The existing and potential methods for pooling revenue from the various socioeconomic groups should be determined and it should be established whether or not there is sufficient capacity for managing and regulating these insurance and prepayment schemes. It is never too soon to begin developing this capacity, but creating risk pools that include the poor tends to be part of a long-term strategy of reform that separates financing from provision and gives facilities the autonomy to manage their affairs.

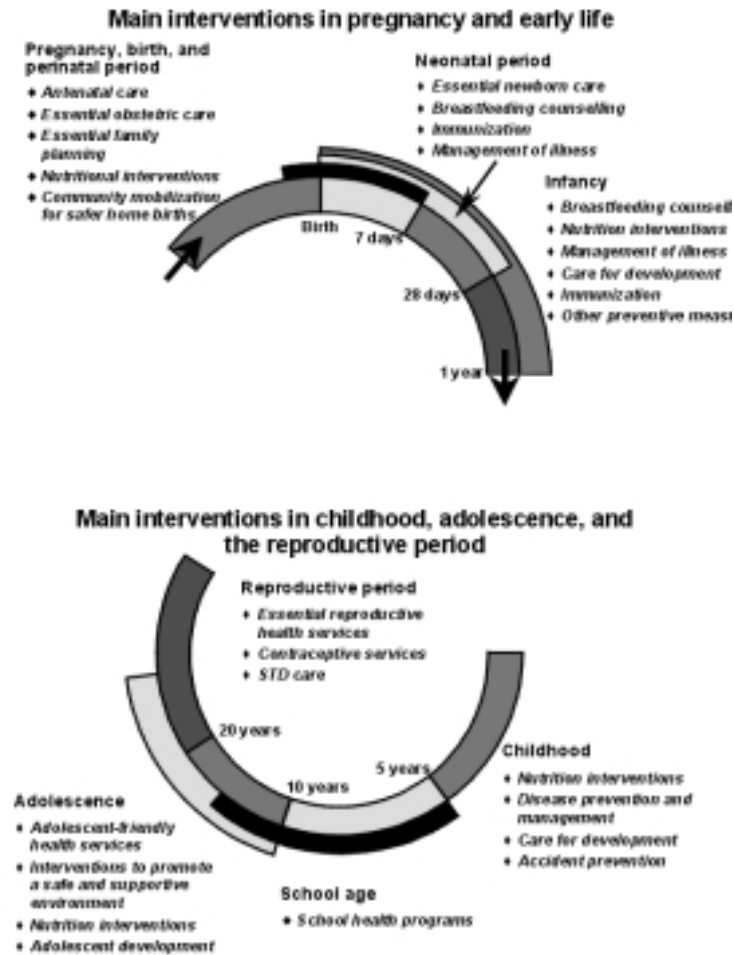
Health system issues

One issue here is the decentralization of revenue-raising—where, for example, local governments are able to raise their own revenues for health spending. Whether or not such arrangements lead to improvements in serving the poor may depend on how the decentralization process is designed and implemented. In assessing the impact of decentralization on health services for the poor, PRSP authors may wish to consider the following factors: how local authorities raise revenue; whether national resource allocation takes into account the poverty and disease burden in different geographical or political units; methods of cross-subsidization between richer and poorer areas; resource allocation; the extent to which the poor, including poor women, have a voice in local resource allocation decisions; and the skills of district health staff in planning and managing resources for public health.

Stewardship issues

One key issue here is how governments can help to coordinate, oversee, and, if necessary, regulate nongovernment risk-sharing schemes, such as private insurance, community insurance, and prepayment schemes. These can be important for the poor population, although insurance markets rarely develop

Figure 18.8. The Main Interventions from Pregnancy to Early Adulthood



well among poor populations. A number of low-income countries have started to experiment with public sponsorship of risk-sharing programs appropriate to poor populations, either for the employees of some sectors or at the community level, such as mutualities in Francophone Africa. Developing such programs usually requires public action and works best if organized through existing structures, such as rural credit systems, farmers cooperatives, irrigation associations, mothers associations, and other cooperative organizations. However, if administrative costs are not kept low and resources do not go to medical services, they are unlikely to be beneficial.

Microeconomic issues

When fees are charged in the public sector, provision can be made for the comanagement of services by involving the community and users. Studies conducted in Benin, Guinea, Niger, and Cameroon have shown that introducing user contributions can increase the overall equity impact of the services if funds are reinvested in quality improvements of pro-poor activities and are community-managed.

18.7 Pulling it together and moving ahead

From here to there. This section pulls together the material presented thus far, and puts forward a table that could be used to organize the evidence from the diagnostics and analysis procedures. It then discusses the processes of prioritization, target-setting, and monitoring and evaluation. It also discusses the PRSP process itself and offers some pointers for additional resources.

18.7.1 Analysis and diagnostics

To recap briefly, figures 1 and 2 together illustrate the key points relating to poverty and health. Poor countries have worse health than better-off countries, and within countries poor people have worse health than better-off people. Bad health leads to reduced living standards and often to poverty; conversely, poverty is also a cause of bad health. This is traceable directly to the utilization patterns and actions of the poor, but more fundamentally it stems from the low income and inadequate knowledge of the poor, the poverty in their communities (due, for example, to traditional norms and weak institutions and infrastructure), and to the poor being badly served by the health delivery system (services inaccessible and of poor quality) and the financing system (inadequate or nonexistent insurance coverage). Figure 18.3 shows more clearly how these different aspects interrelate and how government policies and actions can help break or at least help dampen the cycle of poverty and health. Table 18.2 summarizes how government action at three levels—macroeconomic, system, and microeconomic—influence the provision and financing components of the health system.

Diagnosis and analysis. The task of undertaking diagnostics and analysis may seem daunting. Table 18.3 therefore pulls together the key issues to be addressed by any diagnosis and analysis that might be used to underlay the health-related outcomes and health system components of the PRSP. The table is intended to help organize the diagnostic and analytical work: ideally, each issue mentioned in the table should be covered, and evidence assembled. Once this has been done, it might be useful to draw up a version of the table to summarize verbally the evidence assembled—a sort of table of evidence.

Intersectoral linkages. Central for many health outcomes, such as nutrition, will be some cross-cutting and intersectoral diagnostics and analysis. This can build on the material in this chapter but also the material in the other chapters of this volume. A table of evidence along the lines of table 18.2 could be assembled for this intersectoral work. Such an analysis should aim to show how action in sectors other than health services might help improve the health of the poor and reduce the impoverishing effects of ill health. Someone, ideally from the Ministry of Health, would need to coordinate this cross-cutting work, and it may make sense to set up specialized teams for specific topics. For example, it might be sensible to set up a task team on food security and nutrition to look specifically at activities in health, education, welfare, community development and agriculture, and trade and industry that have a bearing on the nutritional outcomes of the poor.

18.7.2 Prioritization and policy design

Identifying potential areas for action. The tables of evidence proposed in the previous section ought to give an overall picture of the problems a country faces in improving the health outcomes of the poor and in reducing the impoverishment associated with ill health. The tables ought also to give an idea about the relative importance of different problems. Most countries will find room exists for improvement in all areas identified by these tables, but some issues should stand out as being more worthy of attention than others. These areas could be highlighted as potential areas for action, and attention consequently could be focused on a limited set of potentially high-priority areas. Agreement to limit the areas of attention in this way might be reached on the grounds of resource constraints.

Logical frameworks: Goals, objectives, outputs, and inputs. Once a set of areas for action has been agreed, it is useful to develop a “logical framework,” or log frame. The first step is to decide on the ultimate goal for each area for action. For example, if the shortage of vaccines in clinics in poor areas is identified as an area for action, the ultimate goal for that action, in terms of the final outcome improved, might be the reduction of child mortality (see table 18.4). The second step is to decide on the objective, which in the vaccine case might be to increase the immunization rate among poor children. The third step is to agree on specific program outputs, which in the vaccine example would be defined in terms of raising the percentage of properly stocked facilities in poor areas. The final step would be to determine the program inputs required to bring this about. Key steps in the process of deciding what action is required to effect change include:

- assessing what changes at the household and community level would be necessary and sufficient to provide the needed contribution from the health sector;

Key outcomes. Health outcomes, by poverty grouping. Impact of health spending on household living standards by poverty grouping

Health-related household actions and risk factors. Health actions, including service utilization, by poverty grouping

Household influences on actions. Household incomes and variability, and whether income is a factor in not seeking care. Knowledge, especially health-specific. Balance of power in household. Do these influence health choices and outcomes such as high fertility and low use of reproductive health services by women?

Community factors. Cultural norms, and whether they influence health-related household actions. Strength and role of community institutions. Extent of social capital. Environment and infrastructure. How do the poor fare?

Physical accessibility of services. Distance to facilities and whether this is a barrier to use, especially for the poor.

Availability of essential inputs. Key medicines and staff, especially in facilities serving the poor

Organizational quality. For example, opening hours, waiting time, and perceptions of quality and staff attitudes, especially among the poor

Service relevance. Are the services of the basic package actually delivered? Are they delivered to the poor?

Timing and continuity. Especially obstetrics and immunization. Are facilities serving the poor performing worse?

Technical quality. Are staff sufficiently competent to diagnose and treat correctly? Are they worse in poor areas?

Social accountability. What mechanisms used, and are they effective? Are the poor involved?

Who is covered by insurance? What schemes? Who do they cover? Who covers the poor?

What is covered by insurance? What is covered and not covered? Is effective coverage by MoH clear? Is it declining? Is it worse for the poor?

Risk sharing. How large are copayments? Are they affordable for the poor? Do fee-waiver schemes work? Are informal payments a problem?

Paying for health insurance. How much do different groups pay? Is health insurance affordable for the poor?

How much do people pay for services not covered? Are direct payments affordable for the poor? Are they deterred from using services or buying medicines?

Macroeconomic. Is government spending enough? Is spending unequal across areas? Does a mechanism exist to promote geographic equity? What is government spending on? Is it prioritizing well? Is spending properly balanced, or does government overspend on specific areas? Is government doing enough and doing the right things in the pharmaceutical market and in the health labor market?

Health system level. Who provides publicly financed services? Are incentives likely to promote efficiency and equity? Is government doing the right things in stewardship (regulation, coordination, information, and so forth)?

Microeconomic. Are quality, management, and accountability problems at the facility level? What mechanisms exist to improve matters? Does government have a basic package and a sensible policy on its delivery?

Macroeconomic. What mix of revenues is used? Does government rely too heavily on user fees? Are the poor exempt? Are revenues sustainable? Does government have an insurance scheme?

Health system level. Is decentralization of financing harming the poor? What role does it play in promoting private and community insurance schemes?

Microeconomic. Are fees collected locally retained? Is there local variation in the success of fee-waiver schemes?

Table 18.4. Example of Log Frame

	<i>Description</i>	<i>Indicator</i>
Area where action considered necessary	Shortage of vaccines in clinics in poor areas, considered to be causing low vaccination rates and high child mortality	
Actions required	Improve distribution system. Ensure refrigerators for storing vaccines are properly functioning and can be repaired quickly in the event of malfunction	
Program inputs	Higher stocks of vaccines at clinics in poor areas	Percentage of properly stocked facilities in poor areas Intermediate indicator—system input
Program output	Higher vaccination rate	Vaccination rate in poor areas. Intermediate indicator—system output
Program objective	Reduce child mortality	Under-five mortality rate in poor areas. Final or outcome indicator

- assessing what groups of actions the government can take in each of the three areas—macroeconomic, systems, interventions—that would be necessary and sufficient to achieve the desired changes at the household and community levels for the poor;
- assessing what specific inputs and costs would be associated with these actions; and
- assessing what indicators should be used to evaluate progress and how these would be collected and used to adjust the program.

This process is iterative. It is useful to develop first a “narrative summary,” working backward from goal to objective, to program outputs, and to program inputs. This summary can then be reviewed in reverse, asking the question, “Is what we are proposing necessary and sufficient to achieve what is proposed in the preceding stage?” The concept of the necessity and sufficiency of each action, working from the bottom to the top of the log frame, is the key to using this framework successfully.

Prioritizing. Budgets are limited, and it will be necessary to work through the various potential areas for action and decide on the basis of the log frame analysis which should be chosen as actual areas for action and how best to move forward. In Bolivia, for example, the process of preparing the PRSP has begun, using an approach similar to that proposed here. As in many other countries, problems have already been diagnosed. Many initiatives were already in place: in fact, the diagnostic phase found a total of 65 projects under implementation and \$300 million in external resources committed to the health sector. Following the diagnosis and analysis, four broad areas were agreed upon as potential areas for action: (1) implementing the *Seguro Basico*, a capitation for basic services; (2) implementing an expanded program of immunization; (3) modernizing the social security system-based insurance for health; and (4) decentralization and institutional strengthening. In each of these areas, a specific individual from the government and a counterpart at a single lead agency from the donor side are responsible for leading the log frame exercise. In March and April 2000, these teams developed strategies for breaking through bottlenecks in each of the four areas. The Pan American Health Organization coordinated a team meeting at which the four teams sat down with their proposals, consolidated them, ranked priorities, and turned them into concrete actions, with key performance indicators and a framework for monitoring and evaluation.

18.7.3 Targets, and monitoring and evaluation

Setting targets. The PRSP process includes the setting of targets for health outcomes. These targets must be realistic, and must take account of what can in practice be monitored and evaluated over time. Outcome indicators move slowly, and many are derived from surveys that are conducted only every few years. It is often useful to set short-term targets for process indicators—proximate or intermediate determinants—that can be measured routinely to assess progress toward the major targets. If possible, the

intermediate indicators should be chosen based on evidence of their importance to health outcomes for the poor. It is also important to remember what is achievable, considering the existing situation, the resources available, the general policies being pursued, and the changes to the policy framework decided through the process described above. For example, if reduction of the infant mortality rate were a target, the chosen interventions might be specific goals for prenatal care visits, identification of high-risk cases, tetanus toxoid inoculations, and improved nutrition for expectant mothers who are at risk. The infant mortality rate would be too general and slow-moving an indicator for evaluating these efforts. Short-term target setting would have to be done through changes in intermediate variables—such as prenatal visits, tetanus toxoid coverage, delivery of nutrition supplements, and identification of mothers who will have high-risk births—for the poor women being targeted.

Monitoring and evaluation. For the reasons discussed above, monitoring is also best focused on the interventions. Evaluation should be focused on the relative success of the interventions in achieving the goals, and why they work or do not work as expected. Chapter 3, “Monitoring and Evaluation,” contains a wealth of useful material on these issues. Specific issues relating to the health component of the PRSP include the following:

- ⊗ Current M&E capacity in the health sector needs assessing, both inside and outside government. Assessment should include the availability and quality of data and, equally importantly, the extent to which information is adequately analyzed and used for decisionmaking. If data are not being used, why not? This assessment should inform the choice and number of indicators.
- ⊗ An M&E strategy for the health portion of the PRSP needs developing, with particular attention to how qualitative and quantitative information will be collected and used, at the national, local, and facility levels. Experience shows that the quality and use of data are closely linked. Some monitoring functions may be best carried out by government, while others could be done by academics, NGOs, or community organizations.
- ⊗ M&E needs to be given adequate resources and management attention during implementation. Too often, baseline surveys are delayed or not completed, and critical data not adequately collected and analyzed, making it difficult to assess what interventions are making a difference for the poor and why. Annual review meetings among government and partners can be a useful means to track progress and to ensure that M&E is receiving adequate attention.

18.7.4 The PRSP process

Capacity building through joint learning-by-doing. In African countries, the PRSP process has created significant opportunities for building capacity through joint learning-by-doing. At the country level, the formation of working groups on health and education is the first step in the government’s work of elaborating the PRSP. While their composition varies, these groups typically consist of senior managers of the line ministries as well as budget and policy analysts from the ministries of planning and finance. They sometimes include observers from donor agencies, and even representatives of NGOs and other civil groups. In Cameroon, for example, NGOs were consulted in the preparation of the AIDS strategy, opening the way for future collaboration between the government and NGOs, including the involvement of NGOs in specific activities under subcontracting arrangements. The Bank supports the work of these working groups by sharing technical resources and, where this has been chosen as the mechanism to consolidate sector knowledge, by working collaboratively with group members in preparing the Country Sector Reports (CSRs).

Closer collaboration among partners. Opportunities also exist for closer collaboration among the development partners, including bilateral donors and international organizations such as WHO, the World Bank, UNICEF, UNAIDS, UNFPA, AfDB, and so on. Collaboration can mean increased support for the working groups, as well as dialogue on: (1) a common understanding of the underlying analytical frameworks for assessing the link between education and health and poverty reduction; (2) lessons from various efforts to improve service delivery—for example, efforts to reform and reorganize the health sector in Sub-Saharan Africa following the Bamako Initiative, and to accelerate public health programs such as Expanded Program on Immunization (EPI). Family Planning and Safe Motherhood, and polio

Key outcomes. **TN O.1** for risks and outcome indicators by stage of lifecycle. **TN O.1 (section O.1.2)** for data on key MCH outcomes by wealth quintile for 48 countries

Health-related household actions and risk factors. **TN O.1** for key household risk factors and behaviors by stage of lifecycle. **TN O.1 (section O.1.2)** for data on key MCH risk factors, behaviors, and utilization by wealth quintile for 48 countries. **TN O.3 (section O.3.6)** on differences across income quintiles in health service utilization and subsidies for health care

Household and community influences on actions. **TN O.1 (section O.1.2)** data on health-related knowledge by wealth quintile for 48 countries. **TN O.1 (section O.1.3)** on child deaths in Bolivia. **TN O.2** on impact of household and other factors on household utilization and behavior

TN O.5 for assessing health sector performance.

World Bank's private sector toolkit for improving the role of private sector (available at www.worldbank.org)

World Bank's community financing work (available at www.worldbank.org)

Macroeconomic. **TN O.3** on how to approach public expenditure analysis. **TN O.3 (section O.3.4)** on linking expenditures to program objectives. **TN O.4 (section O.4.3)** on benchmarking, and monitoring and evaluation. **TN O.4 (section O.4.4)** on lessons from the World Bank's Operations Evaluation Department. **TN 4.5** on evaluating public spending options

Health system level. **TN 4.4** on stakeholder analysis

Microeconomic. **TN O.4** on behavior change and communication programs. **TN O.1** on key interventions at different stages of lifecycle

eradication; and (3) the design of sound pro-poor strategies in the health and education sectors that take advantage of debt relief to reinforce the donor community's efforts to ensure increased funding for the social sectors in Africa, such as through initiatives including Roll Back Malaria, Stop TB, Global Alliance for Vaccines and Immunization (GAVI), Massive Attack, and Education for All.

18.7.5 Further resources

The series of technical notes in Annex O and selected additional sources are set out in table 18.5, and related to the structure of this chapter.

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Chapter 19

Education

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19.1 Introduction

This chapter is designed as a guide for developing the education policy component of a Poverty Reduction Strategy Paper (PRSP). It provides diagnostic tools and research findings that can help countries identify the policies and programs likely to have the most powerful impact on education opportunities and outcomes for poor children and illiterate adults within their country context.

Section 19.2 presents the rationale for investing in education as part of a strategy for poverty reduction. It also lays out a conceptual framework for understanding how education sector policies and other factors combine to produce education outcomes.

Section 19.3 focuses on diagnosing education system performance. Good policy begins with sound diagnosis. A three-step process is proposed: (1) benchmarking key education outcomes, (2) analyzing public and private expenditures on education, and (3) using decision-tree analysis to probe more precisely the underlying causes of poor outcomes in a particular country.

Section 19.4 focuses on reform strategies and high-impact programs. Drawing from country experience and research, it summarizes what we know about policies and programs that can redress the problems identified, and looks at the experience to date of low-income countries that are seeking to improve education for the poor. This section analyzes the key policy levers available to ministries of education to improve the delivery of formal education services. It also reviews international experience with the design and delivery of nonformal basic education for youths and adults. Finally, it considers the key policies in other sectors that can have an important impact on education outcomes for the poor, specifically macroeconomic and fiscal policies and the delivery of complementary social services, notably early childhood interventions and child health and nutrition programs.

Section 19.5 provides guidance on assessing the political and institutional feasibility of alternative policies and programs and on setting priorities. It offers suggestions for estimating the costs and implementation timeframe for priority policies and programs, sequencing these realistically, and monitoring and evaluating progress.

Countries engaged in the PRSP process typically face major constraints on resources and capacity and are under time pressure to show measurable progress. It is not expected that all countries will have the data or the time to carry out the full diagnostic process set out in this chapter, nor will they all have the capacity to implement the full range of reforms discussed in Section 19.4. The “good practice” analytical approach and broad overview of relevant country experience with education reform presented here are intended to provide a comprehensive resource from which client countries can select the tools and policy options that are most feasible and relevant in their context. It is hoped that this resource will contribute directly to the development and implementation of effective poverty reduction strategies.

19.2 Education and Poverty

19.2.1 The importance of education for poverty reduction strategies

Inadequate education is one of the most powerful determinants of poverty, and unequal access to educational opportunity is a strong correlate of income inequality. One out of every five children in developing countries—more than 113 million children—lacks access to schooling, and some 880 million adults are illiterate. Two-thirds of those out-of-school children and illiterate adults are female. One out of every four children who enter school drops out before completing five years of primary education or acquiring sustainable literacy. At current rates of education expansion, it is projected that by 2015 more than 100 million school-aged children will still not be in primary school.

Failure to provide basic education seriously compromises a country’s efforts to reduce poverty. A large body of research points to the catalytic role of basic education for those individuals in society who are most likely to be poor—that is, girls, ethnic minorities, orphans, people with disabilities, and people living in rural areas. Basic education or literacy training, of adequate quality, is crucial to equipping disadvantaged individuals with the means to contribute to and benefit from economic growth. Education is one of the most powerful instruments societies have for reducing deprivation and vulnerability: it

helps lift earnings potential, expands labor mobility, promotes the health of parents and children, reduces fertility and child mortality, and affords the disadvantaged a voice in society and the political system.

Education investments are also crucial for the sustained economic growth that low-income countries are seeking to stimulate, and without which long-term poverty reduction is impossible. Education directly contributes to worker productivity, and can promote better natural resource management and more rapid technological adaptation and innovation. It is fundamental to the creation of a competitive, knowledge-based economy, not only for the direct production of the critical mass of scientists and skilled workers that every country requires—no matter how small or poor—but also because broad-based education is associated with faster diffusion of information within the economy, which is crucial for enabling workers and citizens in both the traditional and modern sectors to increase productivity (Porter 1998, and Hanushek and Kimko 2000).

These impacts are strongest where education is integrated into a broader competitiveness strategy that includes macroeconomic stability, trade openness, incentives for foreign investment, competitive telecommunications pricing, and adequate infrastructure investments. No 21st century economy can expect to develop a productive workforce that is able to take advantage of globalization without a well-functioning education system. A growing body of research also documents the connections between education, the quality of institutions, and social cohesion: nations in which most of the population is literate and in which all children complete at least a basic education have higher-quality institutions, stronger democratic processes, and, as a consequence, more equitable development policies (Ritzen, Easterly, and Woolcock 2000).

Since research points strongly to the economic and social benefits of universal primary education, this chapter focuses on policies for expanding the coverage and improving the quality of that segment of the education system (a five- to nine-year cycle, depending on the country) and for increasing adult literacy through cost-effective programs. Consistent with the International Development Goals and the commitments made by the 184 countries at the 2000 Dakar Education for All (EFA) forum, three goals are taken as cornerstones of the education component of any poverty reduction strategy: (1) raising the percentage of children who complete a primary education of adequate quality, with the goal of achieving universal primary education by the year 2015; (2) eliminating gender disparities in primary education by 2005; and (3) increasing the percentage of the adult population that is literate.

International forums on education have rightly stressed the need to eliminate gender disparities in education access and opportunities. Research shows that investments in girls' education yield some of the highest returns of any development investment, fostering higher rates of female participation and productivity in the labor market and raising economic output. Educating girls directly improves family welfare, reducing some of the most pernicious effects of poverty. With even a few years of formal education, women are more likely to plan their families and have fewer children; to seek pre- and postnatal care, lowering maternal and infant mortality; and to provide children with better nutrition, ensure they are immunized, and procure appropriate medical care, thereby reducing child mortality. Educated girls and women are more likely to send their children to school and to keep them there longer, and are more receptive to the adoption of environmentally friendly technology that can protect natural resources.

Adult literacy programs are also important in poverty reduction strategies. While the universalization of primary education for children should eventually eradicate adult illiteracy, countries with high illiteracy rates cannot afford to wait a generation for the beneficial impact on incomes and poverty that literacy brings. Nonformal programs that impart literacy and other basic skills to adults and out-of-school youths can directly improve family income generation and have strong positive impacts on family health status, children's educational attainment, and the sustainable management of local natural resources. A widely reported outcome among adult learners is a sense of empowerment and an ability to act with greater confidence in public arenas.

Adult basic education is important on equity grounds because it tends to be self-targeted to the most impoverished groups. It is especially important from a gender perspective, because women outnumber men in most adult basic education programs, sometimes by wide margins. In short, as an interim strategy until universal primary education is achieved, nonformal education programs can equip the poor for

economic development and social participation and can thereby promote the development of a broad-based and more equitable society.

Even countries far from achieving universal primary education and adult literacy must think about the balanced development of *all* levels of their education system. Countries are under increasing pressure from communities to expand coverage of preschool education, and research shows that early childhood programs can have a payoff for primary education by boosting student attainment and learning, especially among at-risk students. Progress in expanding enrollment in primary education quickly creates pressure for the expansion of secondary school and tertiary education, and it is important to put in place a policy framework for expanding these levels that ensures quality, relevance, equity, and financial sustainability. The secondary and tertiary levels are the levels that produce science and technology capability—which is crucial for economic growth and technology adaptation and innovation—and that also directly determine the quality and supply of professors, teachers, and education administrators. Since costs per student in secondary and tertiary education are substantially higher than in basic education, reforms to improve efficiency and equity at these levels can also be important to underpin strategies for basic education improvement. Whatever their level of resources, countries must strive for a balanced and efficient development of their overall education systems.

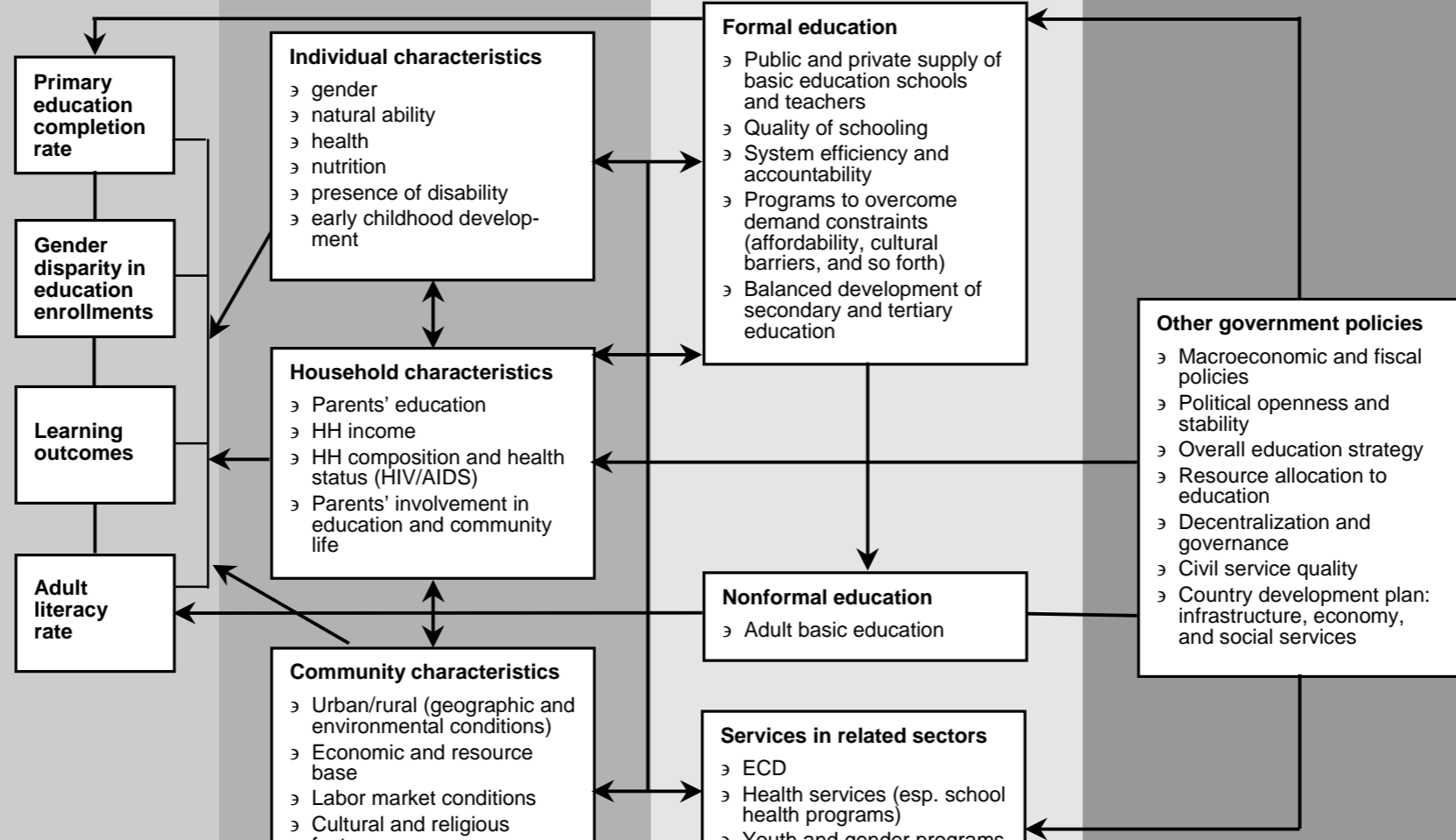
Complicating this challenge in many low-income countries is the HIV/AIDS pandemic, which poses a major threat to education systems. The worst-affected countries are in East and Southern Africa, but the epicenter is shifting toward West Africa and Asia, and countries in Eastern Europe, Central Asia, and Latin America will also face problems. Many African countries are already struggling to produce adequate numbers of new teachers, with more than 10 percent of teacher training graduates forecast to die of HIV/AIDS within five years of entering the service. With this level of attrition, it is imperative not only that teachers be trained in larger numbers, but also that they be trained more cost-effectively. An even larger issue for school systems is the 35 million or more children who are projected to lose their mothers to AIDS in Africa this decade—in some countries, as much as 20 percent of the school-aged population. Without special assistance, these children, who often have no other source of family income and often have younger siblings to take care of, are at high risk of dropping out of school and perpetuating the cycle of poverty.

In sum, long-term plans for education must embrace policies across all levels and all types of education and training. In a significant number of PRSP countries, especially in Eastern Europe and Central Asia, universal completion of primary education has already been achieved and 100 percent of adults are literate. In these countries, the focus of a PRSP education component will shift to issues of quality (especially curriculum relevance), efficiency, and financial sustainability across all levels of the system, and to expanding the participation of low-income students at higher levels of education.

19.2.2 A conceptual framework

Education outcomes are influenced by many factors, only some of which are directly controlled by education policymakers. Figure 19.1 presents a conceptual framework for understanding education outcomes in general, and the barriers and policies that affect the education of the poor in particular. It starts with key outcomes on the left (column A) and works back through the individual, household, and community factors that influence educational outcomes (column B) to government policies and actions, both at the sectoral level (column C) and at the macroeconomic level (column D). In this framework, sectoral diagnosis proceeds from the left side, working backward from desired outcomes through an analysis of the causal factors on the right. Conversely, monitoring and evaluation can start from the right side and move left, tracing the ways in which government policies and actions work down through individuals and communities to produce educational results.

Key education outcomes. Column A shows the education outcomes most directly related to poverty reduction: the primary education completion rate, gender disparity in basic education, student learning, and the adult literacy rate. (The rationales for these indicators, for intermediate indicators that are linked to these outcomes, and for the measurement issues involved in tracking them are discussed in section 3.1.)



Individual, household, and community factors. Education outcomes are powerfully linked to individual factors such as aptitude, motivation, gender, the presence of physical or mental disabilities, and access to early childhood nutrition and stimulation programs. The last of these is especially important for at-risk students. Research also documents that students' school attainment and learning are correlated with household income, birth order, and, importantly, the education level of parents—especially of the mother. Catastrophic family health problems or the loss of a parent can also affect students' school attendance and progress, and both of these, linked to HIV/AIDS in many countries and to civil war and conflicts in others, are increasingly disrupting children's schooling participation and attainment in many African countries.

A range of community factors also have an impact on education. The availability or lack of roads, public transport, water, and electricity affect the cost of making schooling accessible to all children. Good electricity and telecommunications infrastructure can make possible quantum leaps in schooling quality by enabling the use of computers and the Internet to support distance delivery. Access to early childhood development programs, nutrition programs, and health care facilities makes for healthier and more successful students, while the availability of jobs for school leavers in the local or regional labor market strongly influences the demand for education.

Education system performance. Public education typically absorbs 2 to 5 percent of GDP and is often the largest (nondefense) sector in the overall government budget. Additionally, private spending on education can often represent an equivalent amount. Every society in the world devotes huge resources to formal education systems. System performance, however, varies widely across countries in terms of quality, coverage, and efficiency. Many low-income countries spend a percentage of national resources on education equivalent to the percentage spent by more developed countries, but produce much lower outcomes. The special challenge for heavily indebted poor countries (HIPC) and other low-income countries is to achieve a major improvement in the returns on their education spending as they access incremental resources for the sector through debt relief.

Education systems commonly function with a high degree of centralization, weak incentives for efficiency, and low accountability for student learning outcomes. Many countries are pursuing systemic reforms in governance (for example, involving parents and communities in school-based management), financing (for example, using transparent formulas to make per-student funding more equitable), and management (for example, introducing direct measurement of student learning outcomes and other measures of school performance) to tighten system accountability.

Finally, research clearly demonstrates that nonformal education services, such as community-based early child development (ECD) programs, literacy and basic education programs for out-of-school youths and adults, as well as health and nutrition interventions aimed at school-aged children, have very strong complementary impacts on outcomes in the formal education system.

Overall government policies. Policies that affect macroeconomic conditions and the labor market and the nature of governance in a country obviously shape education sector performance. The demand for education and the productivity of national education investments are strongly affected by conditions in the labor market, which in turn reflect macroeconomic policy stability and the rate and nature of economic growth. Trade policies, the climate for foreign direct investment, and policies in other productive sectors cumulatively determine whether or not a country's growth path is labor-intensive and innovative, and this issue strongly affects the demand for education and for the different disciplines and career streams in the system. In sum, achieving education goals for the poor depends to an important degree on actions and policies outside the education sector.

Figure 19.1 implies three different levels of intervention and, hence, three different audiences for this analysis. For core central ministries (column D), the major issues will be overall economic policies, the share of overall expenditures allocated to education, and possible reallocations to reach the poor better. At the education system level (column C), the challenge is making the system—including public and private providers—function better for the poor through better policies, incentives, and management. And for those engaged in delivering community-level programs (column B), above all, in the area of adult literacy, the need typically is for better information about the costs and impacts of interventions and for

better coordination with those working at the system and macroeconomic levels. Reaching the poor typically requires reforms and new efforts at all three levels.

19.3 Diagnosing Education Sector Performance

Formulating an effective strategy for the education sector begins with analyzing education outcomes, education system performance, and the factors that influence those outcomes. This section outlines a diagnostic process with three steps:

1. benchmark education outcomes;
2. analyze public and private expenditures; and
3. probe the underlying causes of unsatisfactory performance using decision-tree analysis.

This diagnosis should identify the policy levers that have the greatest potential impact on educational outcomes within a given country context, which will be some combination of policies and programs that operate on broad socioeconomic factors, actions in related sectors, or reforms in the education sector.

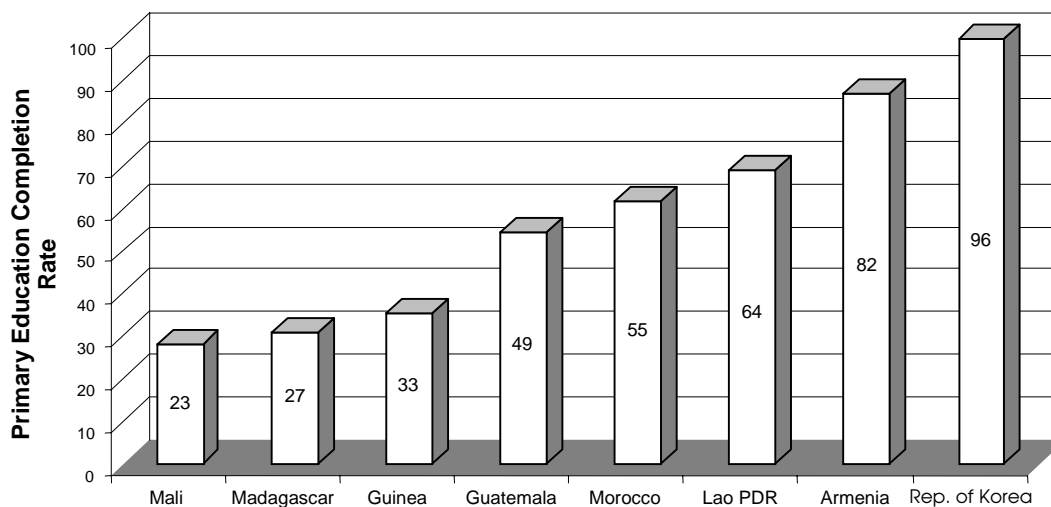
19.3.1 Key education outcomes

Low-income countries are typically characterized by the low percentage of children who attend and complete primary education (see figure 19.2), sharp gender disparities in education enrollments (figure 19.3), and the low percentage of adults who are literate (figure 19.4). Progress in each of these areas is powerfully linked to poverty reduction (see above).

A fourth crucial outcome to monitor is the ultimate goal of an education system: student learning. Although student learning is only beginning to be assessed across countries in internationally comparable ways, the recent TIMSS (Third International Mathematics and Science Study) and other international studies suggest that student learning is relatively low in low-income countries (see figure 19.5).

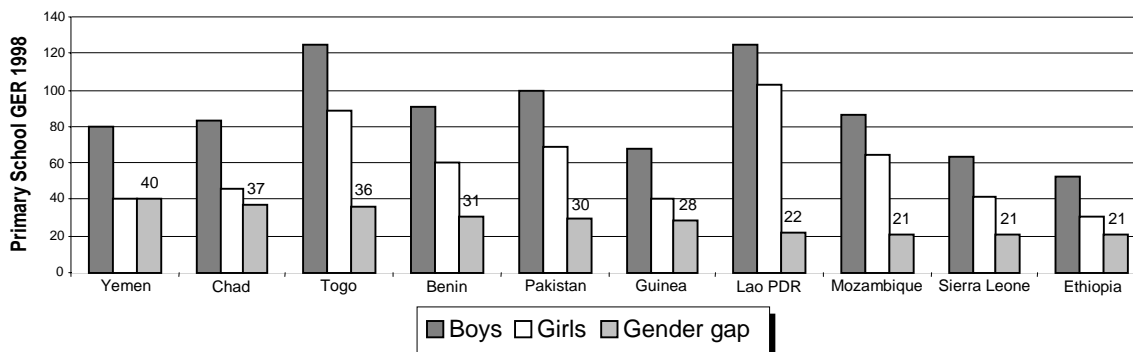
Tracking these four outcomes is not easy. The following sections analyze the issues involved in measuring these outcomes directly, and suggest proxy indicators that can be used in the absence of direct measures. As some of these measures are slow to change in response to new policies and investments, countries should also monitor a range of intermediate indicators that can reveal the direction in which the outcomes are moving.

**Figure 19.2. Primary Completion Rate in Selected Countries
(Percentage of all children that complete primary schooling)**



Note: The official duration of primary education in Armenia is four years; in Madagascar and Lao PDR, it is five years; in the other countries presented, it is six years.

Source: World Bank (2002a).

Figure 19.3. Gender Gap in Primary School Enrollments in Selected Countries

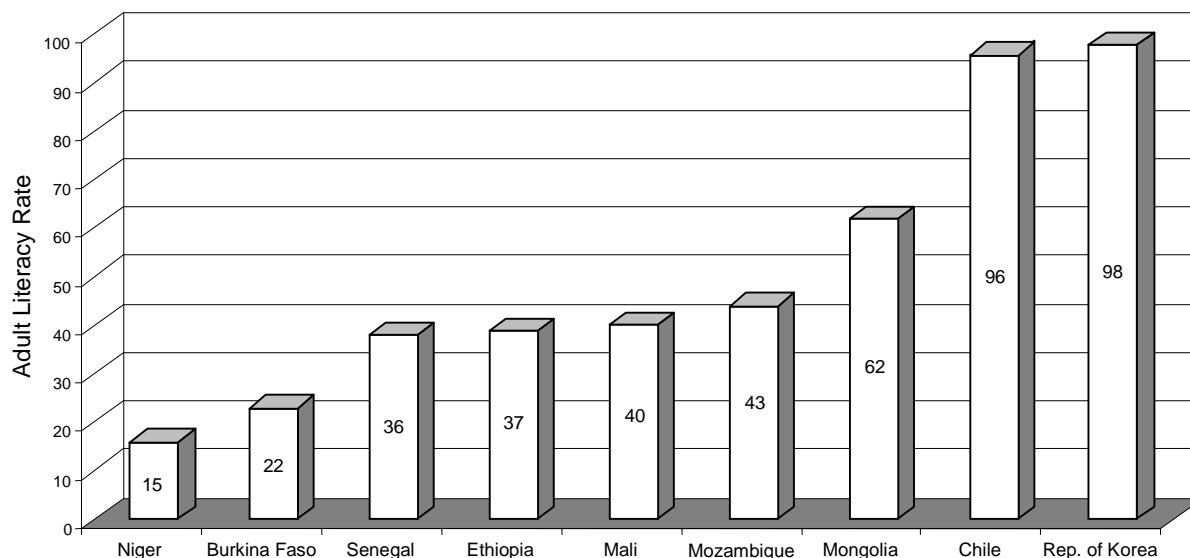
Source: UNESCO Institute for Statistics (2000).

Primary education completion rate

The goal of countries committed to Education for All (EFA) is that every child in every society should have the opportunity to complete a primary education of adequate quality. This implies a minimum of five years of primary schooling, during which time a child can acquire a sustainable degree of basic literacy and numeracy skills. As countries develop, the length of compulsory education is typically increased to seven or eight years and is often referred to as “basic education,” encompassing both primary and lower secondary education. As the length of compulsory education increases, more sophisticated goals are also added, such as the development of critical thinking skills and “learning how to learn.” For most PRSP countries the formal duration of the primary cycle is six years (see technical note P.1).

The assumption here is that countries will first concentrate on achieving the goal of universal primary education completion (the length of the cycle differs among countries), and then extend the goal to include lower secondary education completion.

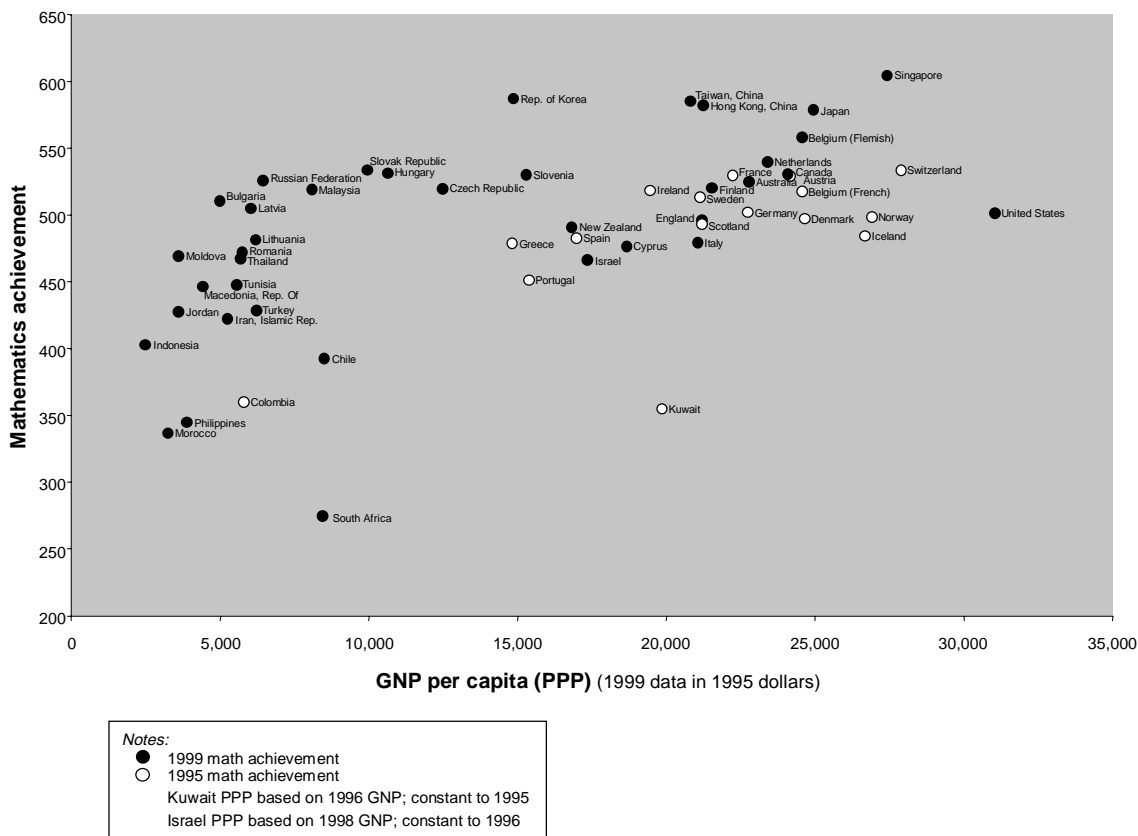
To track progress, countries need to know what percentage of all children complete primary education. Because the length of the primary cycle differs, UNESCO tracks for all countries the percentage of students who complete five years of basic education. This indicator can be misleading, however, as it does not include children not in school—which can be a large proportion of children in low-income countries.

Figure 19.4. Adult Literacy Rate in Selected Countries (percentage)

Source: World Bank (2002b).

Figure 19.5. Student Learning Achievement in Mathematics

Eighth-grade mathematics achievement from the TIMSS 1995 and 1999 assessment



Source: International Association for the Evaluation of Educational Achievement (2000).

Tracking primary education completion is further complicated by the large share of children who repeat grades, drop out of school before completion, and move in and out of different schools, including nonformal schools that often are not captured in official enrollments. Some students enter primary school before the typical official entry age of six, and many do so later. The pool of children graduating from basic education in any given year typically spans a large range of ages.

The *primary completion rate* may be calculated as the total number of students completing or graduating from the final year of basic education, divided by the total number of children in the population whose age is equal to the official graduation age. This measure is not perfect, as the numerator will include underaged and overaged (late entry and repeater) students, but it has several advantages: it is the standard OECD methodology for calculating cycle completion; it is easily calculated from ministry of education and population data that are available in virtually all countries; over time, the numbers of over- and underaged students will cancel out (and eventually they will also decline), so genuine progress in increasing coverage can be gauged; and finally, it is a direct measure of progress toward the goal of universal primary education completion. As such, it may be used to set meaningful targets: as a country's primary completion rate approaches 100 percent, progress is indisputable.

For these reasons, the primary completion rate as calculated above is preferable for policy purposes to widely used primary gross enrollment rates, which can show increases if the efficiency of the system worsens, for example, and student repetition rises, and which provide no indication of the percentage of students actually completing primary education. Technical note P.1 provides more detail on data sources and on the methodology for calculating the primary completion measure. It is important to note, however, that in many African countries "graduation" from primary education is not clearly delineated in education statistics. A significant number of African students who complete the primary cycle but do not gain access to secondary schooling because of scarce places choose to repeat the final year of primary

schooling to try to improve their test scores on secondary school entrance exams. In countries where primary graduation is not reported, the best alternative measure is a *proxy primary completion rate* defined as the total number of students enrolled in the final grade of primary school, minus the number of students that repeat the grade in a typical year, divided by the total number of children of official graduation age in the population.

In addition to measuring progress in expanding coverage, countries need to track the efficiency of their education system in producing basic education graduates. The costs to society of 100 percent of children completing five years of schooling with no repetition are much lower, for example, than the costs to society of all children completing five years of schooling with, on average, three years of repetition. In a country with 1 million students in basic education at a unit cost of \$50 per year, under the high repetition scenario the country would need to spend \$150 million (or 60 percent) more to achieve the same education outcome. It is important, therefore, to track children’s entry and progress through the primary cycle. Technical note P.1 discusses how to estimate the years of schooling input per graduate, cohort completion rates, and other measures of the efficiency of student flows.

A key part of PRSP preparation is to analyze variations in the primary completion rate for disadvantaged groups. Relevant disaggregations include by gender, income decile or quintile, urban/rural, or by region, ethnic group (if applicable), and/or specific vulnerability (orphan status, disability, and so forth), if available.

From a poverty reduction standpoint, reducing disparities in primary completion associated with gender, poverty, or ethnicity is as important as advancing the overall completion rate. In general, ministry of education statistics will include gender and region, but household survey data will be needed in order to analyze disparities by income decile or ethnicity. Technical note P.2 has a sample template for disaggregating data on primary education completion that can be easily adapted to other indicators.

Achieving universal primary education completion is a key long-term goal for any low-income country. However, policy actions can take several years to produce movement in the national completion rate. In a HIPC context, especially, countries need to monitor intermediate or “leading” indicators such as the following, which can give more timely insight into the impact of policy changes:

- ⊃ primary intake ratio or entry rate to grade one;
- ⊃ number of children out of school;
- ⊃ gross enrollment ratio in each grade, especially in the final primary grade;
- ⊃ net enrollment ratio in each grade, especially in the final primary grade;
- ⊃ grade-by-grade enrollment profile;
- ⊃ survival rate to grade five;
- ⊃ repetition rates, by grade;
- ⊃ dropout rates, by grade;
- ⊃ teacher–student ratio; and
- ⊃ pupils per classroom ratio.

While the most important intermediate indicator is the intake rate into grade one, it is also important to monitor repetition and dropout rates. Strategies that result in more girls being enrolled in grade one, in lower repetition, or in lower dropout can be expected to produce improvements in the primary completion rate over time. Monitoring these intermediate indicators is thus essential for understanding policy impact.

Gender disparity in education enrollments

In some 40 low-income countries, primary and secondary enrollment and completion rates for girls are sharply lower than for boys. Figure 19.3 shows how large the disparity can be. Where significant gender gaps exist, it is appropriate to set specific targets for increasing the participation and completion rates for girls. Countries such as India, China, and Bangladesh have set explicit and highly visible targets for closing the gap between girls’ and boys’ enrollments over the past decade and have made impressive

progress (see also section 3.1.3). Appropriate measures to track include the primary completion rate for girls, the ratio of girls to boys in primary school, and the number of girls out of school. As noted above, the primary intake ratio for girls is a crucial intermediate indicator.

Adult literacy rate

The prevalence of adult illiteracy in a country is typically a strong correlate of poverty. While extending school access to all children is a crucial goal, low-income countries cannot afford to wait the generation it takes for the full impact of these reforms on income and poverty. The success of countries such as the Republic of Korea and China in rapidly reducing poverty suggests that complementing the expansion of the formal system of basic education for children with cost-effective nonformal basic education and literacy programs aimed at adults and out-of-school youths is important.

Diagnosis is complicated by the weakness of adult literacy measures. Data are almost entirely based on national censuses, which often use proxy measures, such as the highest level of schooling reached, or simple questions of self-assessment. A number of international efforts, notably the International Adult Literacy Survey (IALS) and the International Adult Literacy and Lifeskills Survey (IALL) seek to refine and standardize methodologies and to incorporate a broader assessment of adult basic learning competencies (BLCs) or life skills.

Household surveys such as the Living Standards Measurement Survey (LSMS), which incorporate direct assessment of each respondent's ability to read and write and questions about the highest level of education completed, are a relatively robust data source for estimating adult illiteracy. As with primary completion rates, it is important to break down adult literacy indicators by gender, household income, and other population characteristics, as suggested in the section above headed "Primary education completion rate."

While the adult literacy rate is the key outcome, here again intermediate indicators are needed, such as the following:

- annual number of adults and youths (over age 15) who complete literacy training courses;
- annual number of adults and youths participating in nonformal education programs; and
- passing rate from adult basic education courses.

Even these data are not readily available in many countries, given the large number of nongovernment providers of literacy training; the wide variety of training sites, content, and modalities; and, commonly, the absence of an official body responsible for monitoring and evaluating the coverage or effectiveness of adult and youth literacy training programs. Improving the measurement of indicators of adult literacy should be a priority for countries pursuing poverty reduction strategies.

Student learning outcomes

Developing countries are increasingly recognizing the value of standardized assessments of student learning as a means of measuring how well students are learning over time, across different schools and across different regions, and of making comparisons with other countries. Box 19.1 lists a range of sources of data to assess student learning.

Standardized testing tends to be controversial, because no test instrument is values neutral. Poorly designed tests can create pressures for rote learning, for example, and attaching excessive importance to student or school performance can create overwhelming pressures for cheating. Developing country

Box 19.1. Indicators of Student Learning Outcomes

- **School leaving examinations**
- **Sample-based student learning assessments**
- **Participation in regional (sample-based) assessments**
- **Census-based national standardized student assessments**
- **TIMSS, IEA, and other internationally benchmarked student assessments**

participation in the major international assessments of literacy (IEA) and math and science skills (TIMSS) is still rare, although countries in Latin America and Africa have participated in several regional assessments.¹ New initiatives such as the Program for International Student Assessment (PISA) and the Progress in Reading Literacy Study (PIRLS) may, however, increase the number of countries for which comparable international data are available.

Participating in relatively expensive international assessments is not the only way to measure student learning outcomes. Countries can start with much simpler sample-based national learning assessments, focused on measuring basic literacy and numeracy skills in one or two grades at the end of a cycle (often the fourth and eighth grades). When such assessments include basic data on school and student characteristics collected at the school level, it becomes possible to track student learning performance across different regions and/or income groups and across different kinds of schools (for example, public or private), and to analyze the determinants of student learning.

Countries such as Chile, Brazil, and Uruguay are finding such national student assessment data valuable for the diagnosis of education sector performance and policy formulation. Where available, data on the learning progress of different at-risk populations should be disaggregated, as in the section above headed “Primary education completion rate.”

If a national assessment does not exist, or until one can be developed, it is important to analyze other available measures, such as primary school-leaving examinations or secondary school entrance examinations. While exams have the disadvantage of coming late in the school cycle, by which time many children—especially the poorest—have already dropped out, it is important for education policy that disparities in the examination performance of children from different regions and income groups be identified. Using readily available examination results is a low-cost way to gauge this.

19.3.2 Analyzing expenditures

Comparing raw education outcomes across countries is not very meaningful if countries are investing very different levels of resources in education. The next step, therefore, is to analyze public and private expenditures on education. This permits countries to compare their education outcomes per unit of expenditure and therefore to benchmark the efficiency of their education sector performance.

Complementing this, analysis of expenditures across different types of inputs, such as teacher salaries, books, or school construction, can provide insight into the quality of spending. Finally—and crucially for poverty reduction strategies—disaggregating education spending and outcomes by region, gender, income decile, and ethnic group permits analysis of system equity.

The rationale for public finance of education

The high private rates of return to education investments at all levels justify large investments by individuals and families. Notwithstanding these high private returns, there is also a case for public intervention, especially for basic education, for reasons of income distribution (more equal distribution of education is a powerful agent for income equality), capital market imperfections (which make it hard to borrow for education, especially at the lower levels of schooling, despite the high returns), and externalities (that is, benefits that accrue not only to the direct recipient of schooling but also to society at large).

Education externalities take several forms. First, researchers have found microeconomic evidence of spillover effects on productivity from education investments. For example, a study in Sub-Saharan Africa found an additional year of schooling for some farmers to be associated with higher crop yields not only for them, but also for their less educated neighbors (Appleton 2000). Similarly, findings from the Green Revolution in India suggest that the demonstration effect of farmers with more education adopting new, high-yield seeds led less-educated farmers to switch as well, resulting in a faster reduction in poverty for educated and uneducated farmers alike (Foster and Rosenzweig 1995a and b).

Other documented education externalities are intergenerational: a woman’s additional schooling, for example, can produce benefits that are captured in part by her future offspring, in terms of their better health and higher schooling attainment. Benefits from education that are hypothesized but not yet well

documented may also accrue at the national level; it is believed, for example, that education promotes better governance and improves innovation and the diffusion of technology.

All of these externalities appear to be highest for basic education: in other words, the wedge between the payoff captured by an individual investing in schooling and the benefits from the same investment that accrue to neighbors, offspring, or society at large appears largest for basic education and smallest for higher education. The rationale for public financing of education is that because of this wedge, private investment alone will be suboptimal. Nonetheless, relatively little is known about the size of this wedge in different countries, for different levels of the education system, and at different points in time. There is a need for further research on these issues to guide public expenditure policy in education.

System efficiency

Externalities provide an economic justification for public intervention in the market for education, especially at the basic education level. There are other justifications, such as the development of political and social cohesion through public education. Governments are in fact the major funder and provider of education in most countries—even though the economic case for public finance of education does not necessarily mean it should be publicly provided.

Public spending on education ranges from as little as 1 percent to as much as 10 percent of gross domestic product, and from 10 percent to 40 percent of total government spending.² While international comparisons show that aggregate expenditure on education nearly always increases with GDP and education outcomes broadly improve with education expenditures, these correlations are sometimes loose. Wide variations exist in education outcomes and spending efficiency across countries with similar income and/or education spending levels, as figure 19.6 shows. Mali and Sri Lanka both spend between 2 and 3 percent of GDP on education, but in the one country the student population completes less than 2 years of schooling, while in the other, more than 11 years. Analyzing such performance differentials can help identify the policies that produce the best educational outcomes per unit of expenditure.

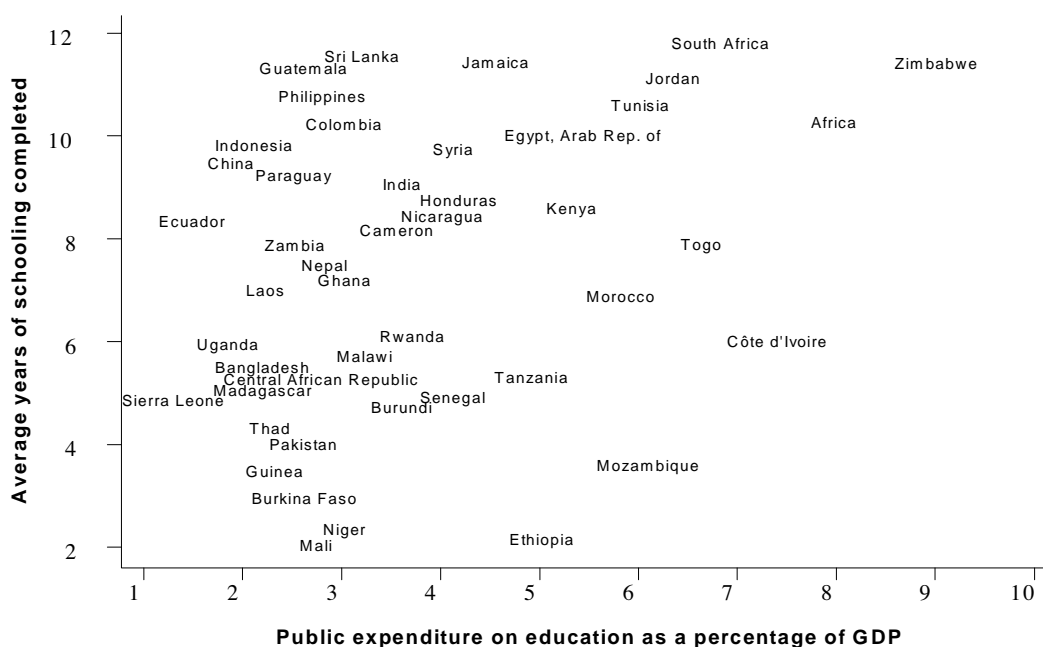
The first step is to analyze expenditures by level of education. Table 19.1 presents a typical format. Cross-country comparisons of expenditure shares across levels, unit costs, and costs per graduate can provide a useful picture of the relative emphasis placed on primary versus secondary and university education and the relative efficiency of these segments of the education system, compared with other countries. The most helpful benchmarks usually are data from other countries at a similar level of GDP, and especially those known to have well-performing education systems.

Such cross-country comparisons can help countries address three questions:

- Should aggregate spending on education be increased (that is, is overall education spending relative to GDP lower than in comparable countries)?
- Is there scope for improving allocative efficiency by shifting public funding across levels of education—for example, from higher education, where the “wedge” between public and private benefits is smallest to basic education, where it is largest?
- Is internal efficiency low—for example, are aggregate spending and allocations across levels broadly parallel with other countries but results within levels, such as costs per graduate, worse—calling for policies to improve the effectiveness with which resources are used?

Private provision and financing. One reason why countries with similar levels of public education spending may obtain different overall education outcomes is the differing extent of private provision and financing. Even when governments provide public education free of charge, private provision invariably still exists and can be of significant proportions. Private providers can be for-profit schools or schools administered by NGOs or religious providers, and it is important for policy purposes to distinguish between them. Private enrollments can reflect shortfalls in public school spaces or parents’ preferences for a different type of education, for religious reasons, peer effects, or for perceptions of school security or quality, for example. In a few low-income countries, very large private sectors (often largely nonprofit) have developed to accommodate the demand for education when public provision has broken down after

Figure 19.6. Public Expenditures on Education versus Average Years of Schooling Completed



Source: Mingat and Suchaut (2000).

civil conflict. For example, private sector enrollments at the primary education level have reached 89 percent in Swaziland (1996), 80 percent in Haiti (1997), and 57 percent in Uganda (1995). In all countries, the share of private provision is usually larger at the secondary and tertiary levels of education.

Private financing can also be significant. Private financing takes a wide range of forms, from informal parent contributions to public schools to full tuition payment by households for privately provided education. In between lie myriad arrangements for some degree of public subsidy to private providers, whether NGO or religious, as in many Latin American countries, or for-profit schools, as under Chile's voucher system. The rationale for such arrangements is the higher efficiency private providers often demonstrate per unit of public subsidy. Whether or not private providers produce higher learning outcomes per unit of expenditure, after controlling for differences in student background factors, however, is still a matter of active research and debate.

The World Bank, UNESCO, and others recommend strongly against charging tuition fees for public basic education, but the severe shortage of public resources in some countries creates strong pressures for family contributions, whether official (fees or purchase of school supplies) or unofficial (cash payments to teachers or in-kind support, such as housing). When evaluating the characteristics of the education sector in a PRSP context, it is important not to neglect the private sector. It is also important to differentiate between the types of private providers operating and the different forms of private financing, as these can raise very different policy issues, especially for the poor.

The following types of information are useful for analyzing the scope and nature of the private education sector. In general, all statistics should be broken down by type of provider (for-profit or non-profit/religious):

- ⊃ Number of private school students and their socioeconomic background
- ⊃ Private sector market share by level of education
- ⊃ Number and types of private institution, by level of education
- ⊃ Average teacher qualifications and salaries in public versus private schools
- ⊃ Average student learning outcomes in public versus private schools (controlling for student background), if available.

Table 19.1. Public Expenditures on Education

	<i>Vietnam (1998)</i>	<i>Mozambique (1998)</i>	<i>Madagascar (1999)</i>
Aggregate spending^a			
At current prices (US\$'000s)	951,446	87,595	98,493
Share of GDP (%)	3.5	2.2	2.8
Share of total govt.spending (%)	17.4	10.17	17.8
Spending by level (current prices) (US\$'000s)			
Basic education	346,326	36,730	34,990
Secondary education	246,425	17,108	18,961
Vocational	63,747	4,293	2,885
Tertiary education	123,688	13,674	11,027
Other	171,260	7,037	401
Capital spending		6,535	22,616
Spending by level (% share)			
Primary education	36.4	46.6	51.3
Secondary education	25.9	21.7	27.8
Vocational	6.7	5.5	4.2
Tertiary education	13.0	17.3	16.1
Other	18.0	8.9	0.6
Unit costs per year^b			
Spending per primary student	34	20	24
Spending per secondary student	38	74	106
Spending per vocational student	239	159	
Spending per tertiary student	191	1,640	397
Internal efficiency (US\$)			
Spending per primary graduate		171	324
Spending per secondary graduate		740	1,003
Average expenditure per pupil in relation to per capita GDP			
In primary	0.10	0.08	0.11
In secondary	0.12	0.30	0.47
In vocational	0.74	0.64	
In tertiary	0.59	6.59	1.68

a. Based on recurrent and capital spending for Vietnam; based on recurrent spending only for Mozambique and Madagascar. Not including external expenditure on education.

b. Based on total students enrolled in the public education sector (US\$).

Source: World Bank (2000a, 2000b, and 2001).

System quality

The allocation of resources across different functional areas is important, as it affects the quality and performance of the education sector. A key concern is often relatively limited allocations for nonsalary current needs.

In most countries, the bulk of expenditure on education goes to buying the basic inputs of the education process: the time of teachers and other staff, equipment, and materials. There is typically a bias toward expenditures on teachers (salary inputs) rather than nonsalary inputs, such as books and learning materials that at the margin contribute more to student attainment and learning. Further breakdown often reveals relatively heavy expenditures on salaries of nonteaching (administrative) staff relative to teaching staff.

Analysis of the breakdown of recurrent spending by function can provide useful insights, particularly when compared with data from other countries (see table 19.2). Education expenditure analyses often also show a bias toward capital spending (new school construction) rather than toward recurrent maintenance spending to preserve existing infrastructure. It is important, especially in HIPC countries

where significant amounts of new funding are becoming available for the education sector, to ensure that funds used for new construction do not generate recurrent (maintenance) costs that may be under-budgeted in the future.

System equity

Education systems typically function with large variance in the distribution of resources across different levels of the system, across different regions, and across different schools. Analyzing the impact of these spending patterns on disadvantaged groups is crucial for poverty reduction strategies. If LSMS or other household survey data are available, benefit–incidence techniques can show which income groups benefit most from government spending. The three major steps in the calculation are as follows (see also chapter 6, “Public Spending”):

- rank the population sample by household income;
- divide the sample into quintiles or deciles; and
- calculate the expenditure shares going to each quintile (decile) for each educational level.

Table 19.3 shows that in many (but not all) developing countries for which data are available, the lowest quintile receives the smallest share of government expenditure.

A key factor underlying the observed disparities is that where universal basic education has not yet been achieved, students reaching secondary and tertiary education tend to be from upper-income groups. The poor, ethnic minorities, girls, and children with disabilities typically reach these levels of the system in very small numbers. The relatively high subsidy per student in publicly funded schools at the secondary and tertiary levels therefore has a regressive impact.

The distributive pattern of private expenditure. If private education provision or household spending on education is significant in a country, it is also important to determine the distributive pattern of

**Table 19.2. Public Recurrent Spending by Level of Education and Function:
Madagascar, 1998 (figures expressed as percentage of total)**

	<i>Primary</i>	<i>Secondary</i>		<i>Teacher training</i>	<i>Vocational/ professional</i>	<i>Tertiary</i>
		<i>1st cycle</i>	<i>2nd cycle</i>			
Wages and salaries						
System administration	12.56	12.14	10.82	4.87	10.39	1.70
School administration and support ^a	0.04	1.88	21.69	15.85	22.37	28.22
Teaching staff	58.63	52.56	52.26	10.77	33.89	28.53
Other	0	0	0	0	0	3.48
<i>Subtotal</i>	<i>75.58</i>	<i>83.50</i>	<i>84.78</i>	<i>31.55</i>	<i>66.65</i>	<i>61.93</i>
Other recurrent spending						
System administration	11.60	11.22	10.00	4.51	20.12	5.21
Functioning of public schools ^b	10.62	3.47	4.13	63.66	9.97	15.14
Support to students	0	0.58	0.46	0.28	0.52	12.89
Private school subsidies	1.03	0.78	0.42	0	0	0
Grants to national organizations	1.17	0.44	0.22	0	0	0
Other transfers	0	0	0	0	2.74	4.83
<i>Subtotal</i>	<i>24.42</i>	<i>16.50</i>	<i>15.22</i>	<i>68.45</i>	<i>33.35</i>	<i>38.07</i>
Total recurrent spending	100.00	100.00	100.00	100.00	100.00	100.00
% of total recurrent spending for the subsector	51	19	9	1	4	16
% of students enrolled in the subsector	82	12	3	0.1	2	1

a Wages and salaries for administrative and pedagogical support staff assigned to public schools.

b Materials and supplies for public school and other recurrent spending.

Source: World Bank (2001).

private expenditures. Are poor families paying more for their schooling, in absolute or relative terms? What does private spending on education buy? Are households paying for private schooling, and if so, at which levels of education? Are they financing illegal items; for example, payments for access to public institutions that are officially free of charge, as reported in many parts of the former Soviet Union? Are significant expenditures made on complementary goods such as uniforms, transportation, and private tutoring? Household survey data can often help identify where private resources are being spent, and by whom.

Allocation by region, district, and school. Some of the most important insights for education policy and poverty reduction strategies will come from analysis of anomalies in the distribution of education resources across different regions of a country or to different schools within those regions. Comparison of the public resources available to schools in different regions can be made through a simple cross-tabulation by region of total funding per child in each grade. Analyzing the allocation of resources across schools is often more difficult, as school-level budget data do not exist in many centralized systems, but is crucial. Approximations may be made by analyzing the distribution of teachers across schools, and these may be revealing: in one African country, the number of teachers allocated to schools with equivalent student enrollments was found to range from one teacher to 10. Such inequities in resource allocation can have profound effects on school quality and education outcomes.

An examination of public spending patterns in education is fundamental to helping policymakers decide whether to focus on (1) mobilizing more funding, (2) reallocating existing funding (across education levels, types of expenditure, and beneficiary groups or between public and private providers), (3) increasing the efficiency of existing funding within current allocations, or (4) a combination of these. The analysis of spending patterns sets the stage for the evaluation and selection of the policies most appropriate in the given context.

19.3.3 Identifying causal factors: the decision-tree approach

Public and private expenditure analysis of how much a country invests in education in aggregate, how the money is spent, and who benefits is important, but often falls short of producing a detailed understanding of the key constraints to better performance in a given education system. A third diagnostic step is to work back from the observed outcomes through a decision tree, with the aim of identifying more precisely the causal factors behind education outcomes and their variation across individuals, income, gender and ethnic groups, and regions within a country. Decision-tree analysis is particularly helpful in disentangling the socioeconomic or demand-side factors that influence education outcomes (including individual, household, and community-level factors) from the policy and institutional characteristics of the education sector itself.

Table 19.3. Distribution of Government Education Expenditure

Country	Year	Percentage Share of Public Expenditure by Income Quintile					% difference between 5th and 1st quintiles
		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Côte d'Ivoire	1995	14	17	17	17	35	150
Guyana	1993	15	16	16	21	32	113
Madagascar	1993/94	8	15	14	21	41	413
Nepal	1996	11	12	14	18	46	318
Nicaragua	1993	9	12	16	24	40	344
Panama	1997	20	19	20	24	18	-10
Romania	1994	22	21	21	20	17	-23
South Africa	1993	21	19	17	20	23	10
Tanzania	1993	13	16	16	16	38	192
Vietnam	1992/93	12	16	17	19	35	192

Source: Guo, Steele, and Glewwe (1999).

Public expenditure analysis follows the funding from the top of an education system—the central government budget—to the bottom, to schools and individual student beneficiaries. Such analysis can expose many of the issues affecting the allocation and/or efficient use of resources, but more precise understanding is possible if this top-down analysis is complemented and cross-checked with an analysis of the education system made from the bottom up. The education decision tree shown in figure 19.7 can help in this analysis. The following sections provide a brief overview of how to use the decision tree; a full, step-by-step guide is available in technical note P.3.

The decision tree starts at the top by asking if the percentage of the age group graduating from basic education is acceptable or too low. If the primary completion rate (or net enrollment rate in the final year of primary education) is low compared with other countries, the tree points to the need to identify whether the underlying reason for this is low intake into grade one, high dropout during the basic cycle, or, as in many countries, both. If low intake into grade one is a significant part of the problem, analyzing the composition of the excluded population, using the LSMS-type data discussed earlier, should be given first priority.

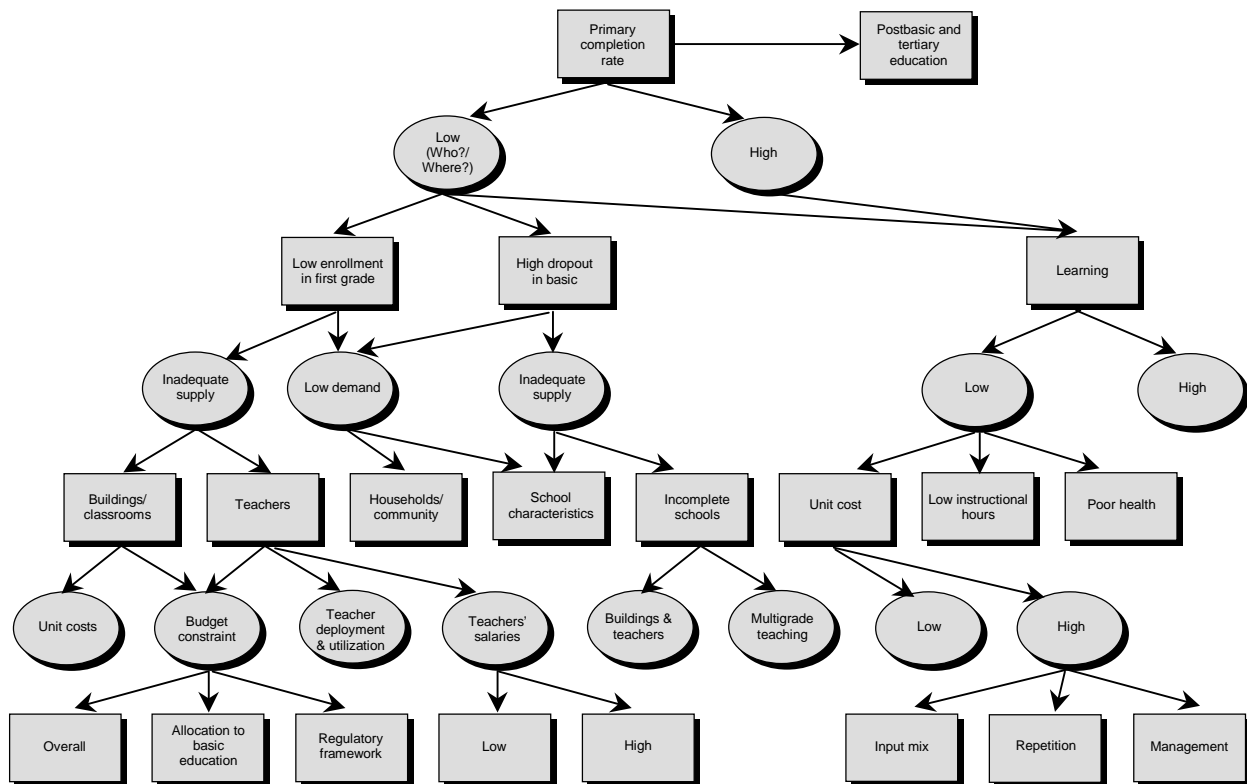
The next step is to establish whether the underlying reason for low enrollment in the first year of basic education is low demand for schooling or an inadequate supply of school places.

Analyzing supply constraints

If the basic issue is inadequate supply, the leftmost branch of the tree indicates the two major sources of supply constraints, that is, shortage of physical infrastructure (school buildings and classrooms) and/or shortage of teachers.

Shortage of schools and classrooms. The adequacy of school infrastructure can be examined by measuring the pupil-to-classroom ratio and the average distance from home to school. LSMS data often permit analysis of the proportion of the relevant age group (in different areas of the country) living, say, more than 3 kilometers from school.

Figure 19.7. Decision Tree for Analyzing Education Outcomes



If the problem is a shortage of schools and classrooms, the analysis moves to whether the underlying problem is that prevailing construction costs are too high, compared with unit construction costs in other sectors or with different school models. Very often pilot, NGO-supported, or social fund projects in the same country will be found to have much lower unit construction costs because of simpler or more innovative building standards, a greater reliance on local materials, or community involvement in construction.

If construction costs are reasonable, easing infrastructure supply constraints will require the mobilization of additional resources. In this case, the decision-tree analysis links back to the analysis of public and private expenditures and evaluation of government effort (the share of GDP devoted to education), foreign aid availability, private expenditures and their progressivity, and the share of the budget devoted to basic education in construction.

Shortage of teachers. In some countries, enrollments are less constrained by the number and distribution of schools than by an inadequate number and/or inefficient deployment of teachers in the system. A useful indicator is the national pupil-teacher ratio, found often in the EMIS (Education Management Information System) and/or the annual school survey.

It is relatively common to find teacher supply adequate overall, but with shortages in some regions and schools and an excess of teachers (resulting in very low pupil-teacher ratios) in other regions and schools. Many countries are unable to attract teachers, especially females, to work in remote rural areas. Another common problem is the assignment of large numbers of teachers to administrative work or other nonteaching positions. If the overall number of teachers is already inadequate, this will exacerbate shortages, particularly in the poor and rural areas that are typically the last regions to which basic education access is extended.

The inability of the education system to hire an adequate number of teachers is often linked to high average salaries for teachers, making it impossible to pay enough teachers from the budget to satisfy overall needs. This is particularly true in African countries. It is seldom easy to say whether teacher salaries in the public sector are too high, too low, or broadly appropriate, given market forces, but when salaries average 6 to 7 times per capita income, as in francophone African countries (compared with 2.5 times per capita income in Southeast Asian countries) there is clearly an issue (Mingat and Suchaut 2000). Criteria to guide this assessment are suggested in box 19.2.

Analyzing low demand

The central branch of the decision tree analyzes weak demand, which can also be an important factor limiting enrollments. A demand problem clearly exists when, despite the availability of well-distributed classrooms and schools, significant numbers of families do not enroll their children in school. Many factors affect household decisions on schooling, including the perceived returns to education in the labor market; cultural expectations; household income; direct costs of schooling, such as uniforms, books, transportation, and miscellaneous fees; indirect costs, such as forgone earnings; and, increasingly, HIV/AIDS and other catastrophic family health problems.

The direct costs of schooling are almost always higher for children with disabilities because of transportation issues and cultural taboos that sometimes preclude parents from “showing” disabled children outside the home. In some countries, however, disabled children are more likely than able-bodied children to be sent to school because the indirect costs of their schooling may be lower—for example, they may be unable to provide agricultural labor—and the expected benefits of their schooling, relative to limited alternatives, may be high. Enrollment patterns of children with disabilities must thus be analyzed in the country context.

Variations in demand for schooling can be substantial across ethnic groups, across socially and physically disadvantaged groups, and across provinces, districts, and communities, and especially by gender. Parents unable to afford the direct costs of keeping all of their children in school often choose to keep their daughters at home to perform household chores, or because of safety concerns, or because educating their sons is perceived to bring greater benefits to the immediate family than educating

Box 19.2. Criteria for Evaluating the Level of Teachers' Pay

- Are there many more individuals applying for teacher training and for work as teachers than there are places in teacher training colleges and established teacher positions?
- How does the average teacher salary compare with (1) per capita GDP; (2) average wages in other sectors of the economy for individuals with similar education, adjusted for hours worked; and (3) teacher salaries in other countries, as a share of per capita GDP?
- Do young teachers in the public sector earn a living wage, (that is, a salary that is clearly above the poverty level, or enough to support a family of four without the teacher having to take a second job)?
- Are teachers in the public and private sectors paid broadly similar salaries for the same hours?

daughters. Researchers analyzing household spending patterns on education in Vietnam concluded that “schooling of girls is treated as more of a luxury (less of a necessity) than schooling of boys” (Berhman 2000).

Research also indicates that important interactions exist between supply and demand, related to actual or perceived quality of the schooling available. Even where adequate school places exist, parents may choose not to enroll their children because the school lacks electricity or toilets, because of the behavior or perceived effectiveness of teachers, because of a lack of books and materials, because of the language of instruction used, or other reasons.

High dropout rates in basic education. Low primary completion may also indicate a high dropout rate. Students may drop out because of the fact or perception that the quality of teaching and learning at school is low or because there are more rewarding alternatives to schooling—in essence, they drop out when the direct and indirect costs of staying in school exceed the expected benefits. Dropout is highly correlated with repetition (discussed in the section 2.3.3), which shifts the cost–benefit ratio. Dropout can also stem from inappropriate teacher behavior. Social assessments can help in analyzing these factors. Key issues to investigate are the perceptions of parents and of the community of the relevance and accessibility of the curriculum (especially for children from poor families), the possibility of conflicts between the school calendar and needs for seasonal labor, the level of teacher qualifications, teacher behavior, and the availability of books and supplies.

High dropout rates in areas with incomplete schools are common in poor countries, especially in rural areas. The obvious remedy for fixing an incomplete school is to build more classrooms and recruit more teachers. This can be expensive, however, especially in areas of low population density. Countries seeking to improve the efficiency of their education spending need to consider broader options, including multigrade schools in which teachers teach more than one grade, double-shift schools, the provision of school transport, or distance learning. These options are discussed further in section 19.4.

Analyzing low learning achievement

The rightmost branch of the decision tree addresses student learning—the ultimate outcome of an education system. If national learning assessments of basic literacy and numeracy skills do not exist, the development and administration of well-designed but relatively simple and low-cost learning assessments that can be given on a regular cycle to a representative sample of students should be a priority.

If national assessments or national examination data are available and suggest that student learning, on average, is acceptable, it is still important to analyze the variance in student performance, especially as it relates to family income, gender, ethnicity, or disability.

Learning outcomes in most low-income countries, even in those in which nearly all children complete basic education, are often quite low, on average. The rightmost section of the decision tree focuses on why outcomes may be unsatisfactory and what can be done to improve learning.

Where there is low access and learning achievement is low (the worst-case scenario), there is a need to investigate both inputs and processes. Inputs that can contribute to low learning achievement include irrelevant, poorly articulated, overloaded curricula; inadequate teaching and learning materials; inadequate instructional time; and unsuitable learning environments. Associated processes include poor teaching quality; inadequate utilization and monitoring of the curriculum and poor use of instructional

materials; low teacher motivation; unsuitable language of instruction; inappropriate student assessment and examination processes; poor school management and instructional leadership; and home practices that are not supportive of effective schooling.

At this point the decision-tree analysis recalls the public expenditure analysis of the unit cost of basic education—the amount of public spending per pupil per year—which directly affects classroom-level conditions, including key factors such as class size, teacher qualifications, availability of learning materials, and so on. If the unit cost is low, it may be necessary to increase spending so that learning outcomes might be raised. Analysis will be required to determine the ideal mix of inputs and the best utilization of each of these inputs to improve learning outcomes.

Commonly, however, unit costs are high and yet learning outcomes and completion rates are low, indicating that the overriding problem is system inefficiency. The three main causes of low efficiency are: (1) an input mix that does not support learning, (2) high repetition rates, and (3) inefficient management. Analysis of the regional equity of spending is important: if unit costs are much lower in some schools or districts than in others and, in particular, if less is spent on children in poor communities (for example, because the least qualified and least experienced teachers end up teaching in poor communities, or because schools in poor areas tend to be inadequately equipped), actions to improve the equity of spending should be a priority.

As noted earlier, one cause of high unit costs and low learning outcomes is that the mix of inputs (or functional allocation of spending) is suboptimal and does not support learning—with too much spent on administration relative to teaching or too much on personnel in general (administrators and teachers), and too little on nonsalary pedagogical inputs such as textbooks and other instructional materials.

Another potential source of high unit costs combined with poor learning outcomes is poor management. It is important for an education system to focus on learning outcomes and to ensure that inputs and processes are directed to this end. Employing teachers but without ensuring that they show up for school, or failing to upgrade their skills as they continue in service, wastes a country's limited budget for teacher salaries. High spending on textbooks without making sure that these are distributed on a timely basis and used in classrooms as intended is also a waste of resources. In a typical education system, the best-performing schools produce five times better results (whether measured in terms of student learning or graduation rates) per unit of expenditure than the worst-performing schools in the same system.

Student factors. Poor health can be a major cause of low learning achievement. In many poor countries, and especially in the poorest regions of those countries, malnutrition and disease limit students' attendance and their capacity for learning. Where malnutrition is prevalent, many children are physically stunted (below normal height) by the time they enter school, and many of those who are malnourished and sick never attend school at all. Those who do enroll tend to be listless from hunger and weakened from frequent bouts with diarrhea and fever; their attendance and academic achievement obviously suffer. Children with physical or learning disabilities who are not given proper assistance also suffer. The potentially high benefits of investment in education are never realized in the case of these sick and malnourished children. Cost-effective actions that can be taken at the school level to address common health and nutritional problems have a high payoff in terms of student attendance in learning (see also section 19.4). Simple training to sensitize teachers and help them provide the extra assistance and encouragement that vulnerable children, such as orphans and children with disabilities, need can also be relatively low cost, but have a high return in terms of the academic progress of these children.

19.4 Reform Strategies and Priority Programs

Careful diagnosis pays off when it helps policymakers develop more successful reform strategies and more cost-effective and better-targeted programs. This section focuses on moving from diagnosis to policy and program design. It looks at the key policy levers available to ministries of education to improve outcomes for the poor in education before focusing on the challenge of eradicating adult illiteracy and on lessons from international experience with the design and delivery of cost-effective programs. It also considers the key policies in other sectors that have an important influence on education

outcomes of the poor, including macroeconomic and fiscal policies and the delivery of other social services, notably ECD interventions and health and nutrition programs.

19.4.1 Education policies to improve outcomes for the poor

Table 19.4 summarizes the three key education challenges that low-income countries commonly face in improving outcomes for the poor in basic education. The priority issues will vary from country to country, and the diagnostic process outlined in Section 19.3 is designed precisely to help countries analyze which factors are most urgent given their unique context. Virtually all countries, however, face some degree of challenge in all three areas:

- ⊃ expanding the supply of schooling to ensure that all children have access to basic education;
- ⊃ improving quality; and
- ⊃ stimulating demand, especially to increase the participation of girls.

In each area, experience from around the world offers some guidance as to specific policy instruments and strategies that can help countries address these challenges most cost-effectively. The following three sections—“Expanding supply,” “Improving quality,” and “Stimulating demand and relieving household constraints”—focus on the basic education system, although some of the same issues and strategies are relevant for secondary education. Issues specific to secondary and tertiary education are considered under the fourth section, “Postbasic and tertiary education.”

Expanding supply

How to increase access to education is the most obvious challenge faced by HIPC and other low-income countries, in some of which as many as 50 percent of school-aged children still never enter a primary school. In many places, the magnitude of the challenge is such that even with significant additional external resources, the goal of universal primary access and completion cannot be reached without major changes in the way education services are designed and delivered. Some of the countries that have made the most progress toward EFA over the past decade—such as Bangladesh, China, Uganda, and Guinea—have developed new and substantially more cost-effective schooling models. The core elements of these models are:

- ⊃ lower-cost standards for new schools and new teachers;
- ⊃ more careful targeting of school expansion to communities lacking access;
- ⊃ strategies to use existing school infrastructure more efficiently, such as double-shift schools in urban areas and multigrade schooling in rural areas;
- ⊃ incentives for the expansion of quality private (for-profit and NGO) providers; and
- ⊃ tighter system management to lower administrative overhead, reduce teacher absenteeism, and plan and budget more effectively.

Lower-cost expansion of basic education

Reducing construction costs. Pilot initiatives and social funds in many countries have documented the scope for lowering construction costs by as much as half through the use of more modest, but still safe and adequate, design standards; the use of lower-cost local construction materials; and through mobilizing community labor to help build schools. These directions are essential for EFA progress: donors should ensure that their procurement standards do not stand in the way of more practical, low-cost school construction.

Careful school mapping and expansion planning is also important: it is not uncommon for urban areas to have excess school capacity while remote rural areas lack schools. A new but important dimension is the need for school systems to plan for the impact of HIV/AIDS on student enrollments and teacher supply over the coming decade. A demographic model is available to assist in this.

Table 19.4. Key Education Policy Options

Area of concern	Policy choices	Means
Expand supply	Low-cost and carefully targeted expansion	<ul style="list-style-type: none"> • Lower-cost designs and construction material • Community-based construction • Fast-track preservice training (that is, shorter duration formal training, more hands-on training in classrooms, distance delivery) • Locally recruited teachers • Incentives for teacher deployment to remote and rural areas
	More cost-effective use of existing school infrastructure	<ul style="list-style-type: none"> • Double-shift schools • Multigrade schools • Teacher redeployment and efficient class size
	Greater private provision and financing of education	<ul style="list-style-type: none"> • Simple regulatory framework for private providers (that is, accreditation system and collection of basic statistics) • Grants to cost-effective nonpublic providers
	Tighter system management	<ul style="list-style-type: none"> • Planning for HIV/AIDS impact • School mapping (and later, more sophisticated EMIS) • Review role, selection, and training of school heads • Control of teacher absenteeism • Equitable funding across schools (per student allocations)
Improve quality	Quality teaching	<ul style="list-style-type: none"> • Emphasis on literacy and numeracy skills and clear learning goals for students • Student-centered interactive teaching methods • Ongoing professional development in content areas and pedagogical skills • Teacher networks and resource centers • Quality teacher manuals • Mother tongue instruction in initial years • Increased days of instruction
	Quality instructional material	<ul style="list-style-type: none"> • Local teaching materials • Timely and equitable distribution of low-cost learning materials (textbooks) to schools and to students • Curriculum revision to improve relevance • Distance education (for example, radio education)
	Tighter accountability mechanisms	<ul style="list-style-type: none"> • Simple school monitoring and reporting system (including private schools) • Assessment of student learning outcomes • Stakeholders empowered in school affairs
	Institutional strengthening	<ul style="list-style-type: none"> • Reinforced management functions (that is, planning, budgeting, staffing) • Greater school autonomy
Stimulate demand; relieve household constraints	Promote education of girls	<ul style="list-style-type: none"> • Targeted stipends for girls • Labor-saving technologies, water points, and childcare facilities at school to ease girls' household work • Site schools closer to communities and provide separate latrines for girls • Recruit more female teachers and administrators • Involve mothers in school committees
	Ensure school affordability	<ul style="list-style-type: none"> • Eliminate school fees • Provide textbooks and school supplies free to target groups • Offer stipends to poor households and AIDS orphans
	Make schooling attractive to parents and communities	<ul style="list-style-type: none"> • Involve parents in school councils with decision power • Make school calendar compatible with local economic activity • Improve school environment with latrines, water, electricity • School health and nutrition programs (FRESH) • ECD programs • Nonformal education programs for youths and adults • Community libraries (eventually Internet centers)

Paying attention to the needs of children with disabilities is also important. Sometimes simple changes to school building designs can ensure that schools are accessible to children with limited mobility. New information about the numbers of children with physical and learning disabilities in developing countries has revealed several troubling facts. First, as much as 5 percent of the school-aged population may suffer from disabilities, a larger share than previously suspected. Second, there is a high tendency for these children to be among the very poorest in society. Third, schooling participation of children with disabilities is among the lowest of any group. Growing evidence suggests that the most cost-effective approach is not to build special schools for children with disabilities; more promising are the innovative and relatively low-cost “inclusive education” approaches being adopted in China, Nepal, the Lao People’s Democratic Republic, and elsewhere to mainstream the participation of children with disabilities into the regular school system by reducing physical and other barriers to their participation (see section 3.1.3)

Teacher preparation and deployment. Many countries striving to expand access to basic education rapidly find that their traditional models of teacher preparation and standards (especially if the requirement is a tertiary education degree) make it impossible to groom teachers in adequate numbers. Complicating this is the loss of teachers to HIV/AIDS or through migration to more attractive employment that has become available as a result of AIDS mortality in other sectors. These factors are already straining the capacity of some African countries to produce adequate numbers of new teachers.

A second issue is the difficulty of attracting and deploying highly educated, usually urban teachers to the rural areas where school systems need most to expand. Third, the relatively high average salaries of teachers with higher-level degrees and full civil service status may make the costs of expanding the teaching force prohibitive. Given these contexts, it is crucial to develop strategies for lowering the costs of teacher preparation and/or for recruiting a new teacher cadre.

To speed up and lower the costs of teacher preparation, countries are developing “fast track” standards that combine shorter formal training with more emphasis on hands-on practice in classrooms, and are making greater use of distance education (radio/video or correspondence courses) for teacher trainees. Distance teacher training programs in China, Pakistan, Tanzania and elsewhere have lowered the costs of producing a graduate by 30 percent or more (Perraton and Potashnik 1997). Such programs could have significant potential for countries seeking more rapid training and certification of the teaching force.

Countries ranging from Senegal, Burkina Faso, and Benin to Mexico, Uruguay, and India have found that establishing a new teacher cadre is another important strategy, as this can not only allow faster teacher recruitment but can also enable easier deployment of teachers in rural areas and expanded local language instruction. Teachers within the new cadres are often recruited from the local community in rural areas and may possess only secondary-level education, but are offered special training and more flexible incentives than the traditional teaching force. Although these teachers are fully incorporated into the education system and receive in-service training, materials, school supervision, and other support, just like other teachers, they typically do not have civil service status, salaries, or benefits. In some cases their salary costs can be half those of regular teachers. Countries pursuing this route rarely face a shortage of candidates for these cadres, but the long-term political viability of this approach may raise issues (see Section 19.5.2).

Better use of existing infrastructure

Multigrade schooling. Reaching children in the remotest hamlets where population density is low and unit costs are correspondingly high is a challenge for all school systems. Colombia, Guatemala, Burkina Faso, Zambia, the Philippines, and other countries have found multigrade schooling (one teacher teaching several different grades in a single classroom) to be the most cost-effective way of making optimal use of classroom facilities and of providing complete primary schooling in sparsely populated areas. Multigrade teaching works best where teachers are trained to manage a classroom of children of different ages, where all students have self-paced learning materials appropriate for their grade, and where older students help tutor younger students. Research shows that student learning in such settings compares very favorably with learning outcomes in traditional classrooms.

Double-shift schools. Double-shifting addresses the problem of classroom shortages in densely populated areas. In urban areas, schools operating two shifts per day (sometimes with a third, evening, shift for older students) can achieve intensive and more efficient use of school infrastructure, freeing up resources for other priorities. Countries as wealthy as Singapore continue to use double-shifting throughout the primary system for cost-effectiveness reasons. Research indicates that double-shift schools can allow students adequate instructional time without impairing learning. However, care must be taken that vulnerable groups, such as girls, are not routinely assigned to the less desirable shifts.

Teacher redeployment and class size. Rationalizing the assignment of teachers across schools can improve system efficiency and often also equity, although it may be necessary to offer incentives such as housing or other allowances to attract teachers to less desirable areas. Class size is an important factor in education efficiency. The Republic of Korea and Singapore, for example, maintain an average class size of more than 40 in basic education; although this may seem high, it enables resources to be assigned to other inputs such as books, materials, and computers. Education research across a large range of countries supports the view of Korea and Singapore that this tradeoff is cost-effective; lowering average class size below 40 should not be a priority use of resources in low-income countries.

Expanding private provision

Making maximum use of the private sector is also important when trying to cost-effectively expand education coverage. Involving NGO or for-profit private providers in basic education can lead to better quality of education, by mobilizing available management capacity, providing more choice for families, and possibly increasing competition among providers. In Peru, for example, contracting with an NGO provider to administer public schools in remote rural areas resulted in better-functioning schools. Governments can increase schooling opportunities and quality by contracting out public schools, by providing scholarships to poor students to attend nongovernment schools, and by subsidizing the construction of nongovernment schools.

Improving quality

Education systems across the world, no matter how well resourced, are grappling with the challenge of how to improve quality. For countries trying to expand access at the same time, the challenge of improving quality is even greater. However, research shows unequivocally that expanding access without ensuring minimally adequate quality is a formula for low efficiency—children do not learn, grade repetition is high, and large numbers of students drop out before completing basic education. School quality is not a luxury that can be set aside until universal coverage has been achieved; development of the two must go hand in hand.

The key to improving overall quality is to find low-cost, but effective, strategies with respect to teaching quality, instructional materials, school and system accountability, and education administration.

Quality teaching

Research shows that the single most important determinant of school effectiveness is teacher quality. However, research also shows that teachers' formal qualifications are not well correlated with their effectiveness in the classroom, for two reasons: (1) teacher preservice training in many countries is of low quality and imparts only traditional, "frontal" teaching methods; and (2) classroom teachers enjoy a degree of isolation from scrutiny and performance feedback that leaves wide latitude for variations in behavior and motivation. Revitalizing teacher preservice training is important, in part to attract high-caliber individuals into the profession, but it takes time for its impact to be felt throughout the system. Many low-income countries urgently need to achieve an immediate improvement in teachers' skills and motivation.

Teacher networks and ongoing professional development. Where teachers' content mastery is relatively weak, a strong focus on the teaching of basic literacy and numeracy skills, with clear learning goals, is important. Teachers also need to be encouraged to develop more student-centered and interactive teaching styles and to break away from frontal lecture techniques. India has shown that, with proper

training, teachers can effectively use more interactive pedagogy even in classes of more than 50 children. Teachers also need training to help them deal sensitively with gender differences and with the special learning and emotional needs of children who have lost their parents to HIV/AIDS, suffer from disabilities, and so on.

Ongoing teacher development is the key to such improvements. Countries are beginning to implement relatively simple, low-cost strategies for teacher development that are having a direct impact on teachers' skills and the use of those skills. *Microcentros* in Chile and Colombia, for example, bring small groups of rural teachers together on a monthly basis to share lesson plans, assess student work, and help each other improve their teaching practice. India's DPEP (District Primary Education Program) network of teacher resource centers provides teachers with new learning materials, on-the-spot advice, and mentors who regularly go out to visit classrooms and reinforce new skills. Regular visits from district resource teachers are similarly helping teachers to improve their practice in Lesotho, Kenya, and Nepal. These approaches are having more impact than many more costly institute-based in-service training programs and traditional school inspectors.

Language of instruction. Another important factor in quality teaching is the language used for instruction. Research from around the world has demonstrated that children become literate more easily and more quickly when taught in their mother tongue or another familiar language. Low-cost but effective strategies developed in polylingual societies include using adults from the community as teachers, keeping literacy materials low-cost and simple and involving NGOs to develop materials in languages not yet written, and incorporating local content in the curriculum as much as possible. Studies show that children taught for the first two to three years in their mother tongue before transitioning to a language of wider communication have higher academic performance than peers of similar linguistic and socioeconomic background who have been taught only in the language of wider communication. The financial savings from lower repetition rates are often more than enough to cover the cost of introducing mother-tongue instruction in the early years of basic education.

Instructional time. Research has also established clear links between student learning and effective instructional time, or "time on task." But extending the school day is a costly option and likely to be prohibitive for many countries, especially where double-shifting is necessary to achieve universal coverage. More practical measures include ensuring that the official school calendar is effectively observed and training teachers in better management of available class hours. In countries where the official school calendar is far shorter than the OECD average of 1,000 hours per year, however, consideration should be given to extending the school year up to international norms.

Quality instructional materials

Research has demonstrated the cost-effective impact of an "enriched classroom environment" on student learning. However, the reality in many low-income countries is an absolute shortage of reading books, maps, manipulatives, and other materials, and textbooks that are out-of-date, irrelevant, gender-insensitive, and often available only in limited numbers. Equally critical are the many cases in which materials are not effectively used.

The quality of instructional materials is directly linked to the quality and relevance of the curriculum, and many countries need to revise curriculum standards. Until this is done, major investment in textbooks should be avoided—low-cost mimeographed worksheets, stories, and other materials may be substituted effectively. Alternative strategies that have been used with success in Colombia and India include giving small grants to teachers to develop their own teaching-learning materials and making instructional materials out of locally available resources.

Educational technology, while still limited in most low-income countries, has been demonstrated to increase student learning cost-effectively. While the media used most widely to date are radio and television, radically declining costs of Internet connectivity are revolutionizing the landscape of distance learning and information resources. It is difficult to predict the rate at which Internet connectivity will expand in HIPC and other low-income countries, but the potential for countries to leapfrog into on-line library systems and avoid costly investments in physical books and libraries is clearly there, with the

promise of a dramatic increase in the quantity and quality of learning resources available to schools and students.

Educational technology can enhance the quality of education both by increasing the availability of up-to-date teaching materials and by providing the most highly qualified teachers with the means of reaching a wider audience. It can be implemented through a variety of means, including radio, print, correspondence, satellite, or the Internet. Traditional distance education may be most appropriate at present for improving the access and quality of basic education in low-income countries, such as through radio instruction to remote rural communities, but in the future new technologies and on-line learning resources can be expected to transform the way education is conceived, delivered, and received.

Tighter accountability

Managing quality improvement requires meaningful measures of current performance, mechanisms for tracking progress over time, and rewards and sanctions for good and poor performers. Most education systems—even in industrial countries—lack these.

Country experience points to two tracks for strengthening accountability, one emanating from the top down and the other from the bottom up. The top-down strategy involves developing better systemwide information on the comparative performance of schools, districts, and provinces, and to use this both to reward good performance and to hold poor performers more accountable. This is principally accomplished by building a functioning education management information system (EMIS) and instituting standardized assessment of student learning outcomes. The bottom-up strategy is to create direct accountability pressures on schools from local stakeholders by drawing parents and communities into the oversight and management of schools.

An EMIS does not have to be sophisticated or expensive; it can start modestly. The key is the timely collection of school-level data and the development of appropriate comparison groups for schools and districts, based on student socioeconomic factors. If performance on enrollment measures such as the primary completion rate, dropout, and repetition rates is compared across schools with similar student populations, it is fair to hold poorly performing schools accountable and to expect them to develop improvement plans. All EMIS data should be gender-disaggregated.

Student learning is the most important outcome that education systems need to track. It is not simple to put in place a standardized system of student assessment, but it is a myth that such systems need to be extensive, elaborate, or prohibitively costly. Countries can start with small, sample-based assessments in two key learning areas, math and literacy, administered for only one or two grade levels and repeated only every two or three years, and can build up from there over time and as resources permit. Many countries have found that only after student learning began to be measured in a standardized way across the education system, with results on comparative performance fed back to schools, have schools and teachers truly focused on student learning outcomes and how to improve them.

Institutional strengthening

The institutional capacity for sound planning, budgeting, staffing, and performance management is at the core of a quality education system. Such capacity is essential for good policymaking and for eliminating corruption. For many countries, developing this institutional capacity will require restaffing the ministry of education with a smaller number of more technically trained and results-oriented staff, and reviewing the role, selection criteria, and preparation and development of school leaders. Research shows that school leaders can have a crucial impact on school performance: the payoffs for schools are particularly high when school heads maintain a strong focus on teaching and learning. The role of school inspectors should also be reviewed. Increasingly, school systems like the one in the state of Ceará in Brazil are shifting district offices from an inspection orientation to school support, staffing them with math and literacy specialist teachers and providing libraries and other resources.

Decentralization and school-based management. While there is little research evidence that education decentralization to lower levels of government (states, municipalities) or regional administrative branches is an effective strategy per se for improving education system performance, research does

suggest that decentralization to the school level can be important. Where schools remain dependent on distant central or regional offices for resources and decisions and feel no direct accountability for their own results, teacher absenteeism is often endemic, schools cannot undertake simple repairs, and they suffer long waits for basic inputs such as chalk or paper, all of which impair school quality.

To address these issues, countries such as El Salvador, Nicaragua, India, and many OECD countries have found that granting more autonomy to schools can tap latent institutional capacity and generate stronger incentives for school improvement. When offered the opportunity, school personnel, parents, and local community members will usually contribute actively to school affairs. Greater voice in school decisions from these stakeholders can make schools more responsive to local students' needs. If operating budgets are decentralized to the school level, resources may be used more efficiently. And if parents and community members are empowered through formal participation in school-level councils to oversee school performance, they can generate direct accountability pressures on school and district personnel. Researchers in Nicaragua have confirmed that "autonomous" schools in which parents have a majority voice on the school-level council have lower teacher absenteeism than traditional schools—an important contribution to school quality (King and Ozler 2000).

Stimulating demand and relieving household constraints

The third broad constraint to universal primary completion in low-income countries comprises the demand-side issues that cause a large number of students to drop out from or never enroll in school, even where places are available. Worldwide, two-thirds of the children out of school are girls; the rest are usually boys from the lowest income groups, orphans (increasingly from AIDS), and disabled students. For these children, the dominant constraints are parental and community attitudes that undervalue education, especially for girls, and household poverty that makes school attendance unaffordable. Special strategies for addressing these household factors—for example, public awareness campaigns that highlight the need for all children, including girls and children with disabilities, to participate in school—are essential. Schools may also need to take other steps to accommodate the needs and values of their communities in order to reduce student dropout, such as adapting the school calendar to the agricultural production calendar.

Promote the education of girls

In close to 40 low-income countries, basic education enrollment and completion rates for girls are sharply lower than for boys. There is no single strategy for getting more girls into school, but different combinations of the following approaches have shown results in countries ranging from China and India to Bolivia and Malawi.

Reducing the direct and opportunity costs of schooling for girls. Research shows that the direct costs of schooling pose more of a barrier for girls than for boys. Targeted interventions to reduce or eliminate direct costs, such as abolishing school fees and providing free textbooks and uniforms, have a demonstrated positive impact on parents' decisions to send daughters to schools and keep them there. Indirect or opportunity costs also importantly affect girls' educational opportunities; to offset these, countries such as Bangladesh, India, China, Pakistan, and Guatemala have introduced special scholarship and monthly stipend programs for girls. These programs can be costly but have shown a strong positive impact on girls' enrollment and have an economic justification in the social returns to girls' education.

Other options for reducing opportunity costs include allowing girls more flexible school hours to enable them to perform their household and agricultural work; attaching childcare facilities to schools so that girls do not have to stay home to care for younger siblings; putting maize mills in schoolyards; and introducing new technologies such as small kerosene stoves to reduce the time girls must spend gathering firewood and cooking.

Siting schools closer to communities and adding latrines for girls. A reduced distance to school tends to have a greater impact on enrollments of girls than of boys, as parents are often more reluctant to let their daughters walk long distances to school. The provision of separate latrines for girls also has significant impact on the attendance of girls—particularly of older girls. At the secondary level, there is some

evidence in countries such as Pakistan and Yemen that separate schools for girls can promote girls' enrollment. The cost-effectiveness of these relatively expensive approaches must be weighed in relation to other alternatives, however. At the basic education level in most countries, same-sex schools are not necessary to get more girls into school.

Hiring more female teachers and administrators. The absence of female teachers can be a barrier to girls' enrollment, as parents in some cultures feel uncomfortable allowing their daughters, especially adolescents, to be taught by male teachers. Hiring more female teachers, particularly teachers familiar with the local community, has been an important strategy for encouraging parents to send daughters to school in Pakistan and Nepal, and female teachers in all countries appear to serve as powerful role models for girls, positively affecting their attendance and persistence rates. It is important, however, that new female teachers, especially in rural areas, not be marginalized when it comes to in-service training. Special programs that aim to improve the teaching skills of rural and female teachers have been shown to have considerable positive impact on teachers' morale, attendance, and classroom practices.

The implementation of girls' education programs in countries such as Yemen, India, Bangladesh, and Pakistan has also demonstrated that female leadership helps to promote female education. In many cultures, it is difficult for males to exercise leadership on these issues or even to acknowledge the constraints preventing more girls from attending school. Female teachers, especially in rural areas, tend to be more comfortable dealing with female education managers. Female education leaders furthermore can also serve as role models for girls, parents, and teachers in rural communities.

Involving mothers in school management and supervision. In addition to the general benefits of parent involvement in school management and supervision, participatory school councils and village education committees that make a specific effort to involve mothers have been shown to have a positive impact on girls enrollments. "Mother education committees" established under India's DPEP and Pakistan's Balochistan Primary Education Program have brought more girls into school and have reduced their early dropout. Literacy and empowerment programs for women (see section 3.2) can also have a significant effect on the school enrollment and retention rates of their daughters.

Multifaceted strategies. While all of the above approaches have demonstrated results, the best progress has been in countries that have used social assessments, surveys, or other studies to identify the most important constraints and issues facing them and then to tailor a strategy package to their context. Examples include India, Bangladesh, Malawi, Uganda, and Bolivia. The state of Uttar Pradesh in India raised the basic education (gross) enrollment rate for girls from 50 percent to 98 percent in an eight-year period, and lowered their dropout rate from 60 percent to 31 percent. Country experience confirms strongly that addressing multiple concerns related to girls' education simultaneously in a coherent strategy can produce significant gains in relatively few years.

Ensure school affordability

Fees for school tuition, uniforms, textbooks, and stationery are a significant burden for poor families in many countries. Countries that have eliminated tuition fees, such as Malawi and Uganda, have registered large increases in basic education enrollments. Even where tuition is not charged, however, the costs of other items can put schooling out of reach for some families, and particularly for the rapidly growing number of orphans. Beyond eliminating tuition fees, it may be essential also to provide free books, materials, and uniforms for poor households to guarantee that these children stay in school.

Even where direct costs are not significant, the indirect costs of schooling for poor families—mainly forgone earnings and the value of contributions to household production—are large. The tragedy of orphans in many countries is that with no other income earners in the family, older siblings must drop out of school to support younger ones, perpetuating a cycle of poverty. To allow these children to remain in school, school systems may need to distribute targeted subsistence stipends, similar to Brazil's *bolsa escola*. Though essentially an income support program, the distribution of such family assistance through the school system, conditional on continued school attendance, may be the most effective way to promote both social assistance and educational goals.

Temporary use of such programs can also protect schooling participation during recession or financial crisis. Indonesia's targeted school grant program in the aftermath of the 1998 financial crisis succeeded in preventing a projected decline in school attendance. The fiscal costs of these programs can be relatively high, but the equity impacts, if they are carefully targeted, are substantial.

Adapt schools to student and community needs

The failure of schools to adapt to the needs of local communities can lower demand for education. Measures that schools can take to increase their attractiveness to the community and to encourage the support of parents include exercising flexibility in matching the school calendar to the local agricultural cycle; altering the daily timetable to enable children, especially girls, to perform household chores early or late in the day; ensuring that school premises are clean and safe; introducing into the curriculum subjects of particular value and relevance to the community; using local languages for instruction; and reaching out to the community with innovative services such as ECD programs, adult basic education classes at night, youth programs, or a community library.

Disaggregated analysis of enrollment data will help school systems to identify those communities where demand constraints appear most significant, and social assessments can be helpful in analyzing the factors underlying these constraints. The most effective way to ensure that schools respond to the needs and values of local stakeholders, however, may be the actions discussed in the section above headed "Improving quality" to increase the voice of the local community in school governance.

Postbasic and tertiary education

Secondary and higher education can provide people with the skills they need to secure formal employment and to work their way out of poverty. They provide nations with the critical high-level skills and knowledge needed for development by training professionals such as teachers, health workers, scientists and technicians, public and private sector managers, and researchers. All countries need at least a minimal science and technology capacity if they are to be able to use global knowledge and technology for their development. Recent floods in Mozambique, for example, were forecast by British meteorologists months before they actually occurred, but Mozambique lacked the local capacity to translate this information into national disaster prevention measures. Only one in five children attends secondary school in low-income countries and only one in 50 attends tertiary education. The challenge for many governments is promoting a balanced development of the entire education system while pursuing the rapid achievement of primary education for all, within the context of limited financial and human resources.

The relatively high private rates of return to secondary and higher education mean that there are more public policy alternatives to support the development of these levels than there are for basic education. The role of private (that is, household) financing is particularly important in postbasic education because of the high private returns and because participation at these levels is dominated by the nonpoor. At the tertiary level, the opportunity exists to use a variety of different policies, such as cost-sharing combined with income-contingent student loans, alternative governance structures in public education, and direct measures to stimulate private education supply. In Chile and Korea, the mobilization of substantial private financing at the secondary and tertiary levels played a crucial role in allowing the simultaneous achievement of universal basic education and the development of strong and diversified secondary and tertiary institutions. An important lesson from country experience, however, is that revenues mobilized through cost recovery must stay with the institutions that collect them and must be translated into visible improvements in education quality; if not, it can become impossible to attract continued student contributions.

In general, it is advisable to review the policy environment for private education to ensure that:

- the regulatory environment encourages high-quality private providers to expand the total capacity of the education sector;
- cost-sharing arrangements at the upper secondary and tertiary levels are equitable, given the expected private and social returns;

- ⊃ education institutions have appropriate degrees of financial, managerial, and academic autonomy; and
- ⊃ there are sufficient safeguards, such as scholarships, income-contingent student loans, work-study programs, and fee exemptions, to enable poor students to enroll in postbasic education.

At the upper secondary level, an important question that governments must answer is how much school-based vocational education and training (VET) to provide. A key consideration in this regard is the high cost of vocational education compared with general education. Establishing appropriate objectives is critical. VET can be effective when it meets clearly observed, current labor market demands, as in Chile, where the government has used a mix of financial incentives and decentralized provision (enterprise-based as well as school-based programs) to boost the development of skilled technicians for agriculture and industry. But many other countries have found that expanding VET is an ineffective way of trying to divert or dampen the demand for higher education, unless VET programs are of very high quality and effectively respond to demands from the labor market.

Access to secondary and tertiary education can be an important determinant of basic education completion. This is especially true for poor families, for whom resource constraints force choices to be made between education and other valuable investments. Even where the social rate of return to primary education is high, significant private benefits to the family may accrue only where there are good prospects for children to continue beyond basic education. In many countries, entry into the formal labor market depends on an upper secondary degree or higher. Investigators should establish if the inavailability of upper secondary education is influencing dropout in the higher grades of basic education. A simple answer may be found by looking at the correlation between dropout in basic education (available in EMIS statistics) and the availability of a nearby upper secondary school (from school mapping). The conclusions from such statistical analysis can be checked with parent interviews. If an adequate supply of secondary and tertiary education places is available, then the analysis should focus on who fills the places. If enrollment patterns clearly discriminate against children from poor families, there is a need for policies, such as scholarships, fee exemptions, and boarding opportunities, to help poor students enroll.

19.4.2 Eliminating adult illiteracy

Achieving and sustaining universal primary education completion is crucial for the progressive eradication of adult illiteracy, but nonformal education programs aimed at adults and out-of-school youths can be an important complement to the formal education system in countries where illiteracy is high. Effective adult basic education programs can contribute directly and powerfully to poverty reduction. By definition, they target the poor, especially women and girls, delivering crucial basic literacy and numeracy skills that can help disadvantaged individuals improve their livelihoods and quality of life. Adult basic education also has strong complementarities with primary education, not only by giving a second chance to those who have been missed by primary schooling, but also because parents who take part in adult basic education become more effectively supportive of primary education for their children. Efforts to meet the demand for adult basic education in communities where many parents are illiterate have been shown also to improve the conditions for community involvement in formal schools.

Most adult basic education programs are operated in some form of collaboration between the government and civil society, in the form of nongovernment (NGO) and community-based (CBO) organizations. The international track record shows that most programs succeed in retaining a clear majority of those who initially enroll, and bring most learners up to a modest level of literacy. Program types, sites, and operators vary widely, reflecting the diversity of needs of target populations; evaluation evidence confirms that the most effective programs are those that closely match the needs of their audience. For example, programs aimed at women's cooperatives often combine basic literacy and numeracy training with skills, such as basic household or business accounting, or with income-generating activities such as textile weaving or purchasing and running a grain mill. This diversity also points to the importance of consistent evaluation of program costs and effectiveness.

Compared to full-time schooling for children, adult basic education entails much less time each week from its students. The finance required for adult programs is overwhelmingly for recurrent

costs—the training and remuneration of instructors and facilitators (volunteer teachers can bring unit costs down but all-volunteer teaching forces are usually not sustainable over the long term or sufficient if programs go to scale) and learning materials. There is rarely a need to construct dedicated facilities. Costs per learner range from roughly US\$5 to US\$20 per year, depending on initial development costs and program scale, but they are invariably lower than the per-student costs of formal basic education.

Cost-effective adult basic education has the following elements:

- ⊃ A framework of lifelong learning that specifically links adult/youth basic education with the main system of accreditation and that provides pathways for graduates to pursue further education.
- ⊃ Voluntary participation in adult basic education.
- ⊃ Free of charge. If the education and training provided is linked to income-generating activities, however, some cost recovery may be explored.
- ⊃ Approaches adapted to respond to needs and use of local languages. A twin-track approach can (1) build literacy into existing interests such as agricultural and health extension, cooperative groups, or microenterprises, and (2) offer focused literacy and numeracy training to those who are interested mainly in these skills. Use the opportunities that training affords to disseminate important information on health issues, for example, and always link literacy and numeracy skills concretely to life, work, community and social issues, and development programs.
- ⊃ Partnerships between government and civil society. Identify and capitalize on existing institutions and sources of social energy to maximize cooperation between government (local, central, and all departments that deal with poorer sections of the population), voluntary organizations (local, national, and international), community organizations, and the private sector.
- ⊃ Where appropriate, the prevention of HIV and caring for AIDS victims as part of the curriculum.
- ⊃ Facilitators are locally recruited and have adequate technical, moral, and material support, such as assistance from supervisors and professional networks, and that they are sufficiently accountable to their students to sustain their programs. Short-term contracts are usually appropriate.
- ⊃ Reinforce the connections between the education of children, especially those from very poor families, and the education of parents.

The preparation of a PRSP offers an important opportunity for countries to reconsider the relationship between the formal schooling system and nonformal education. A clear policy framework can help governmental and nongovernmental providers of adult basic education identify target populations, ensure that curricula incorporate key health and other messages, efficiently deploy teachers and facilitators, make use of existing buildings, and coordinate approaches to communities. The government also has an essential role to play in establishing equivalency and certification standards for adult learners, collecting aggregate data on adult basic education enrollments and completion rates, and improving the assessment of adult literacy rates.

19.4.3 Other key policies

Macroeconomic and fiscal policies

Macroeconomic and fiscal policies determine the rate and volatility of a country's economic growth and the labor intensity of the activities that drive that growth; they are thus crucial factors in poverty reduction strategies. As noted above, policies also have a profound impact on the education system. First, the overall level of spending on education is largely determined by public expenditure decisions. Second, and perhaps more important, the rate and pattern of economic growth govern the returns to education, which affect individual schooling decisions.

Many countries suffer from mismatches between the economy and the education system. If the education system expands ahead of the economy, the phenomenon of unemployed or underemployed university graduates can arise, reflecting a huge cost to society from inefficient investments in education.

If the education system fails to keep pace with the economy, acute skills shortages can develop in key sectors. If the alignment between what is taught in schools and the skills demanded by the economy is poor, students may drop out of school rather than waste time in a low-return pursuit.

Research points to the importance of the following:

- ⊃ Macroeconomic stability and labor-intensive growth strategies to maximize the returns to education.
- ⊃ Broad-based basic education for all, rather than specialized or vocational education, to support faster diffusion of information and innovation in the economy, productivity gains, and competitiveness.
- ⊃ Creation of a framework for lifelong learning through an accreditation system for a wide range of formal education and nonformal training modalities, including enterprise-based training programs, distance learning programs, and free-standing institutes. The goal should be a flexible education system that permits individuals to move between formal and nonformal training institutions over the course of a career or in response to changing labor market conditions.
- ⊃ Creation of a wide variety of communication channels and collaborative arrangements between the education system and private industry, to permit the continuous realignment of education to serve the evolving demand for skills and knowledge.

Early child development (ECD) programs

Early child development interventions are a powerful lever for accelerating universal basic education. Uneven readiness to learn and late enrollment are important correlates of school dropout, grade repetition, and low student learning, especially among low-income children. Children that are born poor and that are deprived of basic stimulation and nutrition during their first years of life start out on a trajectory that is difficult to alter later. Compelling research in a wide range of countries has demonstrated that early interventions to protect children's health, nutrition, and emotional and intellectual development can help poor children enter school on a footing that is closer to that of their more affluent peers.

International experience shows that ECD interventions and daycare programs can produce a range of benefits, including improved nutrition and health, higher intelligence scores, higher school enrollment and attainment, less grade repetition, fewer dropouts, and increased female participation in the labor force (by mothers).

There is also mounting evidence that low-cost nonformal interventions, particularly those targeted to disadvantaged children, can yield measurable benefits. Nonformal programs, often operated out of a home in the community by a mother who has been provided with training and resources, can be cost-effective alternatives to formal preschool programs, especially if the program is designed to integrate health, nutrition, and early childhood development interventions. Nonformal early childhood programs are flexible in format and much less expensive to administer than formal kindergartens. By improving mothers' parenting skills, they can benefit younger siblings as well as the children targeted. Low-cost, nonformal ECD programs typically extend access to early childhood care and education programs to low-income children who would otherwise not receive such attention and for whom, research shows, the benefits are greatest.

Health and nutrition

A simple package of low-cost health and nutrition interventions aimed at school-aged children is one of the single "best buys" a country can make from the standpoint of the cost-effective use of health dollars (World Bank 1993). For as little as US\$0.30 per child per year, school health programs can dramatically reduce the number of days of schooling that children miss due to illness, and can ensure that children are sufficiently nourished to be able to focus on learning. Their cost-effectiveness in part comes from using the school network to screen children and distribute interventions. Where ministries of education and health cooperate on teacher training and on the design and delivery of these programs, the benefits for

both sectors are tremendous. As enrollment rates rise, school health programs become increasingly important, as some of the children who most need health and nutritional support—girls, the rural poor, children with disabilities—for the first time have access to schools.

A core group of simple and familiar interventions has been developed by WHO, UNICEF, UNESCO, and the World Bank. Known as the FRESH (Focusing Resources on Effective School Health) approach, these interventions are designed so that when supported by effective intersectoral and community partnerships, they can be used in even the poorest schools, in hard-to-reach rural areas as well as accessible urban areas. In brief, these interventions are:

- **Health-related school policies.** Establish a safe, secure, and psychologically supportive environment in schools; make sure that schools do not exclude pregnant girls or children with disabilities; encourage healthy, tobacco-free lifestyles; and provide counseling and support to children of families affected by HIV/AIDS or other catastrophic health issues.
- **Provision of safe water and sanitation.** Provide a healthy learning environment, reinforce hygienic behaviors, and ensure privacy, to promote the participation of adolescent girls in education.
- **Skills-based approach to health, hygiene, and nutrition education.** Focus upon the development of the knowledge, attitudes, values, and life skills needed to establish lifelong healthy practices and to reduce the vulnerability of children and teachers to HIV/AIDS.
- **School-based health and nutrition services.** Provide simple services to address problems that are prevalent and recognized as important within the community, including vision screening, micro-nutrient supplementation, and deworming.

Central to the cost-effective delivery of these school-level interventions are intersectoral partnerships, especially between the health service and the basic education system; partnerships with the community, especially parent–teacher associations (PTAs); and monitoring and evaluation, to ensure that children are of good health and that their school performance improves. Much more can be done, but if schools implement these four priority interventions they can quickly produce significant benefits and create a foundation for future expansion.

19.5 Identifying Feasible Actions and Setting Targets

The policy challenges facing low-income countries in education are numerous, and by and large are long-term in nature. These countries also must contend with major constraints in terms of resources and capacity. Yet they are under considerable pressure to show fast and measurable progress. This final section briefly considers the issues involved in developing feasible reform programs, in gauging the pace at which progress is possible, and in setting achievable targets. Section 19.5.1 focuses on setting priorities; section 19.5.2 considers the timeframe and institutional capacity requirements for different policies; section 19.5.3 looks at political issues; and section 19.5.4 provides guidance on monitoring and evaluation.

19.5.1 Identifying priority reforms

Once the priority issues affecting education outcomes for the poor have been established and the policies that address these issues identified, a reform agenda can be put together. This involves three important steps:

- analyzing costs, tradeoffs, and complementarities among policies;
- analyzing the time and institutional capacity required for policies to be implemented and to produce results; and
- analyzing the political payoffs and stakes that each policy entails.

There are no blueprints for these steps: all are heavily dependent on the country context. The following sections summarize some of the key issues to consider.

Analyzing costs and tradeoffs. The effectiveness of each of the policies listed in table 19.4 is supported by research or cross-country experience. The research evidence on their cost-effectiveness, however, is more

limited. The five best-researched exceptions, which have demonstrated a positive impact on student learning and attainment significantly exceeding costs in a wide range of country settings, are: (1) provision of books and learning materials (costing about US\$1.00 per student per year); (2) school health and nutrition programs (US\$0.30 per student per year); (3) double-shift schools; (4) multigrade schooling in rural areas; and (5) community preschool services for low-income children. (technical note P.4 reviews recent research on education cost-effectiveness in developing countries.)

Most of the policy options discussed in this chapter are essentially lower-cost approaches to things that school systems are already doing. Examples include the use of community-based construction instead of formal contracting, at up to 50 percent lower unit costs; simple teacher networks instead of costly residential in-service training programs; local teaching materials instead of imported books; and double-shift instead of single-shift schooling, where feasible. Other policies, such as the use of mother-tongue instruction or the introduction of stipends for girls, require increased expenditure but can be expected to generate savings that offset these costs by reducing student repetition and improving student learning.³ A third subset of the policies recommended are “close-to-no-cost” strategies for improving school effectiveness that are often overlooked, including assigning the best teachers to the first grade, enforcing the official school calendar, and distributing books and materials by the start of the school year. These are summarized in box 19.3.

Where there is a need to expand access to education, overall education spending will necessarily increase. One recent study estimated that achieving universal primary enrollment by the year 2015 in six HIPC countries in Sub-Saharan Africa would require, at a minimum, a 30 to 65 percent increase in annual spending on education between now and 2015 (Mingat 2000). In the absence of policy reforms to lower the unit costs of delivering schooling in these countries, expenditure would have to double. The policy recommendations in this chapter therefore focus on strategies for lowering the unit costs of service delivery while maintaining or increasing quality. This can be done: India’s DPEP and Bangladesh’s BRAC (Bangladesh Rural Advancement Committee) programs over the past decade have both expanded education access (targeted to girls and the poor) and raised quality, by developing lower-cost models of schooling focused on effective teaching and learning.

Education policymakers may, however, perceive a tradeoff between the expansion of nonformal adult basic education programs for adults and out-of-school youths and the pursuit of universal basic education for children. From an economic standpoint, it has often been argued that the shorter lifespan available to adults during which to reap the benefits of education makes adult basic education a lower-return investment than schooling for children. Ministries of education may also question any diversion of resources from basic education to adult programs, especially given the informality of many of these programs and the fairly wide variance in program unit costs and effectiveness.

The evidence of significant nonincome benefits and externalities (better health, nutrition, and educational attainment among children of literate adults) from investments in adult education, plus the potential for relatively rapid impact on family income generation, nonetheless supports the conclusion that in the context of a poverty reduction strategy, adult and youth literacy programs are a justifiable priority for countries with high adult illiteracy. Ministries of education can minimize tradeoffs by working with other providers, especially NGOs or other ministries, to build literacy and numeracy

Box 19.3. Low- or No-Cost Interventions That Can Improve School Quality

- **Enforce the official length of school year and school week**
- **Assign the best teachers to first grade**
- **Establish a policy not to switch classroom teachers during the school year**
- **Extend the length of the school year (with no salary increment)**
- **Encourage parents to help children with homework**
- **Ensure that homework is graded, commented upon, and discussed by teachers**
- **Encourage teachers to show students the relationships between past and present learning**
- **Encourage students to monitor their own progress against learning goals**
- **Combine successive grades into “cycles,” with no repetition within each cycle**

training into skills training programs or other adult outreach programs developed and delivered in other sectors and often financed in the context of other development projects.

Analyzing complementarities. For many countries, the incremental financial costs of introducing many of the policy reforms discussed here may be less binding than the institutional constraints and political costs. The goal therefore should be to develop a minimum policy package that is sufficiently comprehensive to address all key issues. The challenge for policymakers is to manage the tension between limited institutional capacity and resources and the fact that many issues are interrelated, and failure to align the key parts of a reform package can undermine its impact. For example, a policy decision to eliminate school fees may be easily made and quickly announced, but unless the school system is prepared with adequate teachers and learning materials to absorb the influx of enrollments (after the elimination of school fees in Uganda in 1997, enrollments doubled in a single year), the benefits will be questionable. Similarly, an investment modernizing the curriculum can be completely undermined if teachers are not retrained to teach it, and unless books, materials, and student learning assessments are revised to reflect it. The measures necessary to ensure such alignment, unfortunately, can greatly increase the scope, costs, implementation complexity, and timeframe of a reform.

There is no simple answer to this issue. Astute judgment is necessary to focus a policy agenda on the one or two key priorities most relevant in a particular country context and to ensure that all complementary components and actions are aligned. Strategies for managing policy alignment are discussed in the next section.

19.5.2 Analyzing the timeframe and implementation capacity

The relatively short-term perspective of HIPC assistance requires countries to identify policy actions that can be calibrated in months rather than in years. Yet virtually all key education outcomes require years to register measurable change. An essential part of PRSP preparation, to enable the development of reform strategies and especially the setting of feasible targets, is the analysis and understanding of the timeframe for the implementation of major policies and the rate at which progress can be expected.

Analyzing the timeframe for policies to work. In general, changes in the regulatory framework (for example, permitting community recruitment of a new teacher cadre, adopting community-based school construction, mandating local language instruction, extending the school year, or eliminating barriers to private schooling), funding arrangements (eliminating school fees, moving to a capitation-based school budgeting system), or governance rules (mandating school-level councils with parent involvement)—so-called structural reforms—can be quickly enacted by legislatures or promulgated by ministries of education. The decisionmaking process for these kinds of policies can be relatively simple, although not always—establishment of a new teacher cadre may be opposed by teacher unions, for example. However, it is important to realize that even for these reforms full implementation can take much longer, whether because of innate complexities (such as the hiring or retraining of sufficient teachers to teach in local languages in all regions of the country, setting up school-level bank accounts, and training parents for effective participation in school-based management) or because bureaucrats or other stakeholders opposed to the changes may have the power to undermine them (for example, district offices failing to transfer budgetary resources to schools).

A larger number of educational policies, particularly those related to quality, inherently take longer to implement, because they essentially seek to develop new skills and behaviors among key actors, above all teachers. The single most important classroom-focused intervention—eliminating traditional “frontal” teaching in favor of more student-centered and interactive approaches—calls for deep changes in teacher development, incentives, and support networks, with important emphasis on classroom follow-up and reinforcement. Alignment is crucial, as school directors and district supervisors must understand and reward the new practices, and new learning materials and sometimes even new classroom furniture are needed. For this single reform to be implemented meaningfully, a multifaceted intervention over a period of several years is required. For a perceptible impact on student learning, even more time is needed. The same could be said for most quality reforms.

A useful rule of thumb is that school systems should begin by reviewing the list of “no- or low-cost” policies for improving school quality (see box 19.3). If relevant, these actions generally can be quickly adopted and implemented. A second step is to see which structural reforms of regulations, funding, or governance arrangements are relevant, given the diagnosis of priority issues. In general, it should be possible to implement a high-priority subset of two or three reforms of this nature in an 18-month to two-year period.

Virtually all countries will seek to initiate longer-term quality reforms at the same time. Given the inherent complexity of these reforms (that is, the need to align a wide range of factors), the most practical strategies will focus on establishing rudimentary, but adequate, approaches first and then building these up over time. For example, India’s first steps toward the goal of more effective, student-focused teaching practice were to mandate local language instruction, eliminate the use of traditional textbooks, give small grants to teachers for the development of local teaching materials, redesign teacher development programs, and establish teacher networks and resource centers. Over time, all teachers have received significant retraining; the initially modest centers are becoming stronger, with more outreach to schools; richer sets of learning materials are being developed and shared; better student assessment is being introduced; and school directors are being developed as a professional cadre.

Analyzing capacity requirements. Clear goals are essential. Thereafter, instruments for assessing organizational capacity can be helpful in thinking through strategies for phasing in new functions, given the available capacity, and in developing capacity over time.⁴ Phasing in changes can give countries more time to take stock, measure progress, perceive what is working and what is not, make midcourse adjustments, and plan the next phase.

Setting targets. There is a need for explicit targets for improvement in key education outcomes that are both realistic and achievable but also stretch the system toward better performance as rapidly as possible (see chapter 4, “Development Targets and Costs”). Experience shows that political commitment and clear education goals can translate into rapid progress. For example, in Burkina Faso, Guinea, and Niger in the late 1980s, only about 30 percent of all children were enrolled in primary school. Over the next decade, Burkina Faso and Guinea achieved a 50 percent increase in enrollments (57 percent in Guinea), while Niger registered zero increase. From an even lower base (23 percent of children enrolled), Mali raised enrollments 109 percent over the same period. Quantum increases in the trend rate of progress are possible.

Gross enrollments in primary education in virtually all low-income countries are inflated by high repetition, however. Attaining the goal of universal primary completion requires improvements in schooling quality and reductions in student repetition and dropout. In short, school systems cannot expect to achieve universal primary completion without significant system transformation, in terms of quality and efficiency.

The importance of system transformation and higher efficiency in a poverty reduction context cannot be overstated. In Madagascar, for example, the primary gross enrollment ratio is over 100 percent, but only 27 percent of students graduate with no repetition. The education system must spend three times more to produce a primary graduate than it would in the absence of repetition. Without measures to improve system efficiency, achieving universal primary completion in countries such as Madagascar will require substantial school construction, additional teachers, and other resources. Yet the clear implication of student flow analysis is that such expansion would be a serious waste of resources, since the education system already possesses enough physical capacity and teachers to meet the needs of universal primary completion if system efficiency could be improved.

Countries following the diagnostic process set out in this chapter will be able to evaluate in some detail the internal efficiency of their education system. This will increase the likelihood that specific country targets for key education outcomes are both appropriate and achievable.

19.5.3 Analyzing the political feasibility of reforms

Change in education can be highly contentious, especially when key stakeholders perceive they will lose in the process (that is, will be cost bearers of reform). Examples of this include attempts by ministries of education to introduce changes in teacher contracting that would affect job stability or wages, or changes in education governance that would cause bureaucrats at the central level to lose decisionmaking authority to lower tiers of government or to schools.

Some countries have nonetheless achieved significant transformation of their education systems over the past five to 10 years: Brazil, India, Uruguay, and Uganda stand out among developing countries, along with a number of OECD countries. It is possible to manage the political costs and institutional forces that otherwise would block education reform.⁵

Specific strategies depend heavily on the country context: not only on the current performance of the education system and the nature of the issues but also, importantly, on such factors as the degree to which key actors, such as teachers, are politically organized; the relationship of teacher unions with the party in power; the degree to which reform is proceeding in other sectors; and the political strength, commitment, and skills of the minister of education.

Across a number of reasonably successful education reform cases, strategic choices and characteristics on the part of the ministry of education have proven to be important. These range from the ability to articulate a coherent vision for long-term development of the sector to the ability to deliver tangible short-term benefits at the school level, and they are elaborated below.

Vision and public support. Developing a coherent long-term vision for improving the education sector that addresses key bottlenecks and is technically feasible is the first challenge. Successful reformers invariably also stress the importance of effectively communicating that vision to mass audiences. Appeals to civil society can be used to influence bureaucratic and political leaders who are not firmly committed to reform, for example, and can turn parents and communities interested in the reform’s benefits into a force for monitoring its implementation. Making sure that the communities who will benefit know what to expect can transform a largely unmobilized political force into one that counts, particularly in open and contested political systems. Successful ministers of education make extensive use of mass media and communications techniques, devoting serious attention to shaping the public debate over reforms, framing abstract technical concepts such as accountability in vivid human examples, linking education strongly to national economic growth and competitiveness goals, and invoking powerful connections to national symbols and values.

Delivering quick wins. It takes years before serious progress in the outcomes that are the ultimate objective of education reform, such as primary completion rates and student learning, can be documented. Successful reformers realize that it is impossible to sustain political support for change over periods this long unless beneficiaries and stakeholders perceive some gains. Reform processes must therefore deliver some “quick wins” in the form of visible changes at the school level that benefit parents, communities, and teachers. For parents and students, tangible benefits can include such things as the elimination of school fees, on-time delivery and free distribution of books and materials, the establishment of community schools nearby, and the involvement of parents in school councils. For teachers, the provision of small grants for the development of local materials, quality teaching manuals and other resources, and the establishment of teacher networks and resource centers are among the short-term benefits the system can offer.

Managing opposition. A major challenge of education reform is that it inevitably involves distributing costs as well as benefits. The largest cost bearers are usually teachers, who typically face increased performance pressures, such as new teaching methods, larger classes, enforcement of the school calendar, more accountability to parents and community members, competition from a new teacher cadre, and sometimes even downward adjustment of benefits. Other cost bearers are typically central or district bureaucrats who may lose control over resources such as school budgets and construction contracting or lose power (for example, the ability to influence student access to desired schools, or plum teacher assignments) and the corresponding corruption opportunities. Political mapping tools

can be helpful in evaluating potential sources of reform support and opposition (see Crouch and DeStefano 1997).

One striking finding is that major cases of education reform exhibit two distinct strategies for managing reform opponents:

- ⊃ co-opting key cost bearers by drawing them into the definition of reform goals and implementation through participatory approaches; and
- ⊃ isolating or working around cost bearers or opposition groups such as teachers' unions by building alliances with other stakeholders, such as parents and communities, school principals, and the business community.

The most viable option will depend on the particular political circumstances, such as the strength of the teachers' union compared to that of other interest groups, but it is worth noting that participatory processes work best when they do not involve fundamental differences in values. For example, trying to gain the explicit support of the teachers' union on core issues such as decentralizing teacher hiring and firing to the school/community level is likely to be impossible. Another basic lesson is that participatory approaches work best when they draw groups with relevant expertise into the consideration of technical design or implementation issues. Drawing communities into the identification of changes that would adapt the curriculum better to local issues and priorities is likely to be productive; consulting communities on the design of a national student assessment system would likely not be.

If neither co-opting nor isolating reform opponents is politically viable, reformers must explore bargaining options. They must either change the proposed policy so as to make it more palatable to opposition groups or, very commonly, try to package different policies in such a way that opposition groups achieve some visible gains that are important to them while accepting some changes or costs that are important to move the reforms forward.

Demonstrating and communicating results. A final common feature of successful education reform efforts is that they increase the transparency of the education system, making parents and the country at large more aware of how the system is performing. This is partly because reform processes often start with highly visible public debates and data about the system's poor performance, intended to create a sense of crisis and thus build pressure for change. But it is also because successful reform programs often involve explicit efforts to improve system performance data (for example, EMIS, student assessment, and teacher attendance records) and communicate these results more openly to parents or the public, in order to tighten schools' accountability.

Effective reformers use these results to communicate progress, both within the administration and to the public at large, to nurture support for the reform process. Initiatives such as weekly radio broadcasts; high-publicity awards to outstanding teachers, schools, or school districts; and visible new partnerships between businesses and technical schools can have high payoffs in building awareness of reform progress and strengthening support. More, and more open, feedback to education system actors also helps to stimulate better performance. In short, successful education reform efforts can transform a sector widely perceived as an nonperforming fiscal drain into a sector with high and positive political visibility.

19.5.4 Monitoring and evaluation

Monitoring reform processes and outcomes and evaluating impact are crucial, both for effective management of reform implementation and for building sustained political support, as follows:

- ⊃ *Monitoring processes* involves tracking progress in implementing the program as planned. Process monitoring is the early warning system that enables managers both to identify and to resolve the problems that inevitably will arise and to take advantage of unforeseen opportunities that can also develop during reform implementation.
- ⊃ *Monitoring outcomes* involves tracking progress against goals. Specifically, it aims at monitoring trends in outcomes over time and across groups and areas, collecting information to study the determinants of such outcomes, and providing feedback to policymakers on the effectiveness of different approaches.

- **Impact evaluation** assesses changes in the well-being of individuals that can be attributed to particular programs or policies. It is a decisionmaking tool for policymakers and makes it possible for programs to be accountable to the public. Impact evaluations can inform decisions on whether to expand, modify, or eliminate a particular policy or program and aid in prioritizing public actions.

(Chapter 3, “Monitoring and Evaluation” provides more definitions and examples of good design of monitoring and evaluation systems.)

Monitoring and evaluation have several benefits in terms of improved accountability, increased stakeholder ownership, and broad-based support of policies, programs, and projects. Monitoring results can help to modify policies, programs, and projects during implementation and can thereby improve the effectiveness of interventions.

A good example of attention to monitoring and evaluation in the context of a major education reform comes from India’s DPEP, which aims at achieving universal primary education. DPEP’s design was founded on a careful analysis of a wide range of earlier programs and an administrative structure that has explicitly tried to evolve as a learning organization, promoting experimentation, learning, and correction. As a result of monitoring and evaluation, new interventions have continuously been introduced, based on the emerging lessons of implementation experience and analysis of newly generated data. The learning-by-doing approach enabled by an effective monitoring and evaluation system has proven to be an important capacity-building strategy for DPEP (see box 19.4).

Key elements of good monitoring and evaluation practices include:

- **Participatory approaches.** If civil society, especially the poor, is involved in monitoring the implementation of public policies and programs, it will be better able to influence service providers and policymakers to improve service delivery. When consulted, local people are invariably willing and able to provide valuable information on the shortcomings of services and on the ways to improve them.
- **Inclusion of an impact evaluation strategy.** Outcome monitoring should be complemented with impact evaluations to help determine the extent to which improvements in outcomes are due to specific public actions. Impact evaluation must be built into the design of a policy intervention at the start, with the collection of clear baseline data and a framework established for monitoring outcomes and impact over time.
- **Improved budgetary management.** Monitoring of education outcomes should be complemented by a strengthening of the institutions and practices of expenditure management to enhance the transparency, accountability, and efficiency of public spending.
- **Dissemination of results.** Monitoring system results and the results of program and project evaluations should be widely disseminated to different groups in civil society, as well as to policymakers, program managers, program beneficiaries, the general public, the media, and academics.

Box 19.4. Improving Program Monitoring and Evaluation: India’s District Primary Education Program (DPEP)

Significant improvement in the quality of information available has been achieved by DPEP in just five years. Education statistics in participating DPEP districts are timely and accurate, and have become the accepted basis for policymaking and research. Problems such as declining intake trends in grade one in some DPEP districts, single-teacher schools, and schools with excessively high or low pupil–teacher ratios can now be quickly identified, analyzed, and acted upon in ways that before were not possible. The extent to which DPEP’s managerial culture of data-based analysis and “thinking through” problems has diffused across the elementary education system is one of the program’s most important achievements.

Source: R.S. Pandey, “Going to Scale with Education Reform: India’s District Primary Education Program, 1995–99,” Education Reform and Management Series I(4), July 2000.

Acronyms and Abbreviations

AIDS	acquired immune deficiency syndrome
BLC	basic learning competencies
BRAC	Bangladesh Rural Advancement Committee
CONAFE	Consejo Nacional de Fomento Educativo
CONFEMEN	Conférence des Ministres de l'Éducation des Pays Ayant le Français en Partage
CBO	community-based organization
DPEP	District Primary Education Program (India)
ECD	early child development
EdStats	Education Statistics Database (Education Department, World Bank)
EFA	Education for All
EMIS	Education Management Information System
ERM	education reform and management
FRESH	Focusing Resources on Effective School Health
HH	household head
HIPC	heavily indebted poor country
HIV	human immune-deficiency virus
IALL	International Adult Literacy and Lifeskills Survey
IALS	International Adult Literacy Survey
ICT	information and communication technologies
IEA	International Association for the Evaluation of Educational Achievement
LSMS	Living Standards Measurement Survey
MLA	Measuring Learning Achievement (Project)
OREALC	Oficina Regional de Educación de la UNESCO para América Latina y el Caribe
PASEC	Programme d'Analyse des Systèmes Éducatifs des Pays de la CONFEMEN
PIRLS	Progress in Reading Literacy Study
PISA	Program for International Student Assessment
PTA	parent–teacher association
SACMEQ	Southern Africa Consortium for Monitoring Educational Quality
TIMSS	Third International Mathematics and Science Study
VET	vocational education and training

Notes

1. Thirteen Latin American countries joined a 1999 assessment sponsored by UNESCO/Latin America, and African countries have participated in the PASEC, MLA, and SACMEC assessments of reading and math.

2. Information on public spending can be found in the government budget but it should be noted that government statistics will not always include flows of official development assistance, which are important in HIPCs. Comparative statistics are available in the UNESCO *Statistical Yearbook*, the World Bank's *World Development Indicators*, and public expenditure reviews for selected countries.
3. The international cost-effectiveness research on these policies is less extensive than for the policies mentioned in the previous paragraph, however.
4. The web-based tool for "Assessing Organizational Capacity" developed by Elie Orbach of the World Bank is a good example.
5. For a useful overview, see Corrales (1999).

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Part 6

Private Sector and Infrastructure

Chapter 20

Private Sector and Infrastructure: Overview

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20.1 Introduction

This overview summarizes the major policy and program choices that are available to governments seeking to achieve growth and equity objectives through infrastructure interventions. It is intended to help readers integrate the guidance provided in the infrastructure chapters of this volume that address the preparation of policies, strategies, and actions for each individual infrastructure sector.

The infrastructure chapters review the products and services that are best provided to households and firms—by government or the private sector—in the context of government regulation that allows them to function efficiently and equitably. A chapter on mining (chapter 25) is included because of the importance of governments in regulating this otherwise privately run sector; the summary recommendations for government interventions outlined here, however, apply mostly to nonmining infrastructure.

As noted in chapter 1, poverty reduction can be measured by improvements in four dimensions: economic opportunities, capabilities, security, and empowerment. Households will experience changes in these dimensions in two main ways: (1) increased consumption that results from growth in household incomes, and (2) increased access to and consumption of goods and services that are made more affordable by efficiency improvements or government actions in support of social equity objectives.

Most poor households depend for their income on private sector activities such as the sale of food and cash crops, labor, and other services. These activities are affected by the quantity and quality of infrastructure services and by the reliability of access to these services. Consequently, interventions to improve infrastructure can play a major role in poverty reduction. Other measures that can help the income-generating activities of the poor include giving support to small and medium-sized enterprises (SMEs), and labor market interventions such as training and assistance to home-based productive activities (see chapter 16, “Urban Poverty”).

The availability of modern infrastructure also increases the value of the main asset of the poor—labor—by reducing the time that households spend on basic subsistence activities, the time that women spend on domestic chores, and the time lost through ill health. Moreover, infrastructure investments have a strongly complementary relationship with other physical and human capital in a process of balanced growth, and investment decisions therefore should be based not only on the immediate economic impact of a specific infrastructure investment, but also on its potential impact on overall growth. Analysis of these potential effects is normally undertaken in the context of the evaluation of a country’s growth patterns.

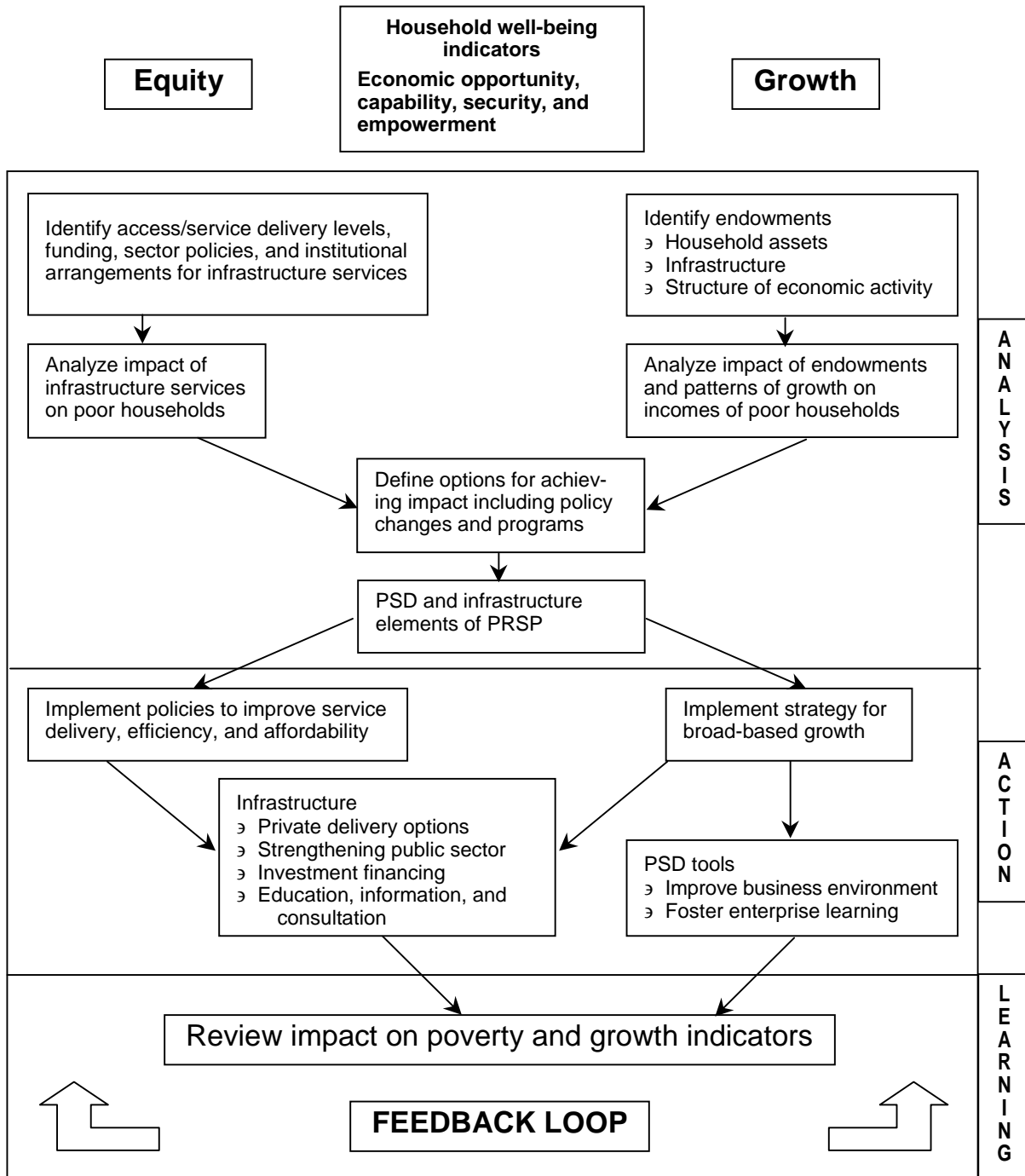
Household consumption is influenced by the need for and the availability of infrastructure services; it is also strongly influenced by the affordability of these services, as determined by prices charged in relation to household incomes. Governments can influence those prices through a variety of measures that either increase the efficiency of service provision—for example, by encouraging competition or the greater involvement of the private sector—or provide subsidies that reduce prices generally or reduce them for specifically targeted groups.

A conceptual framework that captures these relationships is outlined in figure 20.1 and is applied in the sections that follow. The first of these identifies analyses that may help clarify the issues that must be addressed when developing infrastructure interventions designed to bring about poverty reduction. The second sets out the range of options that governments may consider in detailing their strategy, and the third briefly discusses practical steps and approaches to get started.

20.2 Analyzing Poverty Linkages

It is important that policymakers understand how development of various types of infrastructure can affect the growth and equity dimensions of poverty reduction. Potentially significant linkages that may be identified between household well-being and sectoral activities are discussed at length in each sectoral chapter, and are summarized in box 20.1 under the four steps to the preparation of the infrastructure components of a national poverty reduction strategy. These steps are (1) analyzing the impacts of infrastructure on poverty, (2) developing intermediate sectoral goals, (3) designing policies

Figure 20.1. Private Sector Development (PSD), Infrastructure, and Poverty Reduction: A Conceptual Framework



and programs, and (4) evaluating the fiscal implications of policy and program changes. The analysis at the country level should investigate the specific nature and extent of these linkages.

Some measurable indicators of infrastructure services are suggested in the sectoral chapters. In general, there are two basic types of indicators: (1) service delivery indicators that measure the quantity, quality, reliability, accessibility, and affordability of infrastructure services, including education and health, where appropriate; and (2) other indicators that, where applicable, measure environmental impacts, the level of regional integration, trade, and competition. To gauge progress over time, as well as inform priority setting, the current level of these selected indicators should be measured and analyzed.

Comparisons can be made with appropriate benchmarks or with levels in other countries that are at a similar type of development. On this basis, and considering historical performance, realistic goals can be established for key sectoral areas.

Benchmarks for equity—that is, household access to and consumption of infrastructure services—are often available. Urban and rural benchmarks vary and should be considered separately. Because the impact of infrastructure on growth is interlinked with other sectors, benchmarks for predicting the effect of specific infrastructure impact on growth are thus less readily available. Proxy indicators that might be used are those that indicate whether or not demand is being satisfied at full cost recovery rates; these include, for example, the absence of backlogs or waiting lists.

The sectoral chapters list sources of international and regional averages that may be used as benchmarks. Sources of information at the country level include household and community surveys, both stand-alone surveys and surveys that piggyback on broader survey instruments; data on users of services and their needs; and audits of existing physical, educational, and institutional infrastructure. In addition, information on business services is often collected by statistical offices, academic and research institutions, and universities.

As part of the initial step of analyzing potential poverty impacts, the current situation should be assessed, including comparing the outcome with established benchmarks based on industry or regional norms to identify critical gaps in service and delivery. One approach is to conduct a service gap analysis by assigning a score based on the different attributes of the sector (for details and examples, see chapter 21, “Energy”; chapter 23, “Water and Sanitation”; and chapter 24, “Information and Communication Technologies”).

20.3 Assessing Options

Examining the gaps revealed by country-level indicators and considering appropriate sectoral goals are needed to enter into a review of policy options. This includes a reconsideration of existing policies and

Box 20.1. Potential Linkages Between Household Well-Being, Infrastructure Interventions, and Government Policies and Programs, and Their Fiscal Implications		
Steps	Equity impact on household	Influence on patterns of growth
1. Analyze poverty impacts Define impact of infrastructure on poverty outcome indicators, based on country-specific data and international norms	<ul style="list-style-type: none"> • Capabilities <ul style="list-style-type: none"> – health – education • Security • Empowerment (e.g., benefits from reduced time burdens) 	<ul style="list-style-type: none"> • Enhanced income generation through <ul style="list-style-type: none"> – increased factor accumulation – increased factor productivity • Reduced opportunity costs <ul style="list-style-type: none"> – increased convenience – time saved – health benefits, etc. • Sustainability of resource use; environmental aspects
2. Develop sectoral goals Define changes in intermediate sectoral indicators	<ul style="list-style-type: none"> • Increased access through <ul style="list-style-type: none"> – increased availability – increased affordability • Health indicators, if applicable • Education indicators, if applicable 	<ul style="list-style-type: none"> • Service delivery indicators <ul style="list-style-type: none"> – cost-efficiency – supply reliability – supply quality • Environmental impact • Regional integration, trade, competition
3. Design policies and programs	Programs to increase availability and affordability or quality	<ul style="list-style-type: none"> • Competition policy • Regulatory framework • Governance • Privatization; Private Participation in Infrastructure (PPI)
4. Evaluate fiscal implications of policy and program changes	Restructuring of subsidies	Changes in government income (tax revenues) and expenditure (public financing of investments)

needs for reform to policies and programs to support the desired improvements in sector performance (see chapter 16, “Urban Poverty”).

During the options analysis phase, governments should consider potential complementarities and tradeoffs

- ⊃ within each infrastructure sector, where the analysis indicates that equity and growth objectives are closely interlinked and require similar policy reform and program changes; and
- ⊃ across infrastructure sectors, where the analysis indicates that a consolidated package of infrastructure services is needed to have a positive effect on equity and growth.

Where complementary choices are not available, options should be developed to maximize improvements in service delivery and access indicators. For example, governments that want to increase service delivery performance could seek to promote private sector participation as a way of both increasing competition in the sector and reducing fiscal costs. Similarly, governments that want to increase access can choose from a variety of instruments with differential fiscal impacts, such as rollout obligations in concession agreements and cross-subsidies.

This phase of setting goals and selecting preferred policy options is closely linked to development of the overall Poverty Reduction Strategy Paper (PRSP). Those parts of the process that relate to consulting with communities to establish priorities and preferences will overlap and should be integrated with the larger participation process (see chapter 7, “Participation”). Special attention can be given to including infrastructure and private sector stakeholders, such as network and non-network service providers and commercial users, in the consultation process.

The available policy options may typically be grouped into four broad categories:

1. sector reforms to increase competition in service delivery and to regulate service quality and prices;
2. changes in service delivery mechanisms, including privatization;
3. changes in service funding, including subsidies; and
4. institutional reforms.

20.3.1 Option 1: Sector reforms

International experience has shown the potential payoffs of measures to increase competition in service delivery and of the separation of policy development from service delivery and regulation, in terms of improved service delivery and an improved fiscal situation. However, because the sector reform process is complex and can entail political costs, it needs to be managed carefully. The technical parts of the process—increasing competition in service delivery, price and service quality regulation, and regulatory institutions—are discussed below. Separating the roles of policy development from service delivery and regulation is discussed in section 20.3.4, the fourth option, “Institutional reform.”

Increasing competition in service delivery

Traditional utility services, such as telephones and electricity, are delivered through networks connecting many consumers. Historically, it was not considered feasible to permit competition in the delivery of these services that were considered natural monopolies. However, technological changes, such as the development of mobile phones, efficient small-scale electricity generators, and electronic metering and billing, have created the possibility for competition by restructuring the network service delivery system.

Another way to improve infrastructure service delivery is to encourage the entry of small alternative service providers to complement existing providers whose services may not reach the poorest households. Their higher unit cost or lower quality of delivery has often led to small service providers being ignored or even legally prohibited by policymakers (see, for example, chapter 23, “Water and Sanitation”), but it is clear that they can play an important role in supplying communities ignored by large-scale networks, even if only on a transitional basis until conventional services can be provided. Rural

populations frequently cannot be efficiently served by the traditional networks because of the physical dispersal and small concentration of communities. Service delivery for these rural communities typically entails a reliance on alternative technologies (for more details, see chapter 21, “Energy”).

In addition to the privatization of incumbent service providers, to level the playing field (discussed separately below), the main options to increase competition through restructuring the large service networks are

- ⊃ *horizontal unbundling*, or introducing competition between industry participants, for example, multiple electricity generators competing with each other;
- ⊃ *vertical unbundling*, which separates provision of the different services within a sector to facilitate competition in the unbundled sectors, for example, separating production from transmission;
- ⊃ *free entry*, enabling new entrants (or just the *threat* of new entrants) to a sector, which can provide strong incentives for existing service providers to improve their services (unnecessary restrictions on entry removed and licensing reduced to that which is necessary to guarantee a minimum quality of operator); and
- ⊃ *competition* for the right to provide a service in areas where it is not possible to have multiple operators, such as a transmission grid.

Measures to facilitate the emergence of alternative providers include

- ⊃ lifting legal prohibitions on entry into the market, for example, eliminating monopolies and preventing exclusivity provisions in contracts;
- ⊃ removing biases against small operators in tariffs and in quality and other regulations;
- ⊃ providing effective, simple rules so that small operators do not engage in unsafe or environmentally harmful practices; and
- ⊃ assisting small operators to provide lower-cost, higher-quality services by facilitating interconnection with formal network operators, where requested.

Alternative providers can deliver network services to poor households in areas where they were formerly physically unavailable. Although unit charges of these small providers may be higher than those of formal utility services, the absence of large up-front expenditures such as connection charges may make the small consumption of poor households more affordable for those households. The choice of services can also be adjusted to household needs and affordability: they can curtail purchases when their incomes are temporarily reduced. Another advantage is that alternative providers tend to be more innovative than traditional utilities in the payment methods available, offering such options as flexible tariff schemes and credit arrangements. Finally, these providers are also a potential source of employment for the poor.

Price regulation

Price regulation is normally required in markets that have the characteristics of natural monopolies, such as electricity transmission or water distribution. Infrastructure services should be priced to ensure that total revenues cover total costs, including operations, maintenance, capital replacement, and network expansion. Unless costs are covered, a vicious cycle of declining service, reduced payments by customers, and insufficient revenue to improve service will likely result.

Various tariff schemes can be used to ensure that poor households bear relatively less of the burden of the fixed costs than consumers such as richer households or businesses. However, if prices for new connections are set below the cost of providing service to people in remote or high-cost locations, the service provider will have little incentive to make those new connections. It is possible to mandate the provision of universal service access, but care is needed to ensure that the entire operation does not become commercially unattractive as a consequence. Households without access to network services do not benefit from price regulation that makes it unprofitable for the supplier to serve them.

In determining how to regulate prices, governments should consider:

- ⊃ Establishing objectives for price regulation that are consistent with sectoral and poverty goals. For most developing countries, expanding access is usually the primary objective for network services, whereas in middle- and higher-income countries, the objective may be to control prices for those who already have access. The different emphasis in low-income countries suggests that pricing arrangements should allow for sufficient revenue to be generated to finance increased investment in network expansion. This creates tension with the objective of having affordable services.
- ⊃ Reducing administrative price regulation where competition among suppliers and from substitute products is sufficient to keep prices as low as is viable. For example, unbundled infrastructure sectors, such as electricity generation or mobile telecommunications; sectors with sufficient numbers of alternative service providers, such as water vendors; and sectors with substitute products, such as alternative fuels competing with electricity, could be subject to less price regulation.

Less intensive forms of price regulation could include

- ⊃ monitoring and publishing prices, thereby enhancing public awareness of reasonable prices and signaling market opportunities for potential rival suppliers;
- ⊃ freeing prices, but granting a reserve power to a regulator to set prices if they become excessive; and
- ⊃ setting a relatively high ceiling for infrastructure service prices.

Regulation of service quality

Care is needed to ensure that quality standards are not set any higher than is necessary to achieve public policy objectives to ensure accessibility to, and availability, affordability, and sustainability of, the basic infrastructure services to all households. Higher quality usually implies higher costs, which may result in infrastructure services becoming unaffordable for the poor. Permitting differing quality levels with corresponding price differentials may be a good way of improving the affordability of infrastructure services. The ability to offer multiple price and quality options may be enhanced in an environment in which additional suppliers are free to enter and different operators can offer different types of service.

Regulatory institutions

There is considerable international experience of institutions regulating private infrastructure services. A regulatory agency is usually required to administer pricing and interconnection rules, monitor compliance with these and other norms, and enforce the rules, directly or through the courts. These demanding tasks require skills in economics, finance, law, and other disciplines, as well as integrity and political acumen. Adequate and secure funding is required to ensure that regulatory agencies have access to the necessary expertise. Where agencies regulate prices or resolve disputes, it is important that they operate independently of regulated firms and of short-term political influences. Safeguards of independence include appointing regulators on technical rather than political criteria, ensuring terms of appointment do not coincide with political terms, and providing protection against dismissal without just cause. Independence also needs to be balanced with accountability, to ensure that regulators fulfill their statutory duties. Accountability measures include scrutiny of expenditures by the government and legislature, annual activity reports, public reporting of decisions, explanation of reasons for decisions, appeal to the courts or specialist appeals bodies, and processes for receiving stakeholder views (see also chapter 8, “Governance”).

20.3.2 Option 2: Changes in service delivery mechanisms

Options for service delivery, other than government departments and parastatals, include corporatized entities that are owned by the public sector but function under private sector rules in a competitive environment. Additionally, across the telecommunications, water and sanitation, energy, and transport sectors, the private sector is making a growing contribution to infrastructure investments. Infrastructure privatization can bring significant additional resources to the sector, and in competitive environments

also has been more efficient than public sector activity in delivering less expensive, reliable infrastructure services to the whole community, including the poorest households. The private sector has in fact derived its main competitive advantage from its sharper attention to the costs of service and the demands of consumers.

About 15 percent of investments in infrastructure in developing countries are now made by the private sector. Annual private infrastructure investment commitments grew from US\$16 billion in 1990 to US\$69 billion in 1999, for a total of US\$575 billion during the decade (World Bank PPI database). Donors are increasingly reluctant to finance infrastructure services that could be developed and operated by the private sector, and annual private sector long-term financial flows to developing countries are now around five times those of donors. Africa is an important exception to this international trend, however—there, private sector investment in infrastructure is still low.

There are large challenges in moving to private delivery of infrastructure services, which is a complex process that needs to be accompanied by market structure reforms and regulatory reforms. Managed carefully, the reform process offers more efficient infrastructure services, with better consumer access and cheaper and more reliable infrastructure inputs into other businesses. Poverty can thus be lessened through expanding economic opportunities and by directly improving the services available to the poor.

Privatization

Almost every country has begun to privatize, in some form, its formal infrastructure utilities. (“Privatization” is used here as a general term covering a range of options for involving the private sector in service provision.) The main options available for privatization and their key features are shown in box 20.2.

The overarching rationale for privatization is its potential to create more efficient firms and stimulate economic growth, generating the conditions for poverty reduction. Apart from positive aggregate growth, privatization’s direct effects on poor households may be mixed, usually trading off some early negative effects for greater longer-term positive outcomes:

- ⊃ Employment consequences may include short-term decreases in employment in the affected industry but greater longer-term increases in employment elsewhere, as a result of the improved reliability or lower cost of the privatized service.
- ⊃ More efficient firms may offer lower prices, benefiting all consumers.
- ⊃ Access to private financing may lead to increased investment, hence to improved access to services by the poor.
- ⊃ Private investors require cost-covering tariffs. If tariffs are initially below cost, tariffs will need to rise, to the short-term detriment of all consumers. In the medium term, these tariffs should generate the funds needed to pay for enhanced investment and maintenance and can result in improved services for all.
- ⊃ More efficient operators are unlikely to tolerate illegal connections or theft of services. To the extent that poor households engage in these practices, they are likely to suffer from privatization.

<i>Option</i>	<i>Asset ownership</i>	<i>Operations and maintenance</i>	<i>Capital investment</i>	<i>Commercial risk</i>	<i>Typical duration</i>
Service contract	Public	Public and private	Public	Public	1–2 years
Management contract	Public	Private	Public	Public	3–5 years
Lease	Public	Private	Public	Shared	8–15 years
Concession	Public	Private	Private	Private	25–30 years
Build-operate-transfer (BOT)	Private and public	Private	Private	Private	20–30 years
Divestiture	Private	Private	Private	Private	Indefinite

The terms and conditions of privatization programs to maximize the net benefits for the poor require careful attention. Governments should seek to include contractual conditions at the time of privatization that will improve service delivery to poor households (see box 20.3). Governments also should ensure that privatization leads to competition, rather than to a private monopoly. This will result in faster service expansion, more rapid introduction of modern technology, and potentially higher employment growth (see chapter 24, “Information and Communication Technologies”). In addition to avoiding private monopolies, governments should also avoid service standards that force the use of particular technology and high fixed administrative costs for businesses entering the market (see chapter 23, “Water and Sanitation”).

Strong political commitment is required to successfully manage reforms that adjust market structures, introduce new regulatory arrangements, and increase private sector delivery of infrastructure services. Success also requires a high degree of technical skill, careful attention to stakeholder concerns, and transparency and fairness. Prospective private sector investors should also be consulted for their views about the local environment and their ideas about what is possible.

Infrastructure privatization processes may well take one to two years to finalize. When a government enters into what may be a 25-year or 30-year contract with important consequences for citizen well-being, there are a number of necessary reform preconditions before privatization:

- Government needs to set up its own unit to manage the reform process and coordinate the work of advisors. The reform unit should have highly skilled staff, receive strong political support, and have good access to policymakers.
- Help is available for the reform process. One of the best sources of advice will often be other people who have gone through similar processes. Donors have a range of technical assistance activities available to support infrastructure privatization, and private consultants offer a wide range of supporting services.
- Requiring prospective investors to compete with each other for privatization contracts is the most effective way of ensuring that the best-qualified firm is chosen. Competitive processes almost always yield better terms than negotiated contracts, and they stand up better to political scrutiny.
- The key challenge of consumer tariffs needs to be addressed. If prices are below cost, a transition path is needed to ensure that the sector can move to cost recovery, permitting private investors to make a reasonable return while expanding and improving service delivery.

20.3.3 Option 3: Sources of funding and subsidies

Funding sources for delivering infrastructure services include direct users (through user charges), other users (through cross-subsidies within the sector), and other taxpayers (subsidies from general government revenues). Even where physical access by poor households to infrastructure services is possible, it is often accompanied by lack of affordability. Subsidies may be used to address these problems; however, it is important that government objectives be clear and that the chosen subsidy arrangements be sustainable and well targeted (see chapter 17, “Social Protection”).

Box 20.3. Infrastructure Privatization and the Poor

There are various measures to maximize the net benefits of privatization to poor households.

- If the greatest problem facing poor households is lack of access to network infrastructure, a concession contract could be awarded to the firm that makes the commitment to connect the greatest number of new consumers during the period of the concession.
- If the greatest problem is the price of services, the contract could be awarded to the firm that commits itself to the lowest prices for consumers, within a given set of minimum standards.
- If the primary motivation for privatization is raising fiscal revenue to the lowest prices to consumers within a given set of minimum standards, it is important that the regulatory environment be established in advance, including any obligations to expand connections and arrangements for setting future tariffs. Privatization of a monopoly without any restrictions on tariffs or other business conduct might raise the most revenue, but the resulting private monopoly would be likely to behave contrary to the interests of the poor and may not be politically sustainable.

Examples from the different infrastructure sectors include the use of negative concessions in privatization contracts (chapter 22, “Transport”), benchmarking utility performance based on coverage in poor neighborhoods (chapter 23, “Water and Sanitation”), and concessions with investment obligations (chapter 21, “Energy”).

A subsidy exists when users receive services without bearing the full cost of those services. The service provider must cover its costs, including operating expenses, maintenance, replacement investment, and system expansion, to avoid a progressive deterioration in service quality and failure to extend services. The potential funding sources for necessary subsidies are taxpayer revenue or revenue from other service users. Box 20.4 indicates considerations that governments should take into account when designing a subsidy scheme.

Potential subsidies can be evaluated according to coverage (the extent to which the poor are reached), targeting (the share of subsidies to where the poor live or work) and geographic distribution, predictability (reliability of receiving subsidies), price distortion and unintended effects; direct and indirect fiscal costs of subsidies, delivery mechanisms, and ease of administration. There is a variety of methods for providing subsidies, including general price subsidies; lifeline subsidies, restricted to basic need levels; burden limit (share of household income spent on service); and cash transfers. (For a sectoral application, see chapter 21, “Energy.”)

Most subsidy schemes exclude some poor households (errors of exclusion) while providing benefits to some richer households (errors of inclusion). These errors can be addressed by adjusting the subsidy scheme. For example, in 1989, a drinking water subsidy scheme in Chile reached only 14 percent of the target group, but by 1997, almost 75 percent benefited. This was achieved through the gradual altering of the quantity of water subsidized and the level of the subsidy, and by relaxing the eligibility conditions for households. Institutional changes were also important: the water companies were allowed to inform municipalities about households that seemed to be struggling to pay bills, thereby identifying likely targets for subsidies. This is a general challenge for targeted programs (see chapter 17, “Social Protection”). Difficult targeting issues arise when funds are insufficient to subsidize all of the target groups. A useful principle to follow is to prioritize resources according to greatest impact—where the benefits appear to be equal, the alternative that is less costly should be selected. On this basis, for example, network expansion funds could be directed to periurban areas rather than to rural areas; or, if poverty is greater in rural areas, funds might be directed to alternative, lower-cost interventions in rural areas. The tradeoffs between potential beneficiaries may be more easily considered when subsidies are direct—for example, cash grants—rather than indirect, such as cross-subsidies.

Box 20.4. Subsidies as Part of the Reform Agenda

Factors to take into account when designing a subsidy scheme include

- ③ Identify the motivation for the subsidy. If it is economic efficiency, connection and rental should be subsidized. If it is equity, particular groups should be targeted. If the motivation is political, it is important to identify any powerful potential losers and find a way to compensate them so that overall gains from reform are not jeopardized. Where reforms generate winners and losers, the losers tend to identify themselves in advance and organize themselves in opposition, while the winners are likely to be dispersed and less well organized.
- ③ Determine whether the subsidy is temporary or permanent; if temporary, make a credible timetable and arrangement for its phasing out and removal.
- ③ Subsidies require information about costs and demand. This is necessary to provide an initial baseline and monitor changes.
- ③ Ensure that the regulatory system is sufficiently strong and knowledgeable. There are arguments for developing close connections between infrastructure regulators so that knowledge can be shared, since many of the issues—and some of the household demand information—will be common across industries.
- ③ Identify the opportunity costs of subsidies. If subsidies are direct, how else might the funds have been used, and what is the cost of raising them? If cross-subsidies are involved, what are their distortions and equity implications?

Meeting poverty objectives while restructuring utility price policies involves these considerations (see chapter 23, “Water and Sanitation,” for a sectoral application):

- ③ avoiding “reverse cross-subsidies”—that is, ensuring that poor people are not charged more for their water than better-off users;
- ③ establishing ways to identify the poor and provide direct government transfers to the utility for a portion of their bill;
- ③ seeking to ease the cost of connections for low-income users by subsidizing connection costs, or by allowing connection fees to be spread over a longer period and included in monthly bills; and
- ③ using a lifeline tariff—charging a low, often flat, rate for low-income or low-volume users. A typical ceiling for the tariff would be six to eight liters of water per capita per day.

Source: Waddams Price (2000).

In allocating subsidies among providers, it is desirable to use a competitive allocation mechanism where possible. For example, in the mid-1990s, Chile used a universal access fund to provide access to telecommunications services for about one-third of those households in rural areas who did not previously have access. The government identified target regions, and through a competitive bidding process awarded a subsidy and a nonexclusive license to the firm that requested the smallest subsidy to meet certain target outcomes—for example, the number of public pay phones in the region. In this way, Chile was able to ration its universal access fund, generating around US\$40 million of additional private investment while spending just US\$2 million of public funds. (See box 20.5 for some general factors to consider when assessing subsidy options.)

Careful consideration is needed as to whether the costs of infrastructure subsidies are justified (see box 20.5). Direct costs to be considered include the costs (higher prices) imposed on nonbeneficiaries and the administration costs incurred by the companies and by the government. The administration costs involve the salaries of those involved and the opportunity cost of scarce professional skill that could be used in other parts of government for other purposes. Consideration should also be given to the opportunity costs of using funds to subsidize infrastructure services. Should a funding source be used to extend telecommunications services to the rural poor, or to provide better education, or should it be put to some other public use? The tradeoffs between the costs and benefits of subsidy schemes should occur in the framework of general public expenditure review and should extend to consideration of less transparent cross-subsidy schemes (see chapter 6, “Public Spending”).

Box 20.5. Options for Subsidy Design and Financing: Key Issues

Are infrastructure subsidies an appropriate instrument? Reducing the prices faced for network infrastructure services offers only one of several important items of consumption, such as food, clothing, and housing, that could be subsidized. Cash transfer payments allow people to choose what are their most urgent needs (see chapter 17, “Social Protection”). However, public health or environmental considerations may justify subsidizing certain infrastructure services; for example, subsidizing water and sewer services may reduce outbreaks of disease, and infrastructure subsidies may be less administratively costly than a social protection system that makes cash transfer payments to poor households.

What should be subsidized? Infrastructure pricing typically has three elements: a one-off payment for connection, a fixed monthly rental payment, and a per unit consumption payment. Where the poor lack access to infrastructure services, they are more likely to benefit from subsidized connections than from subsidized rental or consumption. Where the principal problem is affordability for those who are already connected, targeted rental or consumption subsidies may be more appropriate.

How to target subsidies. Budget constraints mean that some method is needed to identify poor beneficiaries. Possible identifiers include household characteristics (for example, living in a particular region, retired, or single-parent family) or demand characteristics (for example, using prepayment methods that are prevalent among low-income groups). Alternatively, some subsidies are universally available but disproportionately benefit the poor, such as lifeline tariffs where the first one or two consumption blocks are sold below cost to assist low-consumption households (see also chapter 17, “Social Protection”).

To whom should the subsidy be given? Regardless of which households are the ultimate beneficiaries, subsidies can be delivered to consumers or producers.

- 3 Delivery to the consumer has the benefit of reaching the target group directly, but may be more administratively complex than paying producers. Consumer subsidies can be delivered through lower prices or subsidized credit, universally or selectively, or to individuals or communities.
- 3 If subsidies are delivered via the producer, the amount of subsidy can be used to compensate the producer for some part of the service delivered below cost to target households. When firms are responsible for delivering subsidies, they may need to establish cross-subsidies. Cross-subsidies may be applied between different groups of consumers (for example, from industrial to residential consumers) or within consumer groups (for example, from one group of households to another).

How should subsidies be financed? The two basic sources of finance for subsidies are general tax revenue and cross-subsidies. A third, hybrid, financing source is an industry levy, which is raised from all operators in an industry and then used to subsidize particular target groups. For example, all telephone companies might pay 1 percent of their revenues toward a universal service fund, which subsidizes network expansion in rural areas. Using general tax revenue has the advantage of not distorting prices in the target industry, but it imposes costs elsewhere in the economy.

Cross-subsidies can encourage increased consumption by the subsidized consumers, thereby indirectly raising costs for all. Cross-subsidies are often regarded as inconsistent with competition. In a competitive market, attempts to raise prices above cost will lead to “cherry-picking” of high-price consumers by competitors, leaving no one to bear the costs of the subsidy. The effects of a cross-subsidy can be reproduced in a competitive market through an industry levy on all operators, the proceeds of which can be allocated to subsidize particular consumers. Because of the importance of competition in providing increased services to the poor, industry levy schemes may be more appropriate than monopoly franchises that support nontransparent cross-subsidies.

20.3.4 Option 4: Institutional reform

An important dimension of pro-poor infrastructure reforms lies in government assigning an appropriate role to itself. The critical role of government is to ensure that services are available and delivered to poor households. While this responsibility does not necessarily require that the government deliver these services itself, it does entail responsibility to make policies and write rules—laws or regulations—by which the system must operate, and to ensure these rules are enforced.

In addition to policymaking and regulation, governments need to allocate budget resources to support these policies. Chapter 6, “Public Spending,” highlights the general principles that apply. In this context, the roles of civil society and subnational governments in public resource allocation should be identified. This can involve increasing the participation of the poor in the decisionmaking process (for a sectoral application, see chapter 16, “Urban Poverty”).

When a government agency delivers a service, the *regulatory* responsibility for the service lies outside that agency, in a body with the characteristics and responsibilities previously discussed in section 20.3.1, “Option 1: Sector reforms.” Failure to ensure this separation, which is frequent, usually results in poor performance of public service delivery.

Where services are publicly delivered, the delivery agency should be guaranteed managerial autonomy in its use of resources and in staffing decisions. In this context, transparency of operations and accountability for results are critical.

20.4 Implementing the Framework in the Poverty Reduction Strategy Process

An analysis and review of the options at the country level will likely reveal that difficult choices must be made. Options for infrastructure sectors need to be considered and prioritized in the context of strategies for other sectors. In particular, implications will need to be considered during the associated budgeting process.

It is reasonable to expect that, especially during the initial PRSP cycle, data and resource limitations will constrain the ability of governments to undertake comprehensive analysis. Often, for example, information will be available on infrastructure supply, especially for network supply, roads and power, water, and telecommunications utilities, but will be much less readily available for household and commercial consumption of infrastructure services, which are self-provided or provided by non-network suppliers—for example, small-scale suppliers of water or nongrid electricity. Similarly, while many countries now have regular surveys of household income and consumption, surveys on the impact of infrastructure access and constraints on farms and firms are relatively rare.

Given these circumstances, it is suggested that governments adopt a phased strategy:

- First, focus on readily determinable impacts. For example, expand service access to the poor while minimizing the fiscal and public capacity burden by leveraging as many private sector, nongovernmental organization (NGO), and community resources as feasible.
- Simultaneously identify key information gaps to be addressed during the next PRSP cycle. Options include leveraging existing surveys (for example, by expanding the content of living standards measurement surveys) and investigating how new surveys (for example, service delivery surveys or firm surveys) can gradually build up domestic survey and analytical capabilities. Using NGOs and communities in data collection activities has the added advantage of raising stakeholder awareness.

Monitoring and evaluation of the effect of reforms on the objectives and targets will be critical to learning what parts of the process should be adjusted (see chapter 3, “Monitoring and Evaluation”). Publicizing the results to stakeholders, including the poor, is critical to the process (see chapter 23, “Water and Sanitation,” for a sectoral application).

Several instruments may be used in evaluating impact, including household surveys, focus groups, visual observations, and analysis of official records (see chapter 22, “Transport”). Potential indicators are suggested in the respective sectoral chapters, including indicators of the sector, macroeconomic, and enabling environments; program content; and access to infrastructure and its effect on households, communities, and organizations. The levels and charges in these indicators provide key information to help guide appropriate policy choices.

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Chapter 21

Energy

Ranjit Lamech and Kyran O'Sullivan

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21.1 Introduction

21.1.1 Overview

The objective of this chapter is to help governments diagnose and define energy policies and programs when preparing their comprehensive poverty reduction strategy. Following a brief review of some facts about energy and the poor, section 21.2 discusses the demand of households and business for energy. Section 21.3 presents an energy–poverty framework—that is, a framework for analyzing the role of the energy sector and the role of energy services in reducing poverty. Five energy development goals are suggested to focus energy–poverty diagnosis and policy formulation. The impact on poverty reduction of progress in achieving the five energy development goals is discussed, and indicators are defined to establish baselines and monitor progress. Section 21.4 outlines policies and programs that may be adopted to achieve these energy development goals. Annex Q provides a suggested structure for presenting energy-poverty linkages and sector goals in the context of preparing a Poverty Reduction Strategy Paper.

21.1.2 Energy and the poor: some key facts

- ⊃ Energy can alleviate the drudgery in the lives of millions who today consume insufficient modern energy. They must walk instead of using transport, they live in unlit and unheated homes, they must toil without the benefit of powered machines, and they must cook using traditional fuels.
- ⊃ Poor people save a lot of time by shifting to modern energy services—making time available for productive pursuits, education, and leisure. This time would otherwise have been required to collect traditional fuels, and in less productive manual effort.
- ⊃ While poor people may rely in part on self-collected traditional fuels for subsistence cooking and heating needs, they exhibit a strong desire to use more convenient modern energy services and are willing to pay a substantial part of their cash income to obtain it. In doing so they attach a large value to the time saved and the quality of service made available.
- ⊃ Modern energy services can enable poor households to engage in, and extend, activities that generate income. Electric lighting extends the working day, electric machines (such as sewing machines and looms) increase productivity, cooking fuels like kerosene and liquefied petroleum gas (LPG) enable households to increase the amount of food for sale.
- ⊃ No one wants energy for itself; people want it for what it can do—energy is in this sense a “derived demand.” People demand energy to cook, provide lighting and refrigeration, drive motors, and obtain services like communications (telephones) and entertainment (televisions, radios).
- ⊃ Equipment such as light fixtures, stoves, motors, pumps, sewing machines, and so forth are required to convert energy to services that people need. For poor people the initial cost of obtaining such equipment can be a critical factor in determining their ability to benefit from available energy—often more of a constraint than the recurrent costs of the consuming the energy itself.
- ⊃ All social services are more effectively delivered and benefits are enhanced when modern energy services are also available. Primary and secondary health clinics need energy to store vaccines, operate medical equipment, and function after dark. Educational attainment is greater in households with electricity than in those without. Provision of clean water can depend critically on energy for pumping and treatment.
- ⊃ Women and children are disproportionately affected by the lack of modern energy services. It is they who collect traditional fuels in remote areas, carry large loads and tend primitive fires. As a result they suffer animal bites, fatigue, smoke inhalation, and burns. The reduction in collection of traditional fuels and the improvements in indoor air quality made possible through the availability of modern cooking fuels have a huge positive impact on the lives of women and children.
- ⊃ Much economic activity would be impossible without energy, and economic growth that raises incomes (or reduces income poverty) is strongly correlated with increased energy use. Energy is used in the production process of nearly every sector. Adequate quantity and reliability of energy supply are crucial to the ability of countries to compete for new export markets.

- ⊃ Government borrowing and contingent liabilities of guarantees for investments in energy infrastructure are often a source of macroeconomic and fiscal instability. The poor are most vulnerable to such shocks.
- ⊃ Well-designed subsidies are often essential to extend energy services to the poor.
- ⊃ Corruption associated with the exclusive public or monopoly provision of energy services increases energy's cost. Poor people are disproportionately affected, since they have the least ability to bear the increased cost. Therefore, reform that increases the choice of energy providers for consumers can benefit the poor.

21.2 Demand for Energy

No one wants energy for itself; people want it for what it can do. The demand for energy derives from the needs of households and business. These needs are explored below.

21.2.1 Energy and household welfare

Households require energy first to satisfy basic consumption needs, and then, as their income increases, to obtain welfare-enhancing amenities and energy for production.

Basic consumption needs. All households require a minimum amount of energy to meet their basic subsistence needs. They must:

- ⊃ Cook food to meet their nutritional needs. For poor households, this energy is often in the form of firewood, straw, dung, or other biomass.
- ⊃ Illuminate their homes. Poor households often obtain this energy service from oil lamps, candles, and dry-cell batteries.
- ⊃ Heat their homes in cold climates.

Welfare-enhancing amenities. Once households have satisfied these basic needs, additional demand for energy is driven by amenities and services that enhance welfare. For example:

- ⊃ Commercial cooking fuels that reduce the time spent gathering and preparing traditional biomass fuels, and that reduce the indoor smoke caused by the use of traditional fuels.
- ⊃ Improved electric lighting at the household and community levels to enhance educational attainment, enable tasks to be performed more easily, and reduce security risks.
- ⊃ Appliances such as fans to make homes more comfortable, and refrigerators to preserve food.
- ⊃ Potable water supply and sewerage systems that depend on energy for pumping, system monitoring, and treatment.
- ⊃ Access to information, entertainment, and communication, provided by household radios and televisions, network receiving and switching stations, and distance learning centers, for example.
- ⊃ Access to health care and maternity clinics, which need energy for lighting, diagnostic equipment, and vaccine preservation.
- ⊃ Transportation services to obtain access to other inputs and to facilitate travel to jobs and schools.

All of these services and amenities that improve welfare and the quality of life require modern commercial energy. The services complement each other; that is, the availability of one service reinforces and increases the benefits of another. For example, when women no longer have to gather fuelwood, their health can be expected to benefit from the reduction in physical labor, and they can convert the time saved into more productive activities that lead to increased income or greater educational benefits. Energy that provides lighting and potable water can help achieve lower rates of illness and improved literacy, which can in turn support health outcomes such as lower fertility rates.¹

It should be emphasized that none of these outcomes follow automatically from a new source of energy being made available in a community. Indeed, failure can happen at the very first hurdle, if poor

Box 21.1. Women and Energy

One of the main problems for the women of [the marginalized urban shantytowns of] Tacna, Peru was the absence of electricity in their homes, for several reasons: they wanted to make the most of the evening to speed up their textile work; they needed to feel secure in their homes; they needed to facilitate the task of caring for their children; they needed to make the night less dark; they needed to light the streets that they and their families used.

— Yturregui 1998

Current energy production and use entails occupational hazards for women. The estimated 10,000 women fuelwood carriers in Addis Ababa, who supply one third of the wood fuel consumed in the city, suffer frequent falls, bone fractures, eye problems, rheumatism, anemia, and miscarriages from carrying loads often weighing 40–50 kg—nearly as much as their own body weights.

— Haile 1991

people have no access to or cannot afford the energy services that supposedly have been made available. This highlights, among other things, the need for community participation in infrastructure planning.

Women and energy. Women are unequally affected by inadequate supply of modern energy services.² Factors that account for this are described below:

- ⊃ A lack of energy services affects the supply of other essential services, such as health and education. (See chapter 18, “Health, Nutrition, and Population,” and chapter 19, “Education.”)
- ⊃ A lack of energy services affects the supply of other infrastructure services, such as transport and water. Again, women are disproportionately affected since it is they, for example, who are in large part responsible for collecting potable water from distant sources and who face the associated risks for their health and safety. (See chapter 22, “Transport,” and chapter 23, “Water and Sanitation.”)
- ⊃ A lack of energy services in agriculture results in women having to labor at crop tending, harvesting, and processing.
- ⊃ Because women do most of the cooking in poor households, they, and children in their care, are the most exposed to indoor air pollution and are the most likely to suffer the health effects of this pollution. Women do most of the gathering of biomass fuels, often having to walk long distances from and to their homes, and as a result suffer a variety of physical injuries when walking with heavy loads of biomass. In addition, the terrains where they collect biomass are often hazardous, posing risks to their physical safety. (See section 21.3.6 and chapter 10, “Gender.”)
- ⊃ The time that women spend collecting biomass fuels and water, tending fires, or laboring in farm activities—time spent that results primarily from lack of modern energy services—is lost to activities such as leisure, education, and other productive activities.
- ⊃ Many of the potential income activities of women in the informal sector depend for their productivity on modern energy services. (See section 21.2.2.)

When energy poverty is disaggregated in terms of gender, important findings emerge that should be taken into account in program design, since it will often be the case that women will be affected differently by the changes—in work patterns, health, education benefits, leisure, household expenditures, and so on—that are brought about by an investment or policy that connects the household to a modern energy supply (see box 21.1).

21.2.2 Energy and economic growth

Factories, farms, shops, trading, transportation, and construction are the engines of economic growth. The incomes of the poor generally rise with overall economic growth, and demand for energy also rises roughly in step with economic growth.³ All businesses—formal or informal, large or small, rural or urban—use energy in their offices, in manufacturing establishments, and for transport.

The formal sector. Energy is used by productive enterprises in innumerable ways. It is used, for example, to:

- ⊃ transform raw materials into final products, such as plastics, cement, glass, paper, metals, and food products;
- ⊃ produce and refine metals;

- ⊃ operate machinery on farms and in agroprocessing and forestry operations;
- ⊃ drive the motors found in all manufacturing, from textiles and garments to canning, bottling, and printing; and
- ⊃ operate essential business infrastructure, such as communications, lighting, and office equipment.

The correlation between increased energy use and economic growth is further evidenced by the counterfactual—that is, that a shortage of energy supply constrains economic growth. In Uganda, India, Indonesia, and other countries, irregular and poor-quality electricity supply has required enterprises to invest in on-site generation. While this may solve their immediate power crisis, it significantly reduces the resources available to firms for more productive investment. There is also an additional economic cost, since the supplying utilities lose not only the revenues of industrial firms but also the anchor loads that make it possible to extend service to households.

Farm sector. Energy, by enabling the mechanization of irrigation and crop and animal husbandry, can lead to increases in farm income through improved productivity. (Energy, for example, was one of the key inputs to India’s “green revolution.”) It can pump water from ground sources or storage reservoirs to increase the number of annual crop yields, and can enable mechanization that can increase efficiency and the timeliness of planting, harvesting, postharvest processing, and transport. The costs and reliability of the necessary energy inputs can be improved by market reform, increased competition in retail systems, and technological improvements.

Transport sector. Reliable transport services are possible only if there is a reliable supply of transport fuels. (See chapter 22, “Transport.”)

Household production and the rural nonfarm sector. Formal employment and on-farm employment are not options for many poor people, whose only way of improving their well-being may be through self-employment in microeconomic or informal enterprises. Better energy services can enable these enterprises to compete more effectively, produce a wider range and better quality of products, and increase profitability and therefore sustainability by increasing the productivity of the resources involved (labor, capital, raw materials). Energy services, for example, enable:

- ⊃ more convenient or controlled heat for food preparation and food preservation;
- ⊃ better lighting, thereby extending the working day;
- ⊃ use of mechanized equipment to prepare food for sale and for fabrication of tools for small-scale manufacture;
- ⊃ use of sewing machines; and
- ⊃ use of communications technology and transport fuels that help integrate these cottage industries with regional and national markets.

Small businesses in rural areas can be a significant source of employment and income. The presence in rural areas of vegetable and fruit processing and canning, light manufacturing (including furniture and wood products, garments, and leather), and dairying (see box 21.2) are all strongly correlated with reliable energy supply, particularly electrification.⁴ Even when the economics of supply do not favor grid extension that would provide unlimited, reliable electricity supply, limited energy supply can spawn and

Box 21.2. A Dairy Success Story

There are 75,000 dairy cooperatives in India, with 10 million members, most of whom are landless, marginal, or small farmers with one or two cows or buffaloes. In addition to creating employment in dairy plants, marketing, transport, and distribution, these cooperatives are the loci of village transformation and have helped to provide farmers with their only regular cash flow. Most of the demand for milk is from the urban poor; to make it affordable to the poor, it is packed in small polythene sachets.

Energy is essential to the industry: as steam to pasteurize raw milk and produce milk products; as electricity to package and maintain a cold chain from the dairy plant to the point of sale; and as transport fuels to reach the urban markets.

Source: the Indian Dairy Industry, www.indiaday.com

sustain small businesses. The energy may be provided by small diesel engines or by renewable sources such as small hydro plants or plants using biomass (such as bagasse). A trading center can be sustained and developed when such energy supply is available.

Some rural artisan or cottage industries, pursued by individuals or households as independent producers, can operate without the benefit of energy. The activities of such industries can include mat making, rice husking, fish processing, the manufacture of coir products and leather goods, wood carving, brewing, and weaving. Even in these cases, however, a small amount of energy to provide evening light and extend the working day, or to enable partial mechanization, could help increase output and improve productivity.

Rural electrification that allows some traditional activities to be mechanized leads to process and productivity improvements, and can cause employment in traditional activities to decline (for example, paddy husking in Bangladesh). This type of transition is inherent in rural development, but it is likely that the commercial mill in the Bangladesh example, even as it displaces employment in traditional husking, can stimulate employment in other rural nonfarm activities.

Finally, the energy industry itself is a significant source of jobs, providing work in woodfuel and charcoal production, for example, and in the marketing and retailing of petroleum.

21.3 Energy Development Goals and Indicators

This section proposes a framework for analyzing the role of the energy sector and the role of energy services on poverty reduction. The framework proposes a set of comprehensive energy goals to focus on energy-poverty diagnosis, the achievement of which should contribute to a reduction in poverty (see figure 21.1).

21.3.1 Defining energy development goals

As governments begin to prepare their poverty reduction strategies, they should establish energy development goals to guide the selection of policies and programs to achieve specific targets.

Figure 21.1. The Energy-Poverty Framework

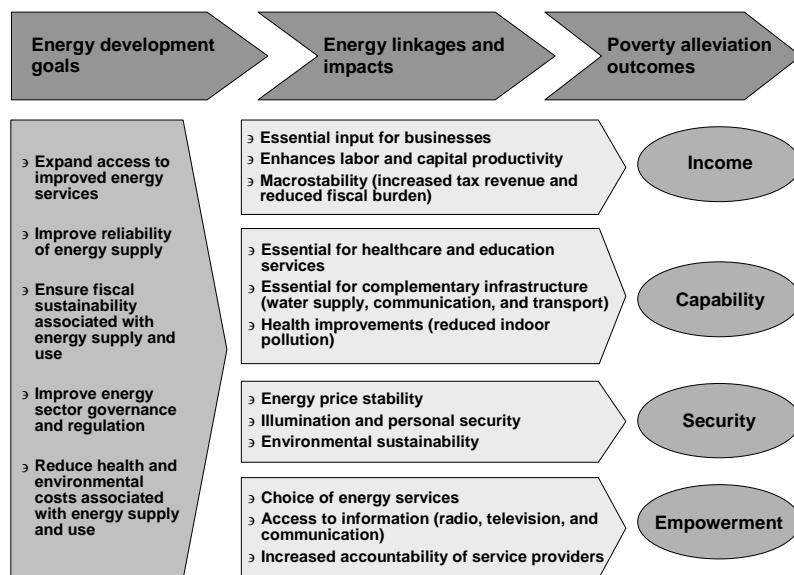
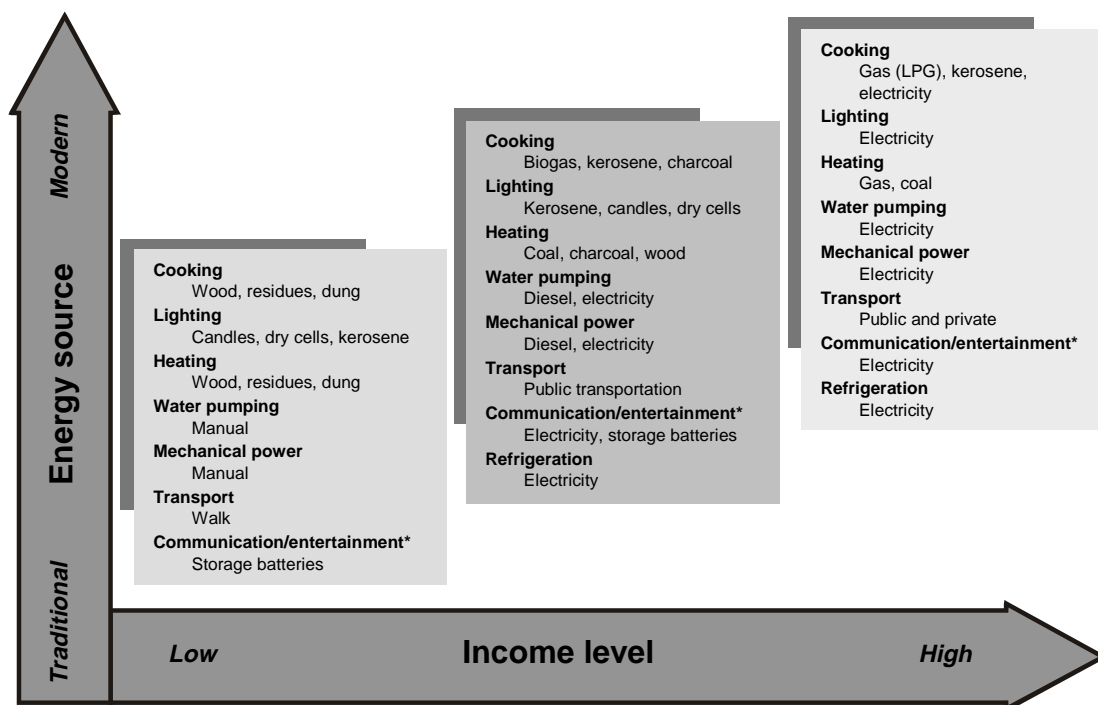


Figure 21.2. The Energy Ladder



*Entertainment: Radio, TV

Five energy development goals are recommended to focus the poverty diagnosis and strategy development effort:

- Expand access to improved energy services.
- Improve the reliability of energy supply.
- Ensure fiscal sustainability associated with energy supply and use.
- Improve energy sector governance and regulation.
- Reduce the health and environmental costs associated with energy supply and use.

The five development goals are interlinked and reinforce each other—improved governance promotes expanded access, for example, and fiscal sustainability promotes reliability and access. The goals have been selected for their comprehensive coverage of energy–poverty impacts, and given their synergies it is important that all five be implemented together. Use of the indicators suggested will help determine if a country is successful in reaching the goals, and will enable it to prioritize public policies to address those goals on which it is performing poorly. Subordinate goals may be appropriate in particular circumstances.

It should be pointed out that these goals cannot quantify the outputs (for example, cooking, lighting, heating, and mechanization) that households and businesses seek from energy services, and they are in this sense intermediate goals. Their main purpose is to support policymaking and strategy development: progress in achieving the goals will permit households and businesses to make efficient choices to increase their welfare and growth.

The remainder of this section explains why each of the proposed energy development goals is important in reducing poverty. It also defines indicators that may be used to:

- analyze the existing situation and establish the relevance of the goals;
- identify appropriate policy and program interventions to achieve the goals; and
- track progress during policy and program implementation.

Table 21.1. Availability and Affordability Indicator

Availability	
<i>Indicator</i>	<i>Analysis/diagnosis</i>
<p>Electricity availability Number of customers in a district⁵ (derived from utility sales statistics) as a percentage of total households (derived from available census estimates) Number of districts in country with electricity availability</p>	<p>If this ratio is below a given threshold, say 10 percent, it may be inferred that most of the poor households in the district do not have proximity to the network. A low ratio would indicate that most of the poor in the country lack access to electricity. An appropriate goal would be to increase coverage at a financially sustainable rate (see section 21.4.6).</p>
<p>Kerosene and LPG availability Lowest level at which formal or informal distributor is known to operate, by administrative district Consumption ratio: consumption per capita, by administrative district, derived from distributor sales statistics</p>	<p>If formal or informal distributors are not known to operate in a given region, or if the consumption ratio is below a threshold (for example, 6 liters/capita/month for kerosene, or 5 kg/capita/month for LPG), this would indicate low or no availability in that region, particularly for the poor.</p>
<p>Availability of modern biomass fuels Time spent by households in collecting biomass fuels for cooking</p>	<p>Survey data would help to determine a suitable target of hours /day spent by poor households in collecting biomass fuels.</p>
Affordability	
<i>Indicator</i>	<i>Analysis/diagnosis</i>
<p>Connection cost Connection cost (first cost) of obtaining access to modern energy. Includes: ➤ cost of home connection for electricity ➤ cost of kerosene stove ➤ deposit for, or purchase of, smallest available LPG bottle and stove</p>	<p>If the connection cost is greater than 25 percent of monthly income, it may be necessary to take measures to make it easier to bear (see section 21.4.3). It would first be necessary to determine that supply is efficient, by benchmarking these costs against international norms. If supply costs are not efficient, measures to improve efficiency will be required (see sections 21.4.5 and 21.4.6).</p>
<p>Usage dimension Electricity and kerosene/LPG affordability ratio (the cost of using modern fuels, such as electricity, LPG, and kerosene, to meet subsistence energy needs, shown as a percentage of the average household income of the poorest, preferably by income decile Approximations for subsistence energy needs include: (1) typical bill for a low-income household and (2) the unit price for small residential consumers, multiplied by a subsistence threshold (for example, 20–30 kWh/month for electricity; 6 liters per month of kerosene)</p>	<p>If this ratio is high (for example, 10–15 percent in aggregate), there may be a case for subsidizing the use of modern fuels for the poorest households (see section 21.4.2). Supply efficiency will need to be assessed to ensure the problem is demand-side affordability and not supply-side inefficiency.</p>

The indicators proposed may be derived from information that is either readily available or that can be obtained through simple surveys. While they may sometimes lack the precision needed for detailed project-level monitoring, they can serve as reasonable proxies to help policymakers determine the extent of problems and establish priorities.

It is important to emphasize that, to refine the baselines for policy development and program monitoring, information should be collected on energy availability and consumption disaggregated by decile and by income group, for example. While such detailed data may be unavailable now, future surveys should aim to obtain them.

21.3.2 Expand access to improved energy services

Access to modern energy can be defined as a household's ability to obtain an energy service, should it decide to do so. Access is a function of availability and affordability. For energy to be considered

available to a household, the household must be within the economic connection and supply range of the energy network or supplier. Affordability refers to the ability of the household to pay the up-front connection cost (or first cost) and energy usage costs. A high up-front cost may discourage poor households from making a switch to a modern energy form.⁶

Availability and affordability are interrelated. For example, a government decision to administratively maintain energy prices below costs, with a view to making energy more affordable to the poorest households, may actually reduce its availability, as the provider may find it unprofitable to extend coverage to areas where the poor reside.

The goal of expanding access to modern energy will be met when all low-income households have a modern cooking fuel (kerosene, LPG, or electricity) to meet their needs.⁷ The “energy ladder” shown in figure 21.2 is a useful way to understand the interactions between poverty and modern energy consumption. As households ascend the ladder, increasing their consumption of modern energy, their welfare is enhanced and their income-earning potential expanded. The poorest households, which occupy the lowest rung of the ladder, generally have little or no access to modern energy services and must use traditional biomass fuels, such as firewood and dung.

The poor place a high value on modern energy services, and to the extent that it is available and affordable, are willing to pay the full cost. There are several reasons for this:

- ⊃ The convenience, time saved, health benefits, and higher efficiency⁸ make the switch worthwhile.
- ⊃ Livelihoods can be secured when energy services are used for productive activities such as small nonfarm businesses, irrigation pumping, and mechanized milling and threshing.
- ⊃ The ability of the poor to pay for energy service improves with the rise in incomes that they achieve from their consumption of energy.

It is the consumers themselves who should make the choice of which energy source and energy application best meets their needs, and a menu of energy options should be available to them. Several indicators are available to assess the availability and affordability of modern fuels to low-income households (see table 21.1).

21.3.3 Improve energy supply reliability

Reliability may be defined as the stable supply of energy services at a quality and quantity that does not impose excessive additional costs on consumers. A reliable energy supply is essential for making sustained improvements in household welfare and as an input to businesses. Reliability standards vary with use: businesses, for example, typically need higher standards of reliability than households. For a business, even a short supply interruption may create unacceptably high monetary costs and losses, such as production downtime, material waste, and lost retail sales; the same interruption may not affect households beyond causing some inconvenience.

For poor households with access to modern energy that are not yet users, chronic supply unreliability may act as a disincentive to making the investment required to transition from a traditional energy source. For example, unreliable supply might discourage poor households from purchasing a kerosene stove or paying for an electricity connection.

For households that use and rely on modern energy, supply unreliability might force them to obtain alternative supplies at higher prices, for example, from informal parallel markets.⁹ Under these circumstances, consumers that are unable to pay the higher prices could be forced to forgo consumption entirely.

For businesses, poor supply reliability directly results in (1) increased production costs for goods and services, thereby acting as a disincentive to investment; and (2) an erosion in the comparative advantage of other factors of production, such as labor and primary materials. These costs most acutely affect the poor, who suffer most from the reduced employment opportunities that would otherwise accrue from growth.

Table 21.2. Reliability Indicators

<i>Indicators</i>	<i>Analysis/diagnosis</i>
Production time lost for business and firms due to failure in energy supply. This may be defined as a percentage of total working days or hours. This information may be obtained through informal surveys of large and small businesses.	If the production time lost is more than 10 percent, it may be inferred that energy supply reliability is poor. An acceptable ratio would be less than 2 percent.
Reserve margin (the difference between installed capacity and peak demand, divided by installed capacity and multiplied by 100 to give a percentage).	A reserve margin less than 15 percent would indicate the high likelihood of supply disruptions and poor-quality supply. A reserve margin of 20–25 percent would be more acceptable. ¹⁰

A combination of the indicators shown in table 21.2 may be used to determine the extent of a country's energy reliability problem.

21.3.4 Ensure fiscal sustainability associated with energy supply and use

Fiscal instability and growing deficits contribute to higher inflation throughout an economy, often reducing the purchasing power of the poor and increasing their vulnerability. Achieving fiscal stability depends on many variables that lie outside the energy sector, but the sector is unique in the scope of its influence on the public budget through 1) its contribution to revenue through taxes and royalties;¹¹ 2) its claim on the budget to finance subsidies, debt service, and current spending; and 3) its share of government borrowing and contingent fiscal risk. How these factors are addressed in the context of an overall energy sector reform and fiscal reform program can have a large impact on macroeconomic stability.

The energy sector can make a positive contribution to fiscal sustainability and macrostability under the circumstances described below:

Direct taxes on energy enterprises and indirect taxes on energy commodities provide a net revenue contribution. Petroleum products are a good source of indirect tax revenues, contributing a significant share of revenue. High taxes are often imposed on energy products because their consumption tends to be inelastic—that is, it is less susceptible to demand changes as a consequence of price changes. Although petroleum taxes are a good revenue source, taxes on commodities such as kerosene, used predominantly by lower-income groups, can be regressive.¹² A balance must be achieved between the revenue objective and the equity of the petroleum product taxation. Subsidies, when deemed necessary, should be carefully targeted to achieve their objective and avoid excessive fiscal costs (see section 21.4.1). Differential tax rates on complementary fuels should also be avoided, as they distort consumer choice.

Taxes on fuels used by the poor should be kept at a minimum level consistent with the average indirect tax rate on goods and services. Any attempt to use high excise taxes on petroleum products with a view to maximizing revenue may hit the poor particularly hard. Although petroleum product taxes are easy to collect and are a good source of revenue, it is important that these taxes not have a regressive impact.

Large-scale energy enterprises, with their relatively stable consumer base, can be a good source of predictable direct tax revenues. This revenue base is often undermined when governments indirectly subsidize energy services by preventing these enterprises from recovering their costs. In turn, these enterprises are not liable for income taxes, depriving the exchequer of revenue. Over the long term, this practice affects the poor disproportionately, as these utilities are unable to extend services.

Royalties and rents from resource exploitation and the production of oil, gas, and hydroelectricity can be a significant source of central or local government revenues in countries endowed with such resources. Fiscal policies for resource exploitation need to consider several factors, such as optimizing the economic value of the resource through extraction rates; environmental externalities; risk–reward

Table 21.3. Fiscal Sustainability Indicators

<i>Indicator</i>	<i>Analysis/diagnosis</i>
Net indirect tax revenue on energy commodities as percentage of total revenue	
Revenue from indirect taxes on commercial energy commodities (petroleum products and electricity) net of consumer subsidies from the budget	A net indirect tax contribution in excess of 5–10 percent of total revenues should be expected. If the ratio were negative, it would indicate a fiscal crisis.
Income taxes paid by energy enterprises and utilities	
Total income taxes paid by energy utilities and enterprises. As these enterprises are easily identified, these numbers may be obtained from the income tax authorities	If all or most energy enterprises are found to have not paid income taxes over a two- to three-year timeframe, it would indicate that they are either making a loss or have special tax preferences. Both of these situations are undesirable for long-term fiscal sustainability.
Public financing of energy sector investments	
Identify public support for energy sector investments by category: <ul style="list-style-type: none"> ➤ Direct budget transfers ➤ Government domestic borrowing ➤ International borrowing (commercial and official development assistance) ➤ Government guarantees for commercial risk ➤ Government guarantees for political risk 	Public support in any of these five categories would indicate a situation that should be changed to minimize fiscal risk and fiscal burden (see chapter 6, “Public Spending”). Government borrowing for the energy sector should be minimized. The effect of guarantees on government liabilities needs to be analyzed. Since the government cannot control commercial risk, it should not guarantee commercial risk. Political risk guarantees may be appropriate in some countries.

profiles of private investors; and the local preferences of those who are directly affected by the resource exploitation.

Sector investment needs are not met through government borrowing and direct budgetary support. (As pointed out earlier, there may be a need to provide budgetary support to subsidize connection costs, including the cost of appliances—provided that the subsidies are well targeted to the poor.) Energy enterprises often require large investments in production and supply infrastructure to meet the demand of the economy, as well as the demand of poor consumers. For publicly owned enterprises, these large investment needs are sometimes financed through public borrowing or direct budget transfers from fiscal revenues. There are limits to how much public financing can be used for energy infrastructure without contributing to higher inflation and rising market interest rates, however, and direct budgetary support for the energy sector can also squeeze resources available for social investments. In lieu of these forms of public support, targeted connection and consumer subsidies can be employed and privatization pursued, under the terms of which energy supply enterprises would finance their investments from their own balance sheets.

Government revenue and policy guarantees that are contingent public liabilities and increase fiscal risk are no longer necessary. Governments may at times guarantee, implicitly or explicitly, the revenue requirements of privately owned energy projects. These guarantees are often provided because private investors are unable or unwilling to bear the underlying credit risk. While these guarantees are often needed to obtain private investment, the fiscal risk of this practice can be extremely high in the absence of fundamental sector reform and may contribute to fiscal shocks.

Table 21.3 defines a series of indicators that can be used to assess the fiscal impact of energy and to assist in developing and monitoring strategies for achieving fiscal sustainability.

21.3.5 Improve energy sector governance and regulation

Market-based mechanisms, formal oversight institutions, and processes that lead to efficient investment, production, and energy service delivery are indicators of good sector governance and regulation. Good governance and regulation are key determinants of whether the poor, in particular, and the economy, in general, receive adequate service at an acceptable price. Poor governance undermines the performance of existing sector enterprises and reduces the attractiveness for potential new entrants, affecting the poor in the following ways:

Table 21.4. Assessing Energy Sector Governance

<i>Indicator</i>	<i>Analysis</i>
Are sector entities established as commercialized corporations whose managers are subject to commercial discipline?	Creation of an independent legal corporation is often a first step in the reform process. Subjecting the entity to commercial disciplines makes it more likely that costs can be reduced and efficiency improved.
Do prices for energy services cover costs, and have large cross-subsidies between consumer classes and between regions been eliminated?	When prices cover costs (on average) and cross-subsidies between and within consumer categories are minimized, it is more likely that access and quality goals will be met.
Are new entrants permitted and/or encouraged in the delivery of energy services to consumers, both to those who already have service and to those who are in underserved areas?	The presence and encouragement of multiple service providers has two potential outcomes: (1) competitive pressures for cost efficiency and (2) the greater likelihood that energy services reach the poor.
Does the energy supply chain comprise separate functionally specialized corporations that are separately owned (for example, multiple oil product distributors and multiple generation and electricity distribution firms)?	An integrated energy supply chain, as opposed to an unbundled structure composed of multiple functionally specialized firms, tends to result in higher-cost energy supply and less responsiveness to consumer needs.
Is there a separate regulatory body that is able to authorize investments and price adjustments without political interference?	Access and service quality goals are more likely to be met if such a regulatory framework is in place.

- ⊃ A badly performing sector may lack the financial ability to expand and deliver service to poor households.
- ⊃ Inefficient enterprises have high-cost operations that price their services beyond the reach of the poor.
- ⊃ The regulations and policies that engender bad performance also protect inefficient enterprises from the competition on prices and service quality that new entrants could provide.

Deteriorating service performance may be the result of three sets of factors. First are adverse movements in exogenous factors, such as world oil prices, access to foreign loans, high domestic interest rates, and inflation. Second are inappropriate national policies on energy pricing and investment. Third are specific enterprise governance-related factors, including conflicting objectives, lack of management accountability, and autonomy. The second and third factors would indicate the need to focus on sector governance and regulatory changes.

There are many ways to address governance and regulation problems. The key elements in general comprise:

- ⊃ establishing a credible regulatory framework that is able to authorize investment and prices that are consistent with access and service quality goals;
- ⊃ initiating structural changes that subject monopolies and centralized operations to increased competition and decentralized management; and
- ⊃ increasing the business orientation of the enterprises through improved corporate governance or privatization, where feasible.

The points above suggest that there are many facets to good governance, and hence, a one-dimensional metric is generally inappropriate. Table 21.4 suggests a series of five questions that can be used to assess the quality of governance. These questions require “yes” or “no” answers; each “no” would indicate an area of existing or potential governance problems, and therefore an area for reform. The greater the number of “no” answers, the greater the potential for severe governance problems.

21.3.6 Reduce the health and environmental costs associated with energy supply and use

An overwhelming majority of the poor in developing countries depend on biomass—wood, charcoal, dung, and straw—for their energy needs. The combustion byproducts of biomass, particularly

Table 21.5. Percentage of Total Burden of Disease in DALYs*

	<i>Sub-Saharan Africa</i>	<i>Asia and Pacific</i>	<i>Middle East and North Africa</i>	<i>Latin America and Caribbean</i>	<i>Eastern Europe</i>	<i>Industrialized countries</i>	<i>All developing countries</i>
Indoor air pollution	5.5	5	1.7	0.5	0	0	4
Urban air pollution	1	2	3	3	3	1	2
Diseases related to inadequate water supply and sanitation, for comparison	10	8	8	5.5	1.5	1	7

*DALYs, or Disability-adjusted life years, are years lost to premature death and years of healthy life lost to illness or disability.

Sources: Murray and Lopez (1996), Smith (1993, 1998, and 1999), *World Development Indicators* (1999), and World Bank staff.

particulates and carbon monoxide, directly affect the health, life expectancy, and quality of life of anyone who is exposed to them at moderate or high levels. Breathing air containing suspended fine particles is a major cause of chronic and acute respiratory infections, which are among the greatest causes of death and ill health of the poor.¹³ Across all developing countries, health damage from air pollution is of comparable magnitude to that from inadequate water supply and sanitation. The effects are particularly significant in Asia and Sub-Saharan Africa (see table 21.5).

Traditional biomass can have a variety of negative health impacts (see table 21.6), especially when it is burned indoors without either a proper stove to help control the generation of smoke or a chimney to draw the smoke outside. Women and children are particularly exposed to the effects of indoor air pollution, as it is they who tend to cooking fires. The use of biomass may also promote higher spending on medical care and may diminish the ability of people living in poverty to work productively. These effects are reinforced to the extent that users of biomass are less likely to boil the water they drink, for reasons of cost or custom. Insofar as the use of biomass in urban areas promotes deforestation, reliance on biomass may also tend to increase its future cost, further diminishing the living standards of people living in poverty. The World Health Organization (1997) estimates that 2.8 million people die each year as a result of indoor air pollution. In India, data from 1992–93 indicates that the risk of mortality increases with the use of solid or biomass cooking fuel by 30–35 percent in rural households and 15–20 percent in urban households.¹⁴

Table 21.6. Health Effects of Biomass Fuel Use in Cooking

<i>Processes</i>	<i>Potential Health Hazards</i>
Production	
‡ Processing/preparing dung cakes	Fecal/oral/enteric infections; skin infections
‡ Charcoal production	Carbon monoxide (CO)/smoke poisoning; burns/trauma; cataracts
Collection	
‡ Gathering/carrying fuelwood	Reduced infant and child care; bites from venomous reptiles/insects; allergic reactions; fungus infections; severe fatigue; muscular pain/back pain; arthritis
Combustion	
‡ Effects of smoke	Conjunctivitis; upper respiratory irritation and inflammation,
‡ Effects of toxic gases (CO)	Acute poisoning
‡ Effects of chronic smoke inhalation	Chronic obstructive pulmonary disease (COPD); chronic bronchitis; adverse reproductive outcomes; lung cancer
‡ Effects of heat	Burns; cataracts
‡ Ergonomic effects of crouching over stove	Arthritis
‡ Effects of location of stove (on floor)	Burns in infants and toddlers

Source: Goldemberg and Johansson (1995).

In cities, the burning of solid and liquid fuels causes smoke, particulate emissions, smog, and acidic precipitation. Sources of air pollution are transport, power and heat generation, and industrial and commercial activities. Among the worst pollutants in terms of their detrimental health effects are fine particulates and lead.

Interventions to reduce air pollution can be extremely cost-effective in their benefits to public health, and many also have a private benefit for which people are willing to pay. They can therefore sometimes be justified on economic criteria alone. The cost-effectiveness of antipollution measures is highly variable, however, particularly for interventions aimed at reducing urban air pollution.

Natural resource development (hydropower, oil, and gas) can have large environmental and social impacts. Safeguards must be established for these and compliance monitored.¹⁵

21.4 Policy and Program Interventions


This section provides guidance in assessing and designing specific policy and program interventions to advance energy development goals. Figure 21.3 maps the potential impact of a menu of feasible policy and program interventions on the development goals.

21.4.1 Subsidy targeting and delivery mechanisms

Final consumer prices influence consumer behavior at all stages of the energy transition. Energy prices are used as instruments of government policy to meet particular social objectives, specifically through price subsidies to poor households. While some form of subsidy to assist lower-income households in meeting their subsistence needs is often useful, these subsidy programs should be designed in a way that minimizes pricing distortions.

Figure 21.3. Impact Mapping of Policies and Programs against Development Goals

Policies and programs	Energy development goals				
	Expand access to modern energy	Improve energy supply	Ensure fiscal sustainability	Improve governance and regulation	Reduce health and environmental costs
Subsidy targeting and delivery mechanisms					
Easing first cost constraints					
Encouraging community participation					
Reform of energy markets					
Private participation in energy services					
Electrification programs					
Natural gas use					
Natural resource exploitation and management					
Mitigating health effects of biomass use					



Subsidies are almost universal in the energy sector at all stages of economic development and transition. It should be borne in mind that the costs of adjustment in moving to a reformed, private sector-operated energy sector with economic regulation can be high, and that much of this burden will fall on poor people;¹⁶ to be poverty-sensitive, any such adjustment should therefore include a safety net. While subsidy mechanisms are useful—and can be indispensable—in addressing the needs of the poor, poorly designed mechanisms often do not benefit the groups for whom they are intended. It is important to ensure that subsidies foster markets rather than destroy them.

A few principles to be considered in establishing energy pricing policy are noted below.

- ⊃ As much as possible, energy prices should reflect the full costs of supply. If subsidies are needed, they should ensure that service providers have a financial incentive to meet the demand of subsidized consumers. When a cross-subsidy mechanism is used between categories of users, it will also create a disincentive to serve those who do not pay full costs. Furthermore, cross-subsidies rest on monopolistic supply arrangements and therefore preclude the innovation and competition in service provision that potentially could serve the poor with better access (see section 21.4.5).
- ⊃ Although energy pricing mechanisms should in principle seek to internalize the costs of pollution that result from energy use, these environmental taxes should not make the energy on which the poor rely unaffordable. For example, a tax on commercially available charcoal, coal briquettes, or kerosene may be largely borne by the poor.
- ⊃ Subsidies should be designed in such a way as to reinforce the commercial orientation toward reducing costs and improving service.¹⁷ In most cases this will mean focusing on reducing the cost of the initial investment, thereby increasing the numbers of people who have access to the energy service, rather than continuously subsidizing the recurrent cost of operation.¹⁸

Subsidies may be used (1) to assist poor households in obtaining or affording a minimum level of service (that is, in the form of a consumer, or consumption, subsidy, such as a low charge for very low levels of household electricity consumption) or (2) to cover wholly or in part the cost of connecting the poor (that is, a capital subsidy or first-cost subsidy). The financial resources needed for the subsidy may be provided directly, from outside the industry, typically from an earmarked revenue source or general public expenditure, or through cross-subsidies, wherein one group of consumers is charged a price that is below costs and the shortfall is financed from other consumers. Six subsidy evaluation criteria¹⁹ and six possible subsidy mechanisms are discussed below, and a summary is provided in table 21.7. Countries should perform a similar evaluation to determine the appropriate subsidy mechanism in their context.

Table 21.7. Evaluation of Subsidy Mechanisms

	<i>General price subsidies</i>	<i>Lifeline tariffs</i>	<i>Merit-based price discounts</i>	<i>Burden limit</i>	<i>Cash transfers</i>	<i>Noncollection</i>
Coverage of the poor	3	3	1	1	3	2
Targeting the poor	1	1	2	2	2	2
Predictability to the poor	3	3	3	2	2	1
Pricing distortions minimized	1	2	2	2	4	1
Administrative ease	3	3	1	1	1	4

Scoring: 4 – Excellent; 3 – Good; 2 – Marginal; 1 – Poor

Subsidy evaluation criteria

- ⊃ **Coverage.** The extent to which the poor are being reached. Obviously, if the poor are not using the subsidized service, coverage is inadequate.
- ⊃ **Targeting.** The share of the subsidy that goes to the poor. If a large share of the subsidized energy product is actually consumed by the middle class and the rich, targeting is inadequate.
- ⊃ **Predictability.** The extent to which the poor can count on the subsidy each month.
- ⊃ **Distortion.** The extent of pricing distortions and unintended side effects. Subsidies may exacerbate supply bottlenecks and create disincentives for private businesses to deliver energy services to poor consumers. For example, subsidizing kerosene may prevent consumers from switching to nonsubsidized LPG, or may encourage the diversion of kerosene supplies to other market uses, such as transportation. In another example, electricity subsidies for agricultural users in India have led to the illegal use of subsidized electricity for nonagricultural use, such as small industries. The objective is to minimize distortion.
- ⊃ **Cost-effectiveness.** Direct or indirect cost of the subsidy. The objective should be to minimize costs. High costs of providing the subsidy may place a direct burden on the budget, and although a cross-subsidy may minimize cost, it would increase the distortions and create disincentives to supply.
- ⊃ **Administrative cost.** The goal should be simplicity and ease of administration, and should seek to eliminate the potential for graft, corruption, and rent-seeking behavior.

Subsidy mechanisms

- ⊃ **General price subsidies.** Keeping electricity utility prices and the prices of kerosene, diesel, and LPG below costs for all residential consumers is a widely used and easily administered subsidy mechanism, and the predictability of the benefit received is fairly high for the poor who have the subsidized service. The coverage of this subsidy can be high for a network service (for example, electricity), however, and it is not well targeted. Across-the-board subsidies can also place a heavy burden on the budget and can create a distorted price regime, resulting in wasteful consumption practices among households.
- ⊃ **Lifeline subsidies.** These subsidies to electricity are restricted to an initial block of consumption, perhaps equivalent to a basic need level. The coverage of this mechanism is equal to the share of connected households among the poor. Since consumption grows with income, the targeting improves as the size of the initial block decreases. Depending on the size and the source of the price subsidy, lifeline tariffs can place a significant burden on the budget, on the finances of the utility, or on other consumers. There are several design innovations—two-block lifeline, floating blocks—that should be investigated to improve targeting and predictability, as well as to minimize the financing burden.
- ⊃ **Merit-based price discounts.** These may be provided based on some normative measure of poverty, for example, reduced prices to those living in slums and public housing. These subsidies are difficult to target well and can be very distorting. A cap placed on the volume of discounted consumption, like a lifeline subsidy, can minimize the impact of price distortion, particularly if the cap is set below the typical consumption level. However, establishing these normative poverty measures and administering them can be expensive.
- ⊃ **Burden limit.** Here the total payment for service is limited, based on an income test or similar measure of energy spending as a share of household income. This mechanism has low coverage of the poor and is not well targeted, because of a weak correlation between per capita household income and the share of household income that goes to energy spending. The burden limit mechanism is probably the most distortionary of utility subsidy mechanisms, although the distortionary effect is confined to those households that receive support—in contrast to the distortions created by an across-the-board subsidy, which affect every consumer. Placing a cap on per capita or total household consumption of utility services that counts toward the burden limit, or using consumption norms to fix the level of utility expenditures for the purpose of subsidy can significantly

reduce the distortionary effect. Burden limits can be quite costly for the budget, particularly if the limit is set low.

- ⊃ *Noncollection* refers to nonenforcement of disconnection for unpaid bills, allowing illegal connections to continue. This occurs when governments pressure utilities not to disconnect households that do not pay their bills. Coverage of this mechanism is low. There are significant pricing distortions associated with this scheme, since the effective price of the utility service is below cost for many consumers even if the notional price is set properly, resulting in inefficient consumption.
- ⊃ *Cash transfers and general cash benefits targeting poor households*. The coverage of this subsidy is the only one discussed here that is not subject to the constraint of the share of the poor connected to services and products. This mechanism is the least distortionary because households can spend the cash support as they wish. While it can involve significant fiscal cost, there is no direct financial burden for utilities or other consumers.

21.4.2 Easing first-cost constraints

Two fundamental elements of energy pricing influence a poor household's decision to obtain and use a particular energy service. The first is the up-front connection and equipment cost of using the energy service, for example, the cost of grid connection and home wiring or of a kerosene/LPG stove, and the service deposit. The second is the per unit price of using the service; that is, the electricity price per kilowatt-hour or cost of kerosene per liter. Poorer people often pay more per unit of energy used simply because they cannot cover the initial capital costs of obtaining the energy supply (and/or the necessary conversion equipment).

High first costs significantly constrain the ability of the poor to shift to modern energy services. For example, the cost of connecting to the electricity grid can range from the equivalent of US\$20 to more than US\$1,000, depending on proximity to the existing network. Even at the lower end of the range, this cost can be prohibitive to low-income households. The investment in a kerosene/LPG stove may cost the equivalent of a few month's wages for the poorest households, while the cost of a solar home system may be more than US\$200—once again, a large multiple of the monthly income of the poorest. Two methods to ease these first-cost barriers—utility credit and microfinance—are discussed below.

Lowering system costs through more appropriate design standards

Design standards—capacity, size, and robustness—are sometimes higher than are strictly needed to provide the poor with a basic level of service. For electricity access, many electricity distribution systems require household connections to be sized for 3 kilowatts to 7 kilowatts of service, when a rural poor household might require only between 0.2 kilowatts and 0.5 kilowatts of service. This overdesign requires heavier wires, larger transformers, and more sophisticated controls, all of which are more expensive. The entire system design could be lightened to provide service at less cost. Although many low-cost designs may imply increased maintenance costs and lower reliability and are therefore resisted by utility service providers, there are ways to transfer some of the maintenance tasks to consumers.

Inappropriateness in design and sizing is also present in off-the-shelf household systems. For example, photovoltaic (solar) panels are typically available in 50 peak-watt configurations, but the average poor household requires and can afford only a 12- to 25-peak watt system; and LPG cylinders are commonly available in 15-liter or larger sizes when the poor could better afford smaller bottled quantities.

Providing consumer credit and connection subsidies

The indivisibility or “lumpiness” of many energy systems means that the initial cost for improved energy services may often be a multiple of a poor household's monthly income. There is clearly a need to break these payments into smaller installments and spread them over a reasonable timeframe. This may be achieved through means described below:

- **Utility credit.** Electric companies could allow customers to pay connection costs over several monthly payments on their electricity bills. By charging interest to the consumer, the utility can make a profit on this activity, provided they are able to cut off the consumer for nonpayment. This provides the utilities with an effective form of collateral. A public electric company in Bolivia doubled its customers in several villages after offering to finance connection charges over a five-year period.
- **Microfinance.** Providing consumer credit through microfinance institutions (MFIs) may sometimes be a feasible way of easing first-cost barriers. These institutions offer standardized small loans to individual households or groups, often targeting women within the poorest households. Unlike traditional financial institutions, they can be more flexible with collateral policies—some MFIs have actually been successful in offering credit to communities for rural electrification (see box 21.3). An additional benefit of this approach is that it is consumer-led, which makes it more likely that an affordable solution will be identified. A drawback of the approach, however, is that most microfinance institutions have found it difficult to refinance themselves through commercial sources, and remain dependent on the extension of donor and government loans.

Providing subsidies for technical assistance

It is also important to consider ways in which the costs of a particular energy development can be reduced, and not just be a subsidy to the providers of finance. Providing subsidized assistance for the training of equipment manufacturers or for independent on-site feasibility studies appears to be particularly effective in reducing costs to the user, and in reducing the risks to the investor.

21.4.3 Encouraging community participation

Most energy supply systems benefit from economies of scale (that is, the unit price falls as the size of the conversion technology increases). This means that joint or community decisions are often required to ensure that sufficient numbers of consumers are involved from the outset.

Community or locally based approaches in project selection and project management are essential for the success of energy supply options located in the niche between the two extremes of small systems for individual consumers and large network schemes that cover wide areas. Community programs are relevant in the following contexts:

- **Choice of energy service.** Decentralization of decisionmaking to local communities is essential if they are to signal their energy service needs. Poor communities must usually choose between different supply options but also between different community-based rural infrastructure interventions, such as health and maternity posts, schools, water supply and sanitation, culverts, and energy supply. Furthermore, they must decide on the scope, mix, and sequencing of these investments. Empowering local communities to assume the responsibility of making these choices can reveal their willingness to pay as well as the quality of services they require (see box 21.4).

Box 21.3. Delivering Connection Subsidies in Guatemala

Genesis Empresarial (GE) was established in 1988 to improve living conditions for low-income communities in Guatemala. GE has an extensive branch network and is the largest provider of microcredit in Guatemala, offering financial products such as microenterprise loans to individuals and groups, and infrastructure loans to rural communities. It also provides technical assistance and training to borrowers, where required.

The infrastructure loans are designed primarily to meet the needs of Guatemala's rural electrification program, whereby rural communities initiate electrification projects and must contribute to the project costs to qualify for public subsidies. All members of the community must contribute equally toward these costs if they are to receive an electricity connection. GE provides loans to groups of poorer households to provide them with the needed funds. All group members are jointly liable for all loan repayments, which helps to ensure a high repayment rate: less than 8 percent of loans are nonperforming. The loan amounts are for up to US\$450 per household and for terms of up to four years, depending on the repayment capacity of the household. GE normally makes a number of group loans in each community, with households grouped by incomes such that all households in a group have the same repayment terms. Local commercial banks are used for handling disbursements and repayments, and interest rates are 21 percent to 30 percent.

GE began offering community electrification loans in 1993, and in its first five years disbursed almost 1,000 group loans, with a value of approximately US\$35 million, to 8,700 families in almost 200 communities.

Source: Ruster (1999).

Box 21.4. People Power: The Village of Pura, India

In the village of Pura, household electricity and water supplies, driven by large community biogas digesters, are administered by local people. Initial attempts to promote community biogas systems in the village failed because they sought to substitute biogas for wood as a cooking fuel. Abundant wood resources in Pura make fuelwood collection relatively easy, and villagers therefore had no incentive to maintain a biogas system. Subsequent discussions with villagers indicated that they were more interested in obtaining clean and reliable water supplies near their homes. Because grid electricity supply was unreliable, the community decided to establish a system that employed a biogas-powered diesel engine to drive an electricity generator. Electricity from the generator was supplied through a microgrid to households and also powered a deep tubewell pump that supplied water to a local system. Each household participating in the program received a tap with clean water at the front of the house, thereby eliminating long walks to the local tank and significantly improving health. Each household is charged a fixed rate for the water tap and each electricity connection.

Source: Reddy, Williams, and Johansson (1997).

- **Community-based management.** Cooperatives and community groups can support the delivery of energy services to the poor; community management of billing and collection can improve payment discipline; and using local labor to provide maintenance services can increase local employment, encourage local entrepreneurship, and reduce costs. These factors can be extremely important in increasing access and improving affordability of energy services.

In practice, while it is often important to have community ownership of an energy asset, it is also important that the management of these assets is performed in a businesslike way. This usually requires that the day-to-day operation of community energy services be insulated from political interference; that the rules of operation (including criteria for adding new customers) are transparent and known in advance; and that prices cover not only the cost of operation and maintenance, but also contribute to a fund to pay for future capital replacement.

Community-based development cannot assume the entire burden of rural energy infrastructure development—for example, a regional petroleum distribution system or a regional electrification program cannot be managed by local communities. However, the participation of local communities in planning these regional networks can benefit their design.

21.4.4 Reform of energy markets

No single service provider, public or private, can deliver the entire range of energy services necessary to meet the varied needs of rural and urban businesses and high- and low-income households. Public, private, and community-based service providers are required to effectively meet the needs of the poor. This diversity normally leads to complementary services being delivered and fosters competition to drive down supply costs, both of which benefit the poor.

Often the poor cannot access modern energy, not because the demand is lacking, but because of supply-side problems—specifically, because unresponsive public and private monopolies deny them access. Recent experience in the industrialized countries, and increasingly in developing countries, shows that energy supply through networks can be competitive. Competition creates incentives to expand services and cut costs, both on and off the networks; it also takes advantage of emerging technologies that have the potential to economically provide the electricity requirements for isolated small loads. Technology has also profoundly changed the options for managing the transmission of power and gas across grids, increasing consumers' chances of gaining access to cheaper, more reliable energy.

Reform of energy markets should include the following goals:

- Opening up electricity generation and distribution to multiple competing providers.
- Opening up petroleum product import and distribution to multiple competing providers, with common access to terminals and pipeline networks.
- Allowing small businesses and community groups to provide commercial energy services to rural and poor area, including installation, operation, and management of small distribution grids; billing, collection, and other consumer service functions; distribution of petroleum products and LPG; manufacture of improved cooking stoves; and supply of fuelwood and charcoal.

- ⊃ Regulations that either accord exclusive supply rights to a single corporation or to a limited number of public or private-sector corporations.
- ⊃ Price-setting practices that neither consistently cover costs nor provide an acceptable risk-adjusted return to investors and operators, thereby creating a disincentive to engage in the energy service business.
- ⊃ Demand profiles and intensity in the unserved and underserved areas that are not attractive for private providers.

Regulation of energy markets

Transparent, credible, and consistent regulation of the monopolistic elements of the energy sector and overall service quality are necessary conditions for effective service delivery. International experience of the implementation of good regulatory institutions and processes is increasingly well documented.

General principles that should be considered are:

- ⊃ *Encouraging nonexclusivity in the licensing of energy service companies.* While competition for consumers of electricity and gas network services in areas already served may not be initially feasible, nonexclusivity should be ensured for the petroleum fuel and LPG distribution businesses.
- ⊃ *Allowing competition for the right to serve in unserved regions.* Some form of incentive—for example, capital cost subsidy or tax incentives—may be required to attract service providers to make the investments to serve rural poor consumers in areas of low consumer density and demand. If these subsidies or incentives are economically justified, it is preferred that they be provided competitively.
- ⊃ *Regulations on service quality standards to low-income households need to avoid overspecification,* which may retard service provision (see section 21.4.2).
- ⊃ *Participation of local communities.* Low-income consumers, through community organizations, should be able to participate in the monitoring of small-scale service providers and retailers at the local level (see section 21.4.3).

21.4.5 Private participation in the energy sector

Restructuring and regulation of energy utilities has to be carefully designed so that the poor benefit and are not disadvantaged, as can happen if service is withdrawn because of their inability to pay the unsubsidized prices of the private supplier.

Private participation in ownership and/or operation of energy sector entities can have positive short-term and long-term impacts on the poor, described below:

- ⊃ Private owners and operators can improve the operating efficiency of the energy production, transport, and supply chain, thereby reducing the cost of providing the service. Effective regulation will be needed to ensure that cost reductions are passed on to consumers.
- ⊃ Private ownership will require cost-covering tariffs. If tariffs are initially below cost, they will need to rise, to the short-term detriment of all consumers. In the medium term, such changes will generate the funds needed to pay for enhanced investment and maintenance, and hence, should result in improved services for all.
- ⊃ Private operators have been found to be more responsive than parastatals to service delivery obligations and consumer needs.
- ⊃ Private operators will have incentives to contain their costs by reducing “nontechnical” losses (that is, theft).
- ⊃ Private operators will typically be able to obtain large-scale injections of capital and, if the regulatory environment is stable, have the ability to make the best use of that capital.²⁰ This will allow systems to be expanded and should minimize supply shortages.

- 3 Private ownership may sometimes lead to a short-term decrease in employment in the affected industry, but the resulting improvement in service reliability or cost should lead to longer-term increases in the job creation that accompanies growth.
- 3 The scale and distribution of benefits of privatization will depend on the form of privatization chosen. A variety of mechanisms can be employed to involve the private sector in the energy sector (see table 21.8). For example, in a management contract the private operator may be paid a flat fee to improve enterprise management. The incentive under the terms of such a contract to increase sales or to improve billing and collection is weaker than with a lease, however, which allows the operator to keep the collected revenues and pay a lease fee to the government. A concession with investment obligations, a BOT (build, operate, and transfer) scheme, or a divestiture would make the private operator responsible for deciding upon investments, delivering stronger incentives than would a lease to minimize the costs of the capital investment that is a crucial determinant of the final price of infrastructure services.

21.4.6 Electrification programs

Electrification profoundly affects village life, bringing a strong sense of modernity, of a connection to the world beyond the village, and expectations for a better future.

About 1.6 billion people in developing countries do not consume any electricity at all. Although the electrification rate in some developing countries is high—for example, Sri Lanka (75 percent), the Philippines (78 percent), Indonesia (80 percent), Tunisia (95 percent), and China (97 percent)—in some Sub-Saharan countries it is as low as 5 percent. The evidence from countries that have completed electrification or that continue to implement electrification suggests the following:

- 3 Allowing for nonexclusivity in supply is critical. In China, Bangladesh, the United States, and the Philippines, it is decentralized suppliers, such as rural cooperative societies, rather than the national or regional utilities, that have been instrumental in bringing electricity supply to rural areas.
- 3 Electrifying each household is not economic where people are so poor that they cannot afford the cost of electricity even when the first-cost barriers are removed.²¹ Electrifying the village would benefit these households indirectly through access to improved community services, such as health centers, and to publicly accessible radios and televisions. They could also benefit from the general rise in rural incomes achieved from the increase in farm and nonfarm employment resulting from the productive use of electricity.
- 3 More and more evidence suggests that even poor consumers will pay high unit prices to gain access to electricity. One type of evidence is provided by data on the widespread use of 12-volt car batteries for lighting, radio, and television where alternative sources of electricity are unavailable.²²

Table 21.8. Privatization Options

<i>Option</i>	<i>Asset ownership</i>	<i>Operations and maintenance</i>	<i>Capital investment</i>	<i>Commercial risk</i>	<i>Typical duration (years)</i>
Service contract	Public	Shared	Public	Public	1–2
Management contract	Public	Private	Public	Public	3–5
Lease	Public	Private	Public	Shared	8–15
Concession	Public	Private	Private	Private	25–30
Build, operate, transfer (BOT)	Shared	Private	Private	Private	20–30
Divestiture	Private	Private	Private	Private	30+

Source: World Bank staff.

Broadly, there are two electricity delivery mechanisms, grid extension and off-grid supply. These can be characterized as follows:

Grid extension programs

Grid extension is likely to be the least-cost option in most areas and will usually produce the lowest-cost electricity supply per unit of capital employed. When a grid extension program is justified, the following principles merit consideration:

- ⊃ Ensure the principal focus of the grid extension program is to build a consumer base with the potential for increasing demand.
- ⊃ Set tariffs high enough to avoid the need for ongoing operating subsidies. Tariffs should cover, at a minimum, the full cost of generation, transmission, and distribution, plus operating and maintenance costs.
- ⊃ Limit subsidies to a portion of the distribution system's initial capital investment costs that can be controlled by the funds available at the time of the investment.
- ⊃ Low lifeline tariffs are an exception to the rule above, justified on income distribution grounds, but they should cover only a small block of electricity related to a minimum use level.
- ⊃ All consumption should be metered.
- ⊃ Utilities should maintain separate financial accounts for rural electrification so that financing, real costs, and monetary implications can be identified and analyzed.

Off-grid electrification

Extending a centralized grid can be unprofitable for electric utilities where the distance to the consumer from the distribution center is high, where the density of demand is low (because households are dispersed), or where consumption per household is low. In such circumstances, it may be possible to provide off-grid electricity service to the unserved faster than via grid extension.

Off-grid electrification is based on distributed generation solutions such as stand-alone photovoltaic systems, battery charging stations, minigrids powered by sun or wind, and isolated systems based on diesel, hydropower, or biomass. Privately led off-grid electrification can be a viable alternative to grid electrification.

The key driver of improved access to off-grid electricity services has been an emphasis on decentralized approaches with local participation (see box 21.5).

21.4.7 Natural gas use

For countries with potentially easy and low-cost access to natural gas, its availability and premium qualities may make it an attractive alternative to traditional fuels and to oil in nonpremium uses. Increasing the availability of natural gas²³ (methane) can bring to the poor many of the direct benefits of the lower cost and higher environmental quality associated with oil products.

For the poorest, the indirect benefits of natural gas development are likely to be substantial. These include the positive impact on economic growth that the availability of natural gas could bring. In particular, natural gas development and supply would be a powerful impetus for more electricity generation and for industrial and commercial development, including the development of industries such as glass and brick manufacture and of bakeries and food service establishments. It also may be associated with additional macroeconomic fiscal benefits available from local gas production (see section 21.4.8).

Given the nature of the industry—for example, the “natural monopoly” nature of gas pipelines—the need for effective regulation and the difficulty of ensuring competition are greater than for oil products. Issues of regulation and subsidies are discussed in sections 21.4.2 and 21.4.5. Specific natural gas policies that should be priorities for governments are:

Box 21.5. Approaches to Rural Electrification

Rural electrification (RE) helps reduce rural poverty only through supporting a general rise in rural income obtained by productive use of the electricity supplied. With the exception of irrigation pumping, these productive uses of electricity appear to come about only when other factors are already raising rural and national per capital income, as has been the case, most notably, in Malaysia and Thailand.

One of the most persistent claims for RE is that it can induce industrial growth in otherwise lagging low-income rural economies. The evidence from developing countries does not support this claim; RE has not, by itself, triggered industrial growth or regional development. In certain circumstances, however, it has supported growth led by a dynamic agricultural sector. The study* found that where other prerequisites of sustained development were absent, demand for electricity for productive uses did not grow. (An important exception is demand for electricity for water pumping, to expand irrigated farming.) Without agricultural growth, the use of electricity in rural areas has remained low, and many of the expected economic benefits of electrification have not been realized. [The World Bank Operation Evaluation Department's] findings support those of the Bank's 1975 Rural Electrification Policy Paper: investment in RE is economically justified only when the emerging uses of electricity are strong enough to ensure sufficient growth in demand to produce a reasonable economic rate of return on the investment.

Although RE in Asia may not have been an engine for economic growth, it has provided significant benefits. Many of these benefits have been underestimated, for the following reasons:

- 3 Where tariffs are far below economic costs and demand is constrained by nonprice factors, conventional rules of thumb for establishing the demand curve often underestimate the benefits that consumers derive from electricity. The most common error is to assume that the observed consumption level represents a point on the demand curve, when in fact it may be far below the demand curve because consumption is being held down by inadequate supply.
- 3 The economic benefits of electricity may be difficult to measure on the basis of the cost of substitutes. For instance, because electric lighting provides an order of magnitude improvement over lighting from candles and kerosene, electric light is much more than a simple replacement for kerosene.
- 3 Even if a substitute is deemed to exist for electricity (as with the use of diesel pumps in irrigation, for example), microeconomic rate-of-return calculations may be flawed for two reasons. First, observed consumer behavior and underlying prices are often distorted by taxes, subsidies, and lack of information about access to rural credit. Second, assumptions about RE and its substitutes that may be valid for a small project, taken in isolation, do not necessarily apply to a massive RE program; on that scale, diesel fuel may not be available, and prices and benefits may differ.
- 3 When this happens, RE may be in a unique position to promote a paradigm shift in agricultural production, by making possible irrigation and associated modern technology and practices. This occurred in the Indo-Gangetic plain of the Indian subcontinent and in some areas of China. Project analyses have failed to evaluate the alternatives and to account for the indirect benefits of national and regional food security and the accompanying low and stable food prices that may flow from RE.

All the evidence to date, including that from Bank-financed RE projects in Asia, shows that RE does not directly reduce poverty by helping the poorest rural people. Most of the direct benefits from rural electricity go to wealthier people. Even when tariffs are low, potential consumers cannot always afford the initial connection and household wiring. Once connected, the amount of electricity consumed, and therefore the benefits obtained, depends on the ability to buy electrical equipment, whether light fixtures, televisions, fans, water pumps, or motor-driven machines. Evidence from Indonesia suggests that the poorest 25–50 percent of the population could not afford electricity, even if connections were to be financed through power company loans. Direct observation tends to support this supposition for most countries with per capita rural incomes of less than US\$200 a year.

The justification for investing in and subsidizing RE programs therefore needs to be based on their ability, after a start-up phase, to elicit a sufficient level of consumption at an economic price. All proposed projects should therefore provide estimates of expected consumption growth.

Although most RE schemes in Asia have generated substantial economic benefits, they have had a dismal cost recovery record, even without taking account of peak load generation costs. While the capital and operating costs of generation, transmission, and distribution are significantly higher for rural communities than they are for urban communities, rural tariffs have been at best equal to, and in many cases much lower than, urban tariffs. Only 10 percent to 50 percent of the economic cost is generally recovered. Thus RE has usually been highly subsidized, either indirectly by urban industrial users, or directly by government allocations.

* Extracted from "Rural Electrification: A Hard Look at Costs and Benefits," World Bank (1995).

- 3 Pricing gas in a way that reflects the cost of alternative fuels or of the long-term economic costs of gas production and distribution.
- 3 Establishing fiscal regimes (see section 21.4.8) and credible regulatory frameworks (section 21.4.4) that encourage the private sector development of gas production and distribution.
- 3 Encouraging technological innovations that reduce the costs of connecting remote communities to gas services. There is a growing fund of international experience in the development of small-scale systems that apply low-cost approaches, such as the use of special plastic pipes and small generators, to distribute gas from stranded gas resources or from nearby large-scale trunk lines. These developments offer remote communities the chance of accessing a premium fuel directly or

through small-scale electricity generation. Governments should be alert to the opportunities for such small-scale gas operations and should ensure that fiscal and other regulations, especially electricity monopolies, do not discourage them.

- ⊃ Integrating natural gas networks into urban planning. In some cases, the poor can benefit from natural gas if its distribution forms a part of urban planning for new, low-cost housing and urban renewal. Retrofitting houses with gas pipelines and meters is usually not justified where unit consumption is low, but incorporating natural gas lines and meter points into low-cost housing at the time of construction greatly reduces the capital cost of supply. These types of policies need to be enforced when appropriate through building codes.

21.4.8 Natural resource exploitation and management

Exploiting and managing natural resources such as oil, gas, and hydropower can provide a significant revenue source for government (and increasingly for local governments), and can offer opportunities for poverty reduction. In countries that have potentially significant oil, gas, and hydropower resources, the success of government poverty reduction strategies may even be dominated by the success of policies to develop and manage those resources.

The development of local resources can generate substantial fiscal rents that can be used for public spending in support of poverty reduction. In the case of a few emerging market economies, the scale of these potential rents is extremely large relative to the size of the local economy, and they can provide a very significant boost for development. However, even when resource exploitation is successful and profitable, natural resource development requires appropriate macroeconomic and social policies if it is to lead to poverty reduction. Some substantial oil exporters, for example, have a greater incidence of poverty after years of oil and gas development than before their first oil production. Economic growth led by resource development also can create substantial increases in income inequalities, between different economic groups and between the resource-rich and resource-poor regions of a country.

The impact on poverty alleviation, positive or negative, of the development of oil and gas resources depends primarily on government policy and actions in two key areas:

- ⊃ At the national level, where the management of a country's resources—from the form and pace of development to the design of fiscal terms and the use of the tax revenues generated—will be crucial in ensuring that the benefits of production of a nonrenewable resource are translated into sustainable economic development.
- ⊃ At the local level, where an appropriate framework and mode of development will need to be established to ensure that local people do not bear the excessive costs of disruption and development without receiving any of the benefits.

In terms of the overall national management of resource development, the key areas for policy development are as described below:

Ensuring development is effective

- ⊃ The strategy for development should plan a program that will ensure that the pace of development matches the resource base and the capacity of the country to absorb and mobilize its resources and investment.
- ⊃ Attention must be given to the issue of private versus public development; in particular, to the mix of private investment with public regulation.
- ⊃ Attention must also be paid to the role of national oil companies; in particular, to the need to separate commercial operation from government responsibilities.
- ⊃ Tried and tested devices, such as bidding rounds and specialist oil and gas taxation methods that attract investors but which also ensure that the net benefit of resource development is optimized for the country, should be used in the process of granting access to oil and gas resources and of dividing the risks and rewards between investors and country.

- ⊃ Environmental and other regulations must be considered; for example, to mandate an approach to gas flaring and to regulate the use of gas found in exploration.
- ⊃ Policies should be designed to encourage local content and ancillary development that can encourage the development of local industry and services and broaden the impact of development.

Effective use of the resources generated by development

A long-term plan for spending revenues should be developed, to address:

- ⊃ Funds for future generations, recognizing that in some cases there may be a need to preserve directly some of the financial benefits of the development of a depletable resource for future generations.
- ⊃ Consumption versus investment; that is, to decide on broad policy allocations of revenues between consumption and investment (physical and human).

Shorter-term stabilization policies should also be developed, to address:

- ⊃ Macroeconomic problems. For example, a surge in revenues sold in the foreign exchange market can cause the foreign exchange rate to appreciate; that, in turn, can cause exports of nonresource tradables to decline (the Dutch Disease phenomenon).
- ⊃ The establishment of stabilization funds; that is, setting in place automatic mechanisms designed to manage short-term fluctuations in fiscal and export revenues from volatile commodity prices.

At the local level, the issues are more specific, although local communities will also be affected by national policy decisions.

Resource rent-sharing policies

Most countries see natural resources as belonging to the country as a whole, although this will depend on local law and customs. Experience generally indicates that local communities that are closest to the development and which may think of the resource as theirs need to be involved in development and should in some way share directly in the fiscal or fuel supply benefits.

Managing environmental and community issues

Much resource development takes place in remote areas. As well as offering benefits, for example, in the form of jobs and services to remote poor communities, development can also have negative impacts. Good environmental and social practice are essential to ensure that local communities are not harmed by development. This is particularly true where sensitive environments and isolated indigenous peoples are concerned. There is growing awareness of these issues, and policymakers should take advantage of the emerging body of experience and best practice in this respect.²⁴

21.4.9 Mitigating health effects of biomass energy

The burning of biomass as a cooking fuel causes pollution that is detrimental to people's health. Interventions to reduce this air pollution can be extremely cost-effective in their benefits to public health, and compare favorably with other public health measures such as vaccination. Many of the possible interventions also have a private benefit for which people are willing to pay and therefore can sometimes be justified on economic criteria alone.

In the long run, it is those policies that are designed to expand access to modern energy that will have the most impact on reducing the harmful effects of biomass use.

Policies that directly target biomass use include:

- ⊃ Policies that promote the use of better stoves that have greater combustion efficiency. Introducing chimneys to expel the smoke from indoors.

- ⊃ Encouraging sustainable management of biomass fuels such as wood. The management and use of fuelwood resources should be transferred as much as possible to local communities: the transfer of ownership and land title of forest areas to local communities can help to ensure the sustainable use of these resources.
- ⊃ Processing biomass and coal to make them cleaner; for example, converting them to charcoal and biogas or smokeless coal and coal gas. In general, the environmental pollution from the final use of processed solid fuel is less than from the raw forms. New sources of pollution are created by processing—for example, at the kiln—but these would not affect the poor as much as the direct combustion of raw biomass or coal.

Notes

1. An analysis (Hoque 1998) of the link between electrification and fertility in Bangladesh shows that the fertility rate among girls between the ages of 10 and 19 is 0.67 in electrified households and 1.17 in nonelectrified households.
2. See also Energia (International Network on Women and Sustainable Energy), and “Gender Perspectives on Energy for CSD-9,” a draft position paper including recommendations proposed by the ENERGIA Support Group and the CSD NGO Women's Caucus (<http://www.energia.org/>).
3. Gately and Streifel (1997) found that over an extended period of time, economic growth and commercial energy use maintained a near one-to-one relationship in the 37 developing countries they examined from 1971 to 1993.
4. A household survey in Ecuador found that rural businesses accounted for 40 percent of rural incomes, employing 40 percent of the men and 50 percent of economically active women, and that the establishment of these businesses was strongly correlated with electrification. (Lanjouw and Lanjouw 1995).
5. The term “district” is used here to refer to the smallest administrative zone in the country where census and economic statistics are collected. The choice will depend on prevailing administrative zoning—prefecture, county, commune, municipality, ward, and so on may be used as appropriate.
6. This is because poorer people have higher household “discount rates” and place lower values on benefits that arise in the future. Described differently, a poor person cannot look very far into the future but must satisfy his or her immediate consumption needs. The poor cannot divert resources from food and other essentials in order to accumulate enough cash to cover the up-front costs necessary to switch to a modern fuel or improved conversion technology.
7. The term “modern energy services” or “improved energy services” refers to energy sources or fuels that are not traditional (wood, crop residues, and dung are examples of traditional fuels) and that are exchanged for money. Modern fuels are generally more convenient and can be converted more efficiently. Modern cooking fuels (liquid, gas, or solid smokeless fuels) are less polluting, leading to a cleaner and healthier home environment. Modern biomass fuels that are both convenient and can be efficiently converted to useful energy include biogas, ethanol, densified briquettes, and charcoal.
8. Efficiency refers to the amount of useful energy output—for example, heat for cooking or lumens (brightness) of lighting—that is obtained from a unit of energy input. Modern fuels are easier to control and therefore are more efficient to use. This greater efficiency may actually result in a lower cash outlay for the same output achieved from more traditional sources.
9. A black market in petroleum fuels often results when the subsidization of fuels leads to their diversion to other markets and/or the government is unable to provide quantities demanded at the subsidized price.
10. The reserve margin indicator needs to take into account the supply mix of electricity generation in the country in question. Higher levels of hydroelectric power would typically require higher reserve margins.

11. For example, the exploitation and management of natural resources such as oil, gas, and hydropower can be a significant revenue source for government (particularly for the regions where the resource exploitation takes place), offering opportunities for poverty reduction. In some countries, the success of government poverty reduction strategies will be dominated by the success of the policies that are employed to develop and manage oil, gas, and hydropower resources—particularly in those countries where exports of these commodities are potentially significant.
12. A regressive tax is defined as one whose burden fall disproportionately on the poor. For example, taxing fuels such as kerosene, which is consumed by the poor, would be considered regressive if the non-poor do not also use kerosene.
13. The WHO World Health Report 1999 estimates that acute lower respiratory infections ranked fourth for their share of the burden of disease in Sub-Saharan Africa in 1998, responsible for 7 percent of the total. AIDS ranked first, at 17 percent; malaria second, at 10.6 percent; diarrheal diseases third, at 7.5 percent; and perinatal conditions fifth, at 6.2 percent.
14. Smith and Mehta (2000) and Smith, Corvalan, and Kjellstrom (1999).
15. See, for example, the World Bank’s Environmental Assessment and Safeguard Policies, available online at http://www.worldbank.org/environment/op_policies.htm.
16. The high cost of adjustment to the poor is documented in “Bolivia: Introducing Competition into the Electricity Supply Industry in Developing Countries: Lessons from Bolivia, ESMAP Report 233/00, August 2000.
17. A problem with some aid programs provided by donors is that they spoil the market for alternative energy supply options. This can occur if aid subsidizes a particular energy supply technology, thereby making it difficult for other technologies to compete. It also happens where subsidies are tied to a particular supplier (sometimes in the donor country), thereby making it difficult for other suppliers to develop sustainable local markets.
18. Lifeline tariffs may be an exception to this, but may be justified where the subsidy is essentially paid by a cross-subsidy from richer consumers, so preserving the notion that the energy supplier covers its operating costs.
19. Much of this section draws on Lovei 2000.
20. When regulatory commitments are honored, sovereign guarantees to suppliers can be avoided and country fiscal risk reduced.
21. In this case, measures that improve the supply and clean use of biomass fuels and oil products assume critical importance. Opportunities will nonetheless remain for increased electricity services in areas that fall short of electrification; for example, it may be that a rural business such as a trading center or an agricultural produce process center may find it economical to provide some electricity service to the nearby community.
22. Recent survey data from Uganda show that in 1996, 94 percent of households not connected to the grid used dry cell batteries, and were thought to spend about US\$6 per household per month on them. Although such batteries are convenient, they are an expensive way of obtaining electricity. Uganda: Rural Electrification Strategy Study, Final Report, September 1999, ESMAP, World Bank.
23. Butane obtained from natural gas is a source of the cooking fuel LPG.
24. See <http://www.worldbank.org/html/fpd/energy/oil&gas/BestPractices/index.html>.

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Chapter 22

Transport

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22.1 Introduction

“A community without roads does not have a way out.”

—A poor man, Juncal, Ecuador

Voices of the Poor: Can Anyone Hear Us?

(Narayan and others 2000)

A country’s ability to unleash its economic potential is closely linked to the efficiency of its transport system. Transport is an integral part of daily subsistence and economic and social activities. That is especially true for the poor: poor households transport their water, their fuel, and their food and need transport services to get to markets, jobs, and health clinics. The likelihood that the children of poor families—especially daughters—will go to secondary school is much higher if there are reliable and affordable transport services. Better transport can also facilitate the participation of the poor in social and political processes. In countries that lack an effective transportation system, poor people are unable to accumulate the human, physical, financial, and social assets to break out of the poverty cycle. A well-defined and effective transport policy must be an integral part of every country’s overall poverty reduction strategy.

The transport sector has often been narrowly viewed as a bricks-and-mortar industry rooted in large infrastructure projects such as highway and port construction. This perception exists in part because many countries and many development agencies give high policy priority to efficiency-enhancing interventions. However, low-cost infrastructural improvements and transport services also can play a direct role in poor people’s lives. Such low-cost approaches may deliver affordable access to markets, jobs, and essential goods and services while facilitating the flow of information and credit. Transport is integral to most public interventions targeted at meeting the basic needs of poor people. Without adequate roads, poor farmers cannot transport their cash crops to urban populations; nor can they send their children to school or make use of preventive health care. Without adequate transport, in medical emergencies the poor will often not reach clinics in time. Bad transport systems keep poor people in both rural and urban areas physically isolated and trapped in poverty.

The transport sector comprises several modes, including road, rail, maritime, inland waterway, aviation, and rural and urban transport. Each mode has its own infrastructure (for instance, ports, roadways, railroad tracks, airports, bus terminals, sidewalks, footpaths) and its own services (such as trucking, shipping, bus-passenger transport, bicycle taxis). Each mode also provides several types of services, which can be identified by both geographic coverage (international, domestic, intercity, rural, urban, and community) and by users (passenger and freight). Users are also a diverse group with transport needs that differ widely. For instance, user needs may be based on destinations or on vehicle types—or be determined by gender, age, and even, for the disabled, by physical condition.

Transport is an important part of both the private and the public sectors. Demand for freight and passenger transport in most developing countries is growing one and a half to two times faster than national GDP. Most transport services can and should be provided by the private sector, and private-sector participation in the financing and ownership of transport infrastructure is increasing in many developing countries. Public investment in transport infrastructure nonetheless will continue to be significant in low-income countries where markets are small and risks are high, and where private financial markets are not well established. Typically, public investment in transport infrastructure accounts for 2 percent to 2.5 percent of GDP. In countries modernizing outdated infrastructure or developing new infrastructure, public investment may rise as high as 3.5 percent. Value added by the transport sector typically accounts for 3 percent to 5 percent of national GDP.

This chapter seeks to help decision makers in low-income countries integrate transport interventions into poverty reduction programs. Because transport has a pervasive influence across a country’s economy and its social fabric, it is hard to trace and measure the ultimate impact of transport interventions on the welfare of poor households. But we do know that improvements in transport have the greatest impact on poor people when other sectoral interventions are also adequately in place, and that, without good transport, many sectoral interventions may be ineffective. Well-staffed health clinics, for example, are of little benefit to poor people who cannot get to them.

Every policy intervention has an impact on both equity and efficiency. Good transport policy should contribute to poverty reduction by enhancing both. But many governments create transport programs that intervene in only one of these aspects. They may take action for efficiency reasons, introducing major infrastructure investments or service deregulation, or they may act largely for equity reasons, imposing fare controls or subsidizing unprofitable services. The consequences will not necessarily be positive for poor people. While equity in general is good for efficiency, some equity-oriented transport interventions, such as deficit financing arrangements, can have adverse consequences on efficiency—and inefficiency is, in the long run, usually harmful to the poor. Transport policy must therefore explicitly address the distributional effects of efficiency interventions and the efficiency effects of equity interventions.

Transport policies and strategies need to pursue a combination of interventions to meet national poverty-reduction goals. For example, facilitating bicycle transport in urban areas is a pro-poor, cost-effective, and environmentally sound intervention. Improving the management of road agencies and putting maintenance financing on a sustainable basis is also sound business, and holds enormous benefits for poor people both in terms of improved access and of employment opportunities. Reforming loss-making transport agencies to make them profitable and providing more reliable services benefit those who rely on public transport while freeing up huge amounts of public resources.

The first section of this chapter outlines the chapter's objectives and stresses the importance of addressing both infrastructure and services in transport policies.

Section 22.2 emphasizes the need to understand the impact of transport on three core dimensions of poverty—economic opportunities, empowerment, and security—and the need to understand the way transport intertwines with other sectors. It stresses the importance of public accountability for poverty outcomes, and highlights four strategic principles of a pro-poor policy framework:

- ⊃ Transport policy should explicitly recognize the transport needs of poor people and poor areas.
- ⊃ All transport interventions should address both efficiency and equity concerns. Projects that are primarily oriented toward efficiency should also address equity issues, and projects that are targeted at poor people should be implemented efficiently (that is, be guided by the principle of least-cost).
- ⊃ Poor people should be fully compensated for any adverse effects of transport programs.
- ⊃ All stakeholders should participate fully in transport interventions, including women, the poor and other vulnerable groups.

Section 22.3 asks how policy advisers and planners may examine transport policies, programs and their impact on poverty reduction. It proposes a set of key questions and diagnostic tools.

Section 22.4 addresses policy and strategy options. It suggests three vital approaches that may be taken to reduce poverty through transport: by reforming transport institutions to make them more efficient and effective; by implementing a rural transport policy and strategy; and, similarly, by implementing an urban transport policy and strategy. These areas, we must emphasize, are complementary, sharing many poverty-fighting objectives such as a concern for employment generation, traffic safety, nonmotorized transport, gender equality, the special needs of the disabled poor, the HIV/AIDS transport linkage, and the environment.

Section 22.5 focuses on issues of monitoring and evaluation specific to the transport sector, and includes a table of proposed indicators. The guidelines set forth in this chapter build on current knowledge about the links between transport interventions and poverty reduction. They do need testing and refining. But when defining the transport policies and strategies that may reduce poverty, these guidelines serve as a good starting point.

This chapter highlights how integral transport is to any effective poverty-reducing strategy. Its objective is to help decision makers integrate transport interventions into poverty reduction programs. The chapter addresses two key questions: first, how can the transport sector contribute more effectively to poverty reduction; and second, what roles do various actors play in this effort? Our knowledge of the relationship between transport and poverty reduction is still evolving. This chapter seeks to reflect what we know now.

Because transport pervades a country's economy and its social fabric, answering these questions is a major challenge. Developing the transport sector can open up opportunities for regional social interaction and trade. It also can catalyze broader socioeconomic development. Transport affects poor people as consumers, producers, and workers in transport operations. The poor are also disproportionately affected by the adverse effects of transport—for instance, they may be subject to involuntary resettlement during highway expansion; or they may suffer a higher incidence of traffic accidents, either as passengers or pedestrians. While the potential benefits infuse many aspects of a society, however, their very prevalence makes it difficult to trace and measure the ultimate impacts of transport interventions on the welfare of poor households.

22.2 Transport and Poverty Reduction

Poverty is associated with low income and low consumption. It manifests in many ways, including malnutrition, ill health, illiteracy, vulnerability, physical isolation, and political and social exclusion. Each of these dimensions of poverty tends to reinforce the others, and they all share important linkages with transport. Good transport policy can help reduce poverty in all its dimensions while stimulating economic and social development and inclusion, by:

- **Creating opportunity.** Better access to markets creates opportunities for poor people to sell their labor and products, and better transport infrastructure and services facilitate access to schools and health clinics. Good transport policy contributes to economic growth in many ways. It lowers transaction costs. It promotes economies of scale and specialization, thus lowering domestic production costs. It widens opportunities and extends connections to rural hinterlands, expanding trade, integrating markets, and strengthening effective competition (see chapter 12, “Macroeconomic Issues”).
- **Facilitating empowerment.** Transport policy can empower the poor in many ways. Poor communities should be invited to public consultations about transport problems and plans. The poor and their organizations may participate in setting the priorities of transport interventions, and then help implement the interventions. Accessible, reliable, affordable, and safe transport services make it possible for constituents to get to meeting places and town centers. They facilitate the flow of information, prompting political and social participation and accountability. Interventions adapted to the needs of women, the disabled, and other vulnerable groups can make the benefits of transport available to all the poor.
- **Enhancing security.** A reliable transport system helps a country respond to economic and natural shocks, such as major drops in export demand or drought, as well as to more personal needs. For example, in rural areas, good transport can ease the impact of famine, allowing food to be easily moved from areas with surplus to those with deficit. All-season basic-access roads and transport services can also greatly reduce vulnerability to household-level risks such as medical emergencies. In urban areas, access to public transport can facilitate job hunting.

A pro-poor approach to transport policy and strategy development should comprehensively examine the linkages of poverty and transport, build synergies with related sectors, and identify effective public actions. It is important to keep in mind that transport is an intermediate service: demand for transport derives from the activities of other sectors, such as health, education, farming, and manufacturing. Transport interventions have their greatest impact on poor people when other sectoral interventions are also in place. Conversely, the effectiveness of interventions in the health, education, and agricultural sectors depends on the adequacy of transport infrastructure and services.

Three features characterize a transport policy and strategy oriented toward poverty reduction:

- **Full participation throughout the process of all stakeholders.** Too often, transport strategy development has been the exclusive exercise of government economic planners and technical specialists (see chapter 7, “Participation”). All stakeholders must become involved, including representatives of civil society and the private sector, poor men and women, and other vulnerable groups, such as the disabled.

- **Close collaboration between transport specialists and specialists from other sectors.** Developing a transport policy or a transport component of a poverty-reduction strategy is a task for transport policymakers and professionals, but it also requires the collaboration of specialists and policymakers from other major sectors, especially education, health, other infrastructure sectors, and from those involved in rural, urban, and private-sector development.
- **Accountability for poverty outcomes.** The success of transport interventions is usually measured by sector outputs—for instance, kilometers of rural roads paved or numbers of buses put in service. Policymakers have placed little emphasis on the poverty outcomes of such actions. Public actions need to be linked to poverty outcomes also in the transport sector. While sector indicators are important to ensure technical efficiency, they need to follow from decisions that specify anticipated poverty outcomes (see also section 22.5).

22.2.1 Policy principles

Strategic principles provide the basic guidelines for a policy framework. Following the four strategic principles outlined below will help to ensure that the design and implementation of transport policies and interventions are pro-poor.

The transport needs of poor people and poor areas should be recognized explicitly. This is an overarching principle. The transport sector is a powerful ally in a country's attack on poverty. Transport-sector policies and strategies must support the national poverty-reduction strategy, and, in a sustainable manner, must respond to the needs of poor people, poor communities, and vulnerable groups.

All transport interventions should address both efficiency and equity concerns. Interventions that are oriented toward efficiency should address equity issues, and interventions that are targeted at poor people should be done in an efficient way—that is, they must be guided by the principle of least cost.

Transport plays a dual role in promoting economic development and supporting poverty-targeted interventions. This dual role can involve win-win choices, but there may also be compromises and tradeoffs at the program or project level.

Economic efficiency is important because many transport programs involve large capital investments. Sound management of transport assets (for example, ensuring roads, bridges, and tracks are maintained in good condition) is generally more important than new investment, and hence, is a crucial element of this principle. The same applies to non-physical interventions, such as regulatory reform and private-sector participation, which facilitate low-cost services and the use of nonmotorized transport (NMT). It is usually possible to estimate an intervention's economic worth in terms of its net present value or economic rate of return, and such estimates should guide the design, prioritization, and selection of feasible interventions.

An emphasis on the economic efficiency of an intervention should be complemented with an emphasis on its distributive impact. One way of doing this is by incorporating distributional weights into the economic assessment tools used. Be cautious here: the determination of such weights can be open to manipulation, obfuscating efficiency measurement. Another way is to segment the benefit analysis by income group, but this again is a challenging task.

While economic growth generally brings indirect benefits to poor people, in many cases their basic transport needs may be more effectively addressed through direct targeting. The transport needs of the very poor should be identified and, when justified on social, political, or economic grounds, become part of the government's coordinated program to assist them. Cost effectiveness is the key to successful targeted interventions. To be cost effective, a realistic minimum technical standard should be set for basic services targeted to poor people, and emphasis be given to the least-cost solutions, including assessment of any non-transport solutions.

Poor people should be fully compensated for any adverse effects of transport programs. National transport policy must ensure that transport intervention does not harm the poor. The policy must provide a framework for identifying and addressing any adverse impacts of transport interventions on poor people and providing full compensation of adverse impacts (see box 22.1).

Box 22.1. Common Adverse Impacts of Transportation Interventions

Badly designed transport policies and interventions can harm poor people. The following types of impacts are common and warrant explicit attention:

- Displacement of a transport mode that is popularly used by poor people and other vulnerable groups to make way for a more costly mode (for example, the displacement of pedestrians, bicycles, and other low-cost modes of transport by cars and trucks).
- Disruption/partitioning of low-income neighborhoods due to road construction.
- Involuntary resettlement of poor residents to make way for transport projects.
- Excessive regulatory control of transport services, raising entry barriers to the informal sector.
- Increases in transport charges when a subsidy is removed.
- Increases in traffic accidents, especially for pedestrians.
- Higher volumes of pollution and noise from vehicles.
- Spreading rates of HIV/AIDS.
- Loss of jobs caused by restructuring, commercialization, and privatization of state-owned transport enterprises.

These impacts are typically regressive. They may affect all income groups, but poor people are likely to be the hardest hit as they have few, if any, resources to help them adjust to the impact (for example, by relocating). Poor women are particularly vulnerable, and poverty reduction and compensation strategies must be gender-sensitive to ensure that they benefit.

An especially difficult question is how to deal appropriately with the impact of an intervention that directly worsens the plight of the poor. For example, government controls on pedicabs may put drivers out of work. Any intervention should also include studies of its likely distributive impact and its net final impact on poor men, women, and children. Such analyses may suggest that the poor groups that would be affected should be directly compensated, that the intervention should be modified, or that a different intervention should be chosen. An intervention may affect both users and non-users of transport. For instance, construction of a limited-access road through an urban area may displace NMT users and require the resettlement of poor households. Both groups would warrant compensation on the basis that they should not be harmed by such intervention. To ensure that compensation takes place, a national policy stance and the framework to implement it must also be put in place.

Transport interventions require full participation of all stakeholders, including representatives of the poor. Stakeholder participation is one of the key features of a pro-poor approach to transport policy and strategy development. The participation of poor men and women is critical in the planning, decision making and management of specific transport interventions. Without their participation, it becomes very easy to overlook their concerns—for instance, to disregard the importance of NMT. It may seem minor to place proper sidewalks along an urban roadway, but without them the poor, who disproportionately are pedestrians, will often fall victim to motor-vehicle traffic accidents. (See case study R.4 on the importance of sidewalks.) Experience demonstrates that the broad-based participation of affected groups and stakeholders in decision making ensures that the benefits of transport improvements reach the poor. Empowering local communities—especially in poor rural areas—through consultation, participation, and ownership of local infrastructure is also crucial for the social and financial sustainability of transport improvements.

22.3 Diagnosis

This section proposes an approach to diagnosing how the transport sector can best respond to the needs of poor people and contribute to national poverty-reduction objectives. The integration of transport interventions within a country's poverty-reduction strategy must be founded upon a sound understanding of the national poverty conditions. Changes in policy should be based on an assessment of existing transport policy and programs, sector performance, and the institutional arrangements for managing and financing infrastructure and services.

22.3.1 How to determine the transport needs of poor people

Transport–poverty linkages at the local and household levels

To determine how the transport sector can best help reduce poverty, one must first understand two things: the basic needs of poor people; and how much the poor require transport to meet those needs. This is not an easy task. The poor are a diverse group. Their individual needs vary substantially. Information about the transport conditions they confront and how these conditions interact with other factors is typically scant, especially for urban areas. Understanding of the ways poor people perceive their transport problems also is modest.

Identify local transport needs and priorities by consulting with poor communities themselves. It is important to ensure that such consultations capture the views of women and other vulnerable groups as well as those of men. Locate on a map where the communities are, establish their requirements for the movement of persons and goods, determine their capabilities. Draw on this information to help integrate transport issues into broader poverty interventions.

One tool that can assist analysis of the role of transport in the lives of the poor is the sustainable livelihoods approach (see technical note R.1). This approach helps explain how transport is an integral part of livelihood strategies and how lack of mobility is a stumbling block to achieving more income, better health, and reduced vulnerability.

Another useful tool is the transport–poverty profile (TPP). Such a profile draws on a broad spectrum of quantitative data, assessing the volume, quality, and costs of transport infrastructure. It also asks what services are available to men and to women and to different socioeconomic groups. A TPP can help explain the transport needs of poor groups and help focus the design of a transport strategy for poverty reduction. In addition to helping identify areas of need, even a simple accounting of the TPP can assist in addressing transport-related poverty issues during a project’s design and implementation.

Household surveys are another tool useful in determining the transport needs of the poor. Such surveys may establish how much time, effort, and money are expended by the poor in their use of transport. When a household survey incorporates a transport module within its regular poverty and social assessment, it can also identify other transport-related problems (see chapter 1, “Poverty Measurement and Analysis”). A transport module should survey the individual members of households by age, gender, and disability, because the transport burden and access to transport services in many countries are unequally shared.

The transport burden facing women (and therefore their transport needs) can be identified from individual responses in household surveys in terms of effort (expressed in kilogram–kilometers per day) and time spent (expressed in hours). Collect information on women’s travel activities and time expended in travel directly from the women concerned, because male household members tend to underestimate the time women spend traveling for domestic purposes. Table 22.1 shows how strikingly different the transport patterns and transport burdens are of men and women in rural Sub-Saharan Africa. Both cultural and economic factors shape this gender differentiation, determining a household’s division of labor and of earning power. It is clear that any effort to improve rural transport that does not involve women will have very little impact on rural livelihoods (see also chapter 10, “Gender,” and section 22.4 of this chapter).

Spatial poverty-transport mapping

The inherent geographic dimension of transport lends itself to geographical targeting. For such targeting to be effective, planners must know where poor people live and what level of basic services they need. This knowledge can be gained by overlaying a spatial poverty map with a map that indicates the availability of transport infrastructure and services using isochrones.¹ Such maps may also be overlaid with data on land use and the spread of HIV/AIDS. Collect all data at the lowest jurisdiction possible. Because men and women often have different responsibilities and use different services, map them separately (see chapter 1, “Poverty Measurement and Analysis”).

A shortage of recent and reliable data to draw such maps is a common problem. When assembling fresh data, take into account the purpose, costs, and benefits of the data to be collected. Some countries already have detailed socioeconomic statistics at the local level, although frequently the data is not disaggregated by gender. These statistics can be used at relatively little cost to construct transport-poverty maps.

22.3.2 Assessing existing transport policy

A second step of the diagnosis is to assess broadly if and how existing policy helps reduce poverty. These issues need to be scrutinized:

- ⊃ Is there a national transport policy? If yes, does it address poverty issues? Are there explicit policy targets to help poor groups?
- ⊃ Do policies require and facilitate full consultation and participation by representatives of all stakeholders in transport decisions?
- ⊃ Do transport sector policies and regulations minimize opportunities for corruption? Do they maintain transparency, publishing and posting budgets and plans?
- ⊃ Is private sector participation an explicit element of policy for planning, supplying, managing, and financing transport infrastructure and services? Has the performance of the private sector been assessed?
- ⊃ Has a priority list of policies and programs that addresses the condition of transport infrastructure and the adequacy of transport services, especially for poor people, been identified?
- ⊃ Do government regulations support the means of transport used by poor people? Or do they inhibit them? Are nonmotorized forms of transport (for example, bicycles) taxed excessively?
- ⊃ Do transport policies and planning procedures explicitly take gender into account? Are there discriminatory barriers constraining women from becoming entrepreneurs of transport services or from taking civil work contracts (for example, must bids be backed up by collateral)?
- ⊃ Do transport policy and strategy maximize the mobility of poor people with disabilities? Are there standards on accessibility to public-transport vehicles and on the physical environment? Are these standards enforced?
- ⊃ Are the standards applied in the transport sector (for example, rural road design standards) appropriate to the country's circumstances? What would be the consequences of adopting lower road standards for rural roads with low traffic volumes?
- ⊃ Are transport sector policies and programs coordinated with other programs aimed at poverty reduction? Are donor poverty programs in the transport sector coordinated?
- ⊃ By answering questions such as these, analysts put themselves in a good position to assess a country's transport policies in the context of the needs and problems facing the poor. They also gain a sense of the potential actions that can enhance the transport sector's contribution to national poverty reduction goals.

**Table 22.1. Comparison of Female-Male Transport Burdens
(ton-km per person per year)**

	<i>Kasama (Zambia)</i>	<i>Lusaka Rural (Zambia)</i>	<i>Mbale (Uganda)</i>	<i>Kaya (Burkina Faso)</i>	<i>Dedougou (Burkina Faso)</i>
Adult females	35.7	30.3	39.0	10.3	15.5
Adult males	7.1	9.8	8.6	3.6	4.4

Source: Barwell (1996).

22.3.3 Assessing transport sector performance

The third step of the diagnosis is to make a preliminary assessment of the country's transport situation. Use both quantitative technical measures (for example, the road roughness index) and qualitative community survey measures (for example, asking whether road conditions are good, fair, or bad). These indicators, used together with comparators from other countries and other benchmarks, provide initial summary information of a national transport system's condition and performance. They can be especially useful in highlighting excessive costs, bottlenecks, and barriers.

The primary objective of transport policy is to improve accessibility, but the most appropriate indicator of accessibility will vary by location, as follows:

- In *rural areas*, basic accessibility may be defined in terms of passability, by motorized or nonmotorized vehicles. Express the degree of impassability as the number of consecutive days that motorized transport cannot use a road (or other facility, such as a waterway). To guide policy and interventions, set a threshold level of impassability needs for each link. This level will depend on how important the link is, and should reflect community views about the consequences of being isolated by impassable links for any length of time. For the individual, the critical issue is often access to produce markets, health care, and other essential services. A summary indicator is the proportion of the rural population living within 2 kilometers of an all-weather road or a regular transport service.
- For *rural-urban and inter-urban transport*, accessibility to important facilities or locations typically involves a series of transport links. For example, to get from a remote farm village to a regional market town may mean travelling on a footpath, then a local rural road, then several secondary or provincial roads. That is, the accessibility of markets to farm communities depends on more than the passability of local routes. It also depends on the quality of the network linking to market centers, and especially on the good condition of the secondary roads leading to the market center. Remote communities often place a strong priority on maintaining the good condition of the connecting secondary road because all-season passability supports a full range of services. Accessibility can be indicated by the generalized cost per unit of movement for personal travel and freight, including tariffs, time, and other service-quality costs, such as safety.
- In *urban areas*, a single journey may involve multiple alternative routes, as well as multiple alternative destinations. Urban accessibility should be measured as the average generalized cost of access to facilities (for example, place of employment, school, or clinic), weighted by the relative importance of those trips in household trip patterns. This can be calculated for a city as a whole or for parts of it, thus allowing comparisons among those in poor and more affluent areas.

Good accessibility depends, in part, on the efficiency of transport operations. This, in turn, is affected by market and institutional structures and public policies:

- *Operational components* include the adequacy of fixed and mobile assets, as indicated by the degree of congestion in their use; the quality of asset maintenance; the efficiency of utilization of the assets; the reliability of operations; and the vulnerability of the assets to adverse weather and other conditions. The safety and security of transport operations and their impact on the environment are also important to the social efficiency of operations.
- *Structural components* are important because economic regulations that artificially restrict entry to the transport market limit competitive pressures and may lead to poor performance. The level of competition in the sector, the existence of an adequate regulatory framework, the prevalence of state monopolies, and the scope for the informal sector are important indicators of effective market structure.
- *Policy components* affecting the quality of transport supply include the allocation of public resources to the transport sector, the levels of subsidy, and the efficiency of the targeting of subsidies to policy objectives. In transport, as in other sectors, performance is likely to be enhanced by ensuring that a wide range of stakeholder interests are represented in sector policy formulation, at the most local levels possible. Good policies supporting cycling and walking, for example, are particularly important to the poor, so much so that the retail cost of a nonmotorized vehicle, such

as a bicycle, can be an important system performance indicator: in many countries, bicycles are subject to high tariffs or taxes, placing this otherwise low-cost mode of transport out of the reach of the poor. Road transport costs can vary substantially as a result of policy. For example, it was found that the operating costs of a tractor and semi trailer are four times as high in some African countries as in Pakistan, primarily due to taxes and an over-regulated business environment (Hine and Rizet 1991).

Performance indicators for these components need to be developed for each significant mode of transport, and they need to cover both infrastructure and service components. Where possible, the indicators should consider differences of service received by gender. Table 22.6 (at end of chapter) sets out a possible list of performance indicators, grouped according to operational performance, structure, and policy, at a sector-wide level and disaggregated into urban, inter-urban, and rural subsets. Because these indicators are inevitably only partial measures, they must be interpreted with care.

Such performance indicators can be used in two ways: to assess existing conditions and to monitor sector development over time under the impact of policy interventions (see section 22.5). They can also be used to put together a diagnostic profile and analysis, preferably at a subnational/regional level, both in quantitative terms (for example, domestic freight rates) and in qualitative terms (for example, regulation of entry and prices). For this analysis to be most helpful, acceptable or desirable ranges of value and appropriate benchmarks need to be established for the circumstances of each particular country (see also Gannon and Shalizi 1995).

22.3.4 Assessing institutional arrangements

The final step of the diagnosis involves an assessment of the roles of the private and public sectors and of communities in the transport sector.

The roles of the public and private sectors

There are two reasons we need to assess the market structure of transport infrastructure and services. First, transport worldwide typically has been subject to substantial government regulation, but there is strong evidence that greater involvement of the private sector in the management and financing of both infrastructure and services produces better value for money—and better value also for the poor. Second, the transport industry market structure can indicate which groups are likely to benefit from transport projects. In a transport market with ineffective competition, as much as one-half of the benefits of transport infrastructure improvement—that is, lower transport costs—may be captured by the service providers themselves and not passed on to users.²

Most transport infrastructure is maintained in discrete parcels, such as a roadway, rail link, bridge, or airport runway, by a single agent, often the government, as the asset owner. In contrast, many transport services, especially in the road sector, can be supplied under conditions of free or contestable entry and, in high-volume markets, by many competing operators. Even subsidized services that are justified on poverty policy grounds can be efficiently provided by a private firm through competitive tendering for a specified level of service. As a result, both public and private sectors have a varying degree of participation in the ownership, provision, and operation of transport infrastructure and services. In addition to commercial services, many transport needs are met with privately owned modes of transport—for instance, donkeys, bicycles, motorcycles, or autos.

Some transport infrastructures and services depend upon economies of scale that turn them into natural monopolies or entities with significant monopoly power. Regulations presuming that competition in such markets is wasteful or even impossible often limit the number of providers. This limits competition both in the market and for the market. An example of competition for the market is the competitive tendering of bus franchises. The emergence of new technologies in the last several decades, however, has significantly reduced scale economies and eliminated or weakened concerns about the monopoly power of some components of transport services and infrastructure (for example, terminals, berths, and contracting-out maintenance). While many governments have responded to these changes and reduced

the range and severity of regulation, notably by allowing competition for market franchises, some governments remain far behind in reforming their regulatory frameworks.

Government is increasingly working in partnership with the private sector in road management and financing. In countries as diverse as Guatemala, the Lao People’s Democratic Republic, Latvia, the Philippines, and Zambia, governments and road users, frustrated by the poor state of the road network, are commercializing the management and financing of their roads. They have set up road management boards and road funds to involve the private sector and civil society and to make road users pay for the level of road service they want (see Heggie and Vickers 1998, and section 22.4 of this chapter). In addition, where adequate capacity of the private sector exists or can be developed, many of the functions associated with managing the road system, such as design, construction, and maintenance, may also be contracted out to the private sector under performance contract arrangements.

Against this background, it is useful to identify how involved the private sector is in transport, especially in infrastructure. Ask where, in what way (full concession or management contract), under what regulatory or contractual conditions that govern prices and quality, and with what results private firms are involved in transport. Indicators of efficiency include the degrees of financial autonomy and commercialization, the price charged by each mode, and conformity with international good practice.

Government plays a number of core roles in transport. Governments develop and administer policy, including the allocation of expenditures across functional areas; grapple with issues that transcend private action—notably market failures, including monopolistic power, and externalities such as traffic accidents, congestion, and pollution; manage social obligations arising from the transport sector; and monitor sector performance. Key questions that need to be answered in order to assess the allocation of public expenditures and the need for institutional reform include:

- Are market failures being tackled? If so, which ones and how?
- Are distributive concerns being addressed by explicit policies targeted at poor groups?
- Do public expenditures for the sector adequately address the sector issues?
- Does the budget allocation fund capital spending and neglect recurrent costs?
- Is there any way to improve the reliability of the recurrent cost-funding mechanism?
- Does the budget process take into account spending for traffic safety and pollution mitigation?
- Are services provided efficiently, at least cost? Are they responsive to user demand?
- Are the financial obligations/deficits of state-owned enterprises on budget?

Additional questions, addressing intergovernmental institutional arrangements, include:

- How do existing intergovernmental fiscal relations affect transport investment and maintenance at the national, state, and local levels?
- Are these arrangements efficient and responsive to the needs of poor groups?
- Is local fiscal capacity adequate? Should some transport responsibilities (for example, road maintenance) be decentralized?

The role of communities

When assessing community involvement in the transport sector, indicate the type of policy and strategy interventions required to make communities formal partners with local government transport agencies. Poor people and their communities are often viewed merely as the passive targets or the beneficiaries of interventions. This is a serious error. Poor communities are capable of playing a significant active role, both in improving physical access to transport and in improving transport services themselves. Government agencies need to recognize that the poor can do much more than participate in public consultations.

Physical and financial circumstances in many developing countries leave many communities no option but to get involved in improving their roads, tracks, and footbridges. Community ownership and management of these infrastructures is a viable way to improve and sustain basic access. In fact, even if

some countries could afford to publicly provide sustainable transport infrastructure to all their remote and poor communities, government ownership would not necessarily be the best option. There is strong evidence that when local transport infrastructure is voluntarily owned and managed by communities, its condition is better and the cost of upkeep and maintenance is significantly lower than when the same type of infrastructure is owned and managed by a public agency (Ivarsson and Malmberg-Calvo 2002). When the incentives are right, communities have shown that they will seize such responsibilities.

The role of governments, at local and national levels, should be to leverage the strong will of poor communities to improve their livelihoods, and to strengthen the organizational, technical, and financial capacity of these communities. Transport professionals in technical ministries and local government departments need to reach out to community-based and nongovernmental organizations that work in poor areas, both in the city and the countryside. They must pursue opportunities to work through these organizations, giving direct help to those communities that want to improve their infrastructure.

When assessing the role of communities in transport and forming policies and programs to stimulate community involvement and ownership of local transport infrastructure, the following six questions may serve as a guide (also, consult chapter 9, “Community-Driven Development”):

- ⊃ Is there a legal framework that enables communities to register ownership of their local roads?
- ⊃ Are government transport agencies at the local and national levels aware of the benefits to be gained from stakeholder consultations and community involvement?
- ⊃ Are the processes through which investment decisions are reached in the community democratic? Do they involve poor and other vulnerable groups, including women and the disabled?
- ⊃ Are communities making informed investment decisions? Are they fully aware of the implications of their options and choices, particularly with regard to future maintenance requirements?
- ⊃ Does the national transport policy support the creation of user associations that represent the transport needs of poor people who may travel by foot, bicycle, hand-carts, rural passenger taxis, or animal draught?
- ⊃ Is there transparency in planning and decision making, and with budgets? Do transport agencies facilitate community access to information?

22.4 Policy and Strategy Options

This section provides guidelines for integrating transport into a national poverty-reduction strategy and for aligning transport sector priorities in a resource-constrained environment. It points to the importance of ensuring that transport agencies operate efficiently and effectively, and highlights the value of specific policies and strategies for rural and urban transport. It also addresses a number of related policy concerns, among them job creation, traffic safety, nonmotorized transport, gender equality, the special needs of the disabled poor, the HIV/AIDS-transport link, and environmental issues.

22.4.1 Setting priorities

Aligning transport priorities with the national poverty-reduction strategy

Governments periodically modify their transport policies and investment programs to serve national goals. In most countries, transport policy and strategy mainly serve economic development, but national goals increasingly include specific poverty-reduction targets. It is important to revisit transport policies and strategies regularly to ensure that the sector contributes effectively to the reduction of poverty in all its dimensions.

A number of factors condition transport policies and strategies. Among these are the size of the population, a country’s physical geography, its resource base, institutional capacity, regulatory status, its location or proximity to world markets, the level of urbanization, the extent and condition of transport assets and the potential for private sector development. Moreover, transport policies and strategies must support the national social development and growth strategies. This means the appropriate areas of

emphasis will vary among countries. As illustrated in table 22.2, in low-income countries where most of the population is rural, the transport strategy supporting economic growth will focus on providing farming communities with basic accessibility to markets and social services. In a country where major economic activities concentrate in urban areas (that is, manufacturing and services), an efficient and liveable city with effective urban public transport will be a high priority. Many countries pursue a combination of development and poverty reduction strategies. Their transport policies and priorities will depend on all these factors.

Choosing interventions

A major challenge for a low-income country fighting poverty is that the wish list of things to do is long but available resources are very limited. Economic efficiency and social equity objectives may be mutually reinforcing in the longer term, but they will not always be compatible at the program or project level. That is why it is important to set priorities under resource constraints. Such decisions often involve tradeoffs and are therefore political. All stakeholders, especially poor groups, must participate in the final choices.

Most public actions in the transport sector aim to improve the efficiency of a mode of transport or a corridor, or provide physical access to income-generating activities such as mining or tourism. Usually, the demands in these cases can be estimated. To prioritize these public actions, such analytical tools as net present value (NPV) and economic rate of return (ERR) can be used.

Part of the task of evaluation is to estimate the distributive impact of these kinds of transport interventions. Often, it is impractical to estimate the full and final changes in the welfare of various groups. But there are some guidelines that can help identify dominant impact linkages, such as the influence of different market structures. The main focus should be on estimating the impact—particularly the adverse impact—on poor groups.

Poverty-targeted public actions must be economically efficient, and policymakers should focus on the least-cost options to achieve their objectives. An example is given in case study R.3 from Andhra Pradesh, India. Different criteria are available to determine the choice of directly poverty-targeted public actions. Most interventions cannot be evaluated by cost-benefit analysis, so they should not be prioritized along with efficiency-oriented public actions on the basis of conventional measures such as NPV or ERR. Cost-benefit analysis typically measures benefits by monetary willingness-to-pay (WTP), as revealed through the market system. When poor people do not use transport services because they are unreliable or too expensive, the applicability of WTP is limited, although still relevant to policy design.³ A more appropriate priority measure would be the cost effectiveness of the resources allocated to poverty-targeted actions.

Given the limited knowledge of the relationships between inputs to reduce poverty (for example, improved travel time to a local health clinic) and the consequent outcomes on symptoms of poverty (for example, changes in the local infant mortality rate), it is necessary to develop cost-effectiveness indicators as intermediate benchmarks. For example, when a transport policy provides basic access to health clinics, we may regard that as an intermediate outcome, on the working assumption that this will improve the health and capabilities dimension of poverty. To guide the allocation of resources, the unit cost of providing this basic access to various communities, in terms of dollars per poor person or household served, can be taken to indicate the level of cost effectiveness. This dollar cost can then be compared with the dollar costs of achieving other intermediate outcomes related to poverty reduction,⁴ and the government can use the information these indicators provide in deciding how to allocate its resources across different instruments and sectors.⁵

Table 22.2. Growth Strategy and Transport Priorities

<i>Growth Strategy</i>	<i>Transport Priorities</i>
Agricultural development	Farm-to-market access; intercity transport corridors linking with market centers
Manufacturing and services sector development and urban efficiency	Intercity transport corridors linking major centers; urban public transport
International trade	Logistics and facilitation; ports

In situations where different transport modes do not depend on another, cost-effectiveness measures can be developed and compared across modes. Again, these measures will typically represent intermediate indicators rather than poverty outcomes. For example, the cost of providing basic access by a rural road, in dollars per poor person served per annum (an intermediate indicator), can be compared with the cost of providing basic access in different regions and by different modal infrastructure (for example, inland waterways, jetties, ramps); and with the cost of providing road access for public-transport service into poor communities on urban peripheries (again in terms of dollars per poor person served per annum).

Where transport modes are related (as is the case, for example, with a bus feeder service to an urban rail line), similar cost-effectiveness measures can be developed. These, however, need to be based on the various combinations (alternative levels of cost) of the related modes. In all these situations, consult stakeholders on their preferred choice among cost-effectiveness measures.

Cost-effectiveness analysis is particularly important for assessing the potential benefits of different interventions for poor women. Many women do not have access to income earning or credit opportunities, and much of the work they do to support their families goes unpaid. This means we must measure many transport interventions in terms of the ways they ease the unpaid work of women's lives. Does a transport program help women get health care for their families? Does it help them take part in managing community infrastructure? Does it help mothers ensure their children attend school?

22.4.2 Institutional reform of transport agencies

The problem of inefficient transport agencies

Inefficiently managed transport agencies provide expensive and unreliable services. Bad transport management impacts poor people because unnecessarily high costs of transport translate directly into more expensive bread and milk. High fares also act as a brake on travel for social reasons, making it difficult for rural households to maintain important social contacts in the city and for urban migrants to remain close to the families they have left behind. Put another way, inefficiently operated road agencies, ports, and railways subtract value from the economy. A glaring example is in Argentina, where the deficits of Ferrocarriles Argentinos (FA), the former state railway, consumed nearly 1 percent of GDP and generated almost 10 percent of the public deficit while offering unreliable, dirty, unsafe service at high prices. FA was actually impoverishing the Argentine population (Thompson 2000).

Policy actions for reform

Rich and poor alike can benefit from better services at lower fares and lower economic costs when railway and port operations are concessioned to the private sector and when the private sector and civil society stakeholders get involved in the management and financing of roads. A more efficient transport sector greatly enhances competitiveness and cuts the cost of trade (see chapter 13, "Trade Policy"). Better management of the port in Chile, for example, gave a major boost to trade (Fink and others 2000). Better transport enabled farmers in Zimbabwe to supply fresh vegetables to the U.K. market, swiftly trucking produce to the airport for overnight flight to London (Krugman 1998). Moreover, a large amount of public money can be saved by reforming agencies that operate at a loss. In cases where agency reform results in fare increases, part of the new revenues may be allocated to subsidize fares for the poor. Argentina pioneered the use of negative concessioning for urban passenger services. There, the government sets an upper limit for fares, ensuring the service is accessible to poor people, and concessionaires bid for the minimum subsidy. In Buenos Aires, traffic after concessioning doubled on both the metro and the suburban passenger lines, and service quality vastly improved.

Reform of road management and financing is high on the agenda of many developing and transition countries, for good reason (see box 22.2). Roads carry 60 to 80 percent of all passenger and freight transport, and the cost to the economy of neglecting road maintenance is huge. When a road is allowed to deteriorate to poor condition, each dollar deferred on road maintenance increases vehicle operating costs by about US\$2 to US\$3. In Africa alone, the extra cost due to insufficient maintenance is shocking: about US\$1.2 billion per annum (Heggie and Vickers 1998). Seventy-five percent of this cost is paid for with scarce foreign exchange. The sum is equivalent to about 5 percent of the total value of exports in Sub-Saharan Africa (Heggie 1995).

Box 22.2. Commercial Management and Financing of Roads

The road sector is big business, in terms of assets, employment, and turnover. For some developing and transition countries, roads are their largest assets, with replacement costs amounting to well over US\$500 billion. The asset value of a relatively small road agency like the Roads Department in South Africa is the same size as Northwest Airlines in the United States. Given the size and importance of the road industry, it is extraordinary that these agencies are still managed and financed through general budget allocations, in the same way that governments manage the health and education sectors. They keep their accounts on a cash basis, and are subject to little market discipline, and yet they are perfectly capable of standing on their own feet. Roads should be managed like a business: they should be brought into the marketplace and put on a fee-for-service basis. This would involve creating an arm's length agency to manage at least the main road network on a commercial basis; introducing an explicit road tariff; making sure road users pay for extra spending on roads; depositing the proceeds from the road tariff into a road fund; and appointing a representative public-private board to oversee management of the road fund. To ensure that the road fund will benefit poor communities with low traffic volumes, it is essential also to include organizations representing the interests of poor groups on the board. The road fund in many countries also pays for specific interventions to enhance the safety of pedestrians and to improve public transportation in urban areas. These interventions are particularly beneficial for poor people.

Source: Heggie and Vickers (1998).

Experience shows that road user organizations, including representatives of peasant farmer associations, are quite willing to pay for roads if they can be assured the work will be done efficiently and the money will actually be spent on maintenance. Countries that have reformed their road agencies have seen expenditures on maintenance increase. In Ghana, the road-maintenance budget increased tenfold between 1994 and 1999, and in Malawi it increased fourfold in the same period. This is good news—road maintenance is a sound investment that holds immediate benefits for rural and urban residents alike.

International experience suggests that a national transport policy framework should set the objectives and directions for sector reforms, and that these should follow four guidelines:

- Manage transport infrastructure and services like an accountable business, not an untouchable bureaucracy.
- Introduce competition in both transport infrastructure and service markets.
- Ensure sufficient funding to maintain core assets.
- Develop mechanisms to give users and other stakeholders a strong voice and real responsibility.

An example of how these four guidelines can be implemented in practice is illustrated in box 22.2.

22.4.3 Rural transport policy and strategy

Poverty-targeted transport interventions in poor rural areas enjoy one important advantage. There, the population is often relatively homogenous, and this gives geographically targeted programs substantial scope.

Rural-transport interventions are usually undertaken by a wide range of actors, including national ministries, local governments, NGOs, and communities. This variety of actors, however, creates a substantial risk that efforts may be piecemeal, disconnected, and unsustainable. We strongly recommend that countries formulate and implement an explicit rural transport policy and strategy. This strategic rural-transport framework is essential. Without it, rural roads and other transport infrastructures are often unsustainable, and transport services and low cost means of transport often receive only feeble attention. The policy development process could usefully follow the features and principles outlined in section 22.2 above.

Rural transport problems: Lack of basic access and mobility

More than two-thirds of the world's poor live in rural areas, and will continue to do so for many decades to come (Ravallion 2000). Effective transport is a complementary input to nearly every aspect of rural life. It is an essential element of any strategy for rural development and poverty reduction.

The lives of poor rural men, women, and children are characterized by isolation, exclusion, and unreliable access to even the most basic economic opportunities and social services. Villagers walk and

carry their loads. In rural Sub-Saharan Africa, the most common method of transport is the legs, heads, and backs of African women (Malmberg-Calvo 1998). Lack of all-season access to markets, nonfarm employment, schools, and health clinics deepens poverty and increases vulnerability. Numerous poverty assessments document the hardships that come with physical isolation, as well as the hopes that better access and mobility bring.

“If we get a road, we would get everything else: community center, employment, post office, water, telephone.”

—Young woman in a discussion group,
Little Bay, Jamaica
Voices of the Poor: Can Anyone Hear Us?
(Narayan and others 2000)

The transport situation that the rural poor typically face can be characterized as follows:

- ⊃ Poor communities are isolated for extended periods because they lack reliable all-season road access. Visits by motorized vehicles are rare, and are often limited to harvest times and occasional visits by government agencies and NGOs.
- ⊃ The poor’s journeys are mostly short, numerous, and time- and effort-consuming. They are made for the most basic production or subsistence needs, such as collecting water and fuel, farming crops, and harvesting and processing them (see table 22.3).⁶
- ⊃ Infrequent, longer journeys are also essential to livelihood strategies. These include visits to hospitals or clinics and journeys to sell produce or to search for jobs.
- ⊃ Poor people do not own and rarely have access to motorized transport. Walking and NMT predominate, along with motorcycles and low-cost motorized vehicles. Head-loading and other physical portage is the norm.
- ⊃ The transport burden for domestic tasks tends to fall disproportionately on women (see table 22.1). Social rules and customs often limit women’s access to available means of transport.

Improving and maintaining rural transport infrastructure

Rural transport infrastructure (RTI) is a broader concept than the conventional term “rural roads.” RTI includes both the lowest levels of the designated network for which government is responsible (such as tertiary, district, and feeder roads) and the undesignated, informal network of paths, tracks, roads, and footbridges over which poor people travel. In some countries, for example in Southeast Asia, waterways and associated wharves, piers, and ramps are an integral part of the rural transport system, and warrant equal attention.

The size of the RTI network in many countries is unknown. Some data are usually available on the magnitude of the local government road network, but often there is no information at all on the community network. Surveys, case studies, and anecdotal evidence indicate that there are often twice as many undesignated or community roads as there are local government roads, and even more tracks and paths.

Table 22.3. Average Time Spent by Rural Households on Transport for Different Purposes: Sub-Saharan Africa

<i>Purpose</i>	<i>Distribution (percentage)</i>
Food production and grinding	30
Fuel and water collection	45
Local and external crop market	15
Other	10

Source: Dawson and Barwell (1993).
See also Barwell (1996) and Howe (1997).

Lack of basic motorized road access in rural areas is often a result of inadequate road maintenance, caused in part by political influence that favors urban areas or favors network expansion and upgrading over the maintenance of existing core networks. Lack of maintenance also is often a direct outcome of inappropriate institutional arrangements. These may include confused ownership and management responsibilities, distorted incentives and weak accountability, and lack of secure financing and local capacity. Addressing these problems requires a dual approach: strengthening local institutions as the centerpiece of rural development and poverty reduction, and formulating and implementing sound rural transport policies and strategies.

The rural transport strategy should provide clear answers to three key questions:

- ⊃ ***Who should own and be responsible for the various levels of the rural transport infrastructure network?*** Separate institutional arrangements are required for local government roads and for community roads and paths. Without clear ownership responsibilities, there are no strong incentives to secure realistic and affordable solutions for sustainable access improvements for poor communities.
- ⊃ ***How can local capacity for managing and planning rural transport infrastructure be mobilized?*** Most communities and local governments are too poor to afford in-house expertise, and their networks are too small to justify it. To solve their capacity deficit, they need to explore other arrangements, such as contracting with higher-level road agencies or the private sector, and they need to seek scale by joining with neighboring communities and districts in service committees. Key public interventions include strengthening the ability of communities and local governments to become effective clients and developing local enterprises to manage and execute maintenance and minor upgrading. Such efforts must remove any barriers that would prevent female entrepreneurs from competing on an equal basis with men in bidding for contracts.
- ⊃ ***Who will provide an adequate and steady source of funding, especially for maintenance?*** Secure and adequate funding for maintenance is the Achilles heel of most local government roads. Given the incomplete administrative and fiscal decentralization process in many developing countries, most local governments must rely on central transfers, block grants, or an allocation from the road fund. Design these mechanisms to encourage local resource mobilization for both government and community-level maintenance of their respective networks.

In addition, experience from past rural development programs and policies suggests that the anti-poverty impact of RTI interventions can be enhanced by emphasizing a least-cost approach. That is, when providing basic access, seek the minimum-cost engineering solution that ensures all-weather motorized passability over the life of the road. This will extend access to the greatest number of households for a given budget. When technical standards are set too high, a large proportion of poor communities is left unserved. Cost-effective and innovative techniques include spot improvements, labor-based approaches, and the construction of low-cost structures such as cross-drainage facilities (bridges and culverts) that are durable enough to withstand heavy rains. See also Malmberg-Calvo (1998) and Lebo and Schelling (2001).

Improving rural transport services: Motorized and nonmotorized

Both motorized and nonmotorized vehicles provide transport services that are vital for rural communities. The single pickup truck that arrives in the village once a week with supplies for farms, schools, and the health center is of immeasurable importance. The bicycle trader who takes produce from the village to the nearest market also performs a critical role in the life of near-subsistence farmers whose surpluses are too small for them to market on their own. It should be clear to all who support infrastructure improvements that what really matters are services. Any investment program for improving transport infrastructure needs to carefully examine existing constraints to effective transport services and the ownership of intermediate means of transport.

Essential providers of rural transport include the following:

- ⊃ ***Motorized transport services.*** Motorized transport services usually consist of pick-up trucks for both passengers and freight, and are generally provided by small entrepreneurs who either drive their own vehicle or employ a driver (often on the basis of a quasi-hiring arrangement). The vehi-

cles are typically old and in poor condition. In some countries, operators of these services work in associations that allocate routes and specify fares, and that are essentially cartels representing first and foremost the interests of their members. These associations often keep prices high, give little attention to route design, and overlook the wider interests of the communities they serve. With some capacity building, however, they could become important quality-improvement agents assisting in road safety and route design.

- **Intermediate means of transport (IMT).** For distances up to 5 kilometers, and as far as 20 kilometers in some circumstances, walking is by far the most common mode of travel and transport in rural areas of developing countries. Where NMT services are available for hire, they are usually provided by bicycles, rickshaws, and donkey carts, with motorcycles sometimes also available. Lack of access to credit and information severely limits the adoption of more efficient and less onerous IMT.

Financial profitability is arguably the single most important factor determining whether a particular technology is adopted. Unless subsidized, a commercial service has to generate profit, but extending transport services to all rural areas means encompassing areas of low population density and therefore low profitability. One solution to the problem is to license a number of routes together as a package and require operators to bid for the market. Route frequencies, fare levels, reliability, and the amount of any required subsidy would be made explicit in the bidding and negotiating process. Groups of existing operators could be encouraged to form companies to place bids. Important factors that influence the viability of rural transport services are listed in box 22.3.

Solutions will clearly depend on the local context. Rural areas are far from homogenous. Whether they can be characterized as low density or high density, as poor or more affluent, will determine the emphasis of potential interventions, such as removal of fiscal impediments, targeted subsidies, credit, and type of infrastructure. Improving economic conditions and cash flow and stimulating local initiatives will increase the incentives for provision of rural transport services as well.

Nontransport solutions: Location and quality of facilities

Where feasible nontransport solutions exist, they should be evaluated along with transport solutions. Many transport problems can be eased by reducing the enormous amount of time rural dwellers in developing nations spend trying to perform their most necessary domestic tasks (see table 22.3). A major determinant of that amount of time is the distance from households to wells, forests, grinding mills, schools, and health centers. This time spent is a drain on labor, which is the principal economic resource for most rural households. Effective transport-reducing interventions include more convenient siting of water and energy sources (for example, constructing wells, or planting trees for firewood) and of grinding mills, and facilitating access to credit for low-cost means of transport.

Integrated provision of rural infrastructure services

Experience shows that when a country has a rural transport policy and strategy, interventions to improve the transport situation of poor people can usefully be pursued as part of both single-sector and multisector

Box 22.3. Factors That Influence the Viability of Rural Transportation Services

- **The level of economic demand for transportation, including the critical mass of users, service providers, support services**
- **Availability and cost of a range of transportation technologies and inputs**
- **Availability of credit facilities for users, suppliers, and repair facilities**
- **Regulatory restrictions, especially on entry licenses and rates, that affect competition**
- **Quality of infrastructure**
- **Policy and fiscal environment; for example, excessive taxation**
- **Culture and social and gender relations**

Source: Starkey, Ellis, Hine, and Ternell (2002, forthcoming). "Improving Rural Mobility" Technical Paper. World Bank, Washington, D.C.

programs. Inadequate transport access is typically just one of many infrastructure problems facing the poorest rural communities. Single-sector programs usually pay more attention to addressing the sector policy issues that are critical for sustainability. However, more comprehensive programs, while also more expensive, can have a greater impact on the incomes and quality of life of poor communities (see box 22.4 and case study R.2). Multisectoral approaches allow rural communities to set priorities according to their own needs and facilitate a coordinated approach to strengthening the capacity of local governments and communities. It makes more sense to improve local governance in investment decisions across all sectors than to focus on a single sector. A multisectoral approach can thus provide an opportunity to use rural infrastructure as a means for addressing governance and institution-building at local levels (see also chapter 8, “Governance,” and Pouliquen 2000).

22.4.4 Urban transport policy and strategy

Urban transport problems: Symptoms versus causes of poverty

The high cost of transport for the urban poor plays a dual role in their lives. It is both a symptom of poverty and a cause of it.

The urban poor face different basic-access problems from those faced by poor people in rural areas. They are more concerned with access to job opportunities and labor markets than to product markets. Lack of access to a workplace is among the major reasons poor people in many large developing cities find it difficult to obtain formal jobs: the urban poor in these cities tend to live either in informal settlements within the city that are inaccessible to public transport, or on the urban periphery, in spots far from the main centers of employment. The costs of access, both in terms of money and time, may be high. Inaccessibility also limits informal income earning opportunities (see box 22.5).

Recognizing the nature of poor people’s transport problems in urban areas is a necessary condition for the determination of the appropriate policy response—but it is not in itself sufficient. Because urban transport patterns and characteristics depend on conditions in other markets, especially those for labor, land, and housing, the urban poor may choose less accessible housing locations because this is the option that best serves their overall interests. The burden of transport costs in this case is thus a symptom of poverty rather than its cause.

Where institutional and structural constraints stop transport suppliers from meeting the needs of poor people at a cost they can afford, however, high transport costs will contribute to the poverty of those people. Other contributing causes include inappropriate government regulations on land and housing markets that curtail the residential location choices of the poor (see chapter 16, “Urban Poverty”).

This dual role of high transport costs as both a symptom and as a cause of poverty suggests that policy questions about urban transport and poverty should be addressed at two levels, namely:

- Where transport is a symptom of poverty rather than its cause, can transport interventions be a more appropriate action than interventions that act directly on the fundamental causes?
- Where transport sector inefficiencies or inequities are a contributory cause of urban poverty, what is the nature of those inefficiencies and inequities, and what should be done about them?

Apply these questions both to infrastructure investments and service provision policies. The answers will typically generate a wide-ranging agenda of urban transport policies that are both pro-growth and

Box 22.4. Infrastructure Development and Rural Incomes in Bangladesh

A study of 16 villages in Bangladesh shows how the development of infrastructure—roads, electric power, banks, markets, schools, and health centers—affects the incomes of rural households. The study identified which villages had and had not benefited from the provision of public infrastructure. With other factors controlled, the study found that greater infrastructure development was associated with a one-third increase in average household incomes. Crop income increased by 24 percent, wage income by 92 percent, and income from livestock and fisheries by 78 percent. These three changes largely benefited the poor.

Source: World Bank (1990).

Box 22.5. Transportation Problems Facing the Urban Poor

- ⊗ The poorest groups rely heavily on NMT, including walking, since NMT modes are more affordable, accessible, and safer. Facilitation of the use of NMT is often neglected, however.
- ⊗ Poor neighborhoods are often severed by new highways, obstructing access to workplaces and social services.
- ⊗ The high cost of motorized transportation relative to cash income means that even small changes in fares and service levels can significantly reduce the mobility of the urban poor.
- ⊗ Protected public transportation monopolies (whether publicly or privately owned) tend to increase costs and fares, or, with fare subsidies, reduce service quality and sustainability.
- ⊗ Restraints on the informal transportation sector often limit viable and affordable services to the destinations of the poor.
- ⊗ Increased use of private motorized vehicles, which the poor are largely unable to use, marginalizes or displaces the NMT and public transport upon which the poor depend heavily.
- ⊗ Not only do the poor not benefit directly from interventions focused on the use of private vehicles, but they also often suffer a disproportionate share of the external costs of such interventions.
- ⊗ Women are often badly served by public transportation, as much of their travel is at off-peak times and off the main transportation routes, where services tend to be poorest.
- ⊗ Sexual harassment of women, both as pedestrians and as passengers, is often a serious problem (see box 22.11).
- ⊗ Poor people are especially vulnerable to injuries caused by motor vehicles, partly because they are the primary users of NMT—especially walking.
- ⊗ Poor people also have high exposure to pollution from motor vehicles, as they often live or work (for example, as NMT providers or street vendors) close to major roads.

pro-poor, yet are consistent with the fiscal capabilities of even the poorest countries. For a summary of poverty-reducing interventions and the impacts of urban transport interventions, see table 22.4.

Focusing urban transport infrastructure investments

Growth-focused road investments. Urban governments need a strategic vision for the transport system they desire, one that manages scarce available road space and prices fares efficiently. When this does not exist, the approach to such problems as emerging bottlenecks is piecemeal. Not only does it do nothing to discourage traffic—it may actually encourage more. Some of the most intransigent urban transport problems arise where the space devoted to movement is both inadequate and poorly structured, such as in Bangkok. The availability of adequate road infrastructure is a prerequisite for efficient urban movement, but there is a fine balance to be struck. Estimates of the benefits of road investments must make allowance for the congesting effects of the additional traffic that such investments will generate.

Over-provision of road space typically benefits the wealthy at the expense of the poor. Because conventional transport planning is largely driven by the willingness of potential users to pay for the new services or facilities, relatively low value tends to be assigned to investments that cater to dispersed or off-peak transport needs, which often include those of the very poor and of women. Moreover, much of the travel of the poor is by foot, and receives little attention in conventional transport planning. These problems can to some extent be handled by properly incorporating all modes of movement in transport programs and by assigning a common value to all non-working time savings for evaluation purposes. Even participatory planning methods may fail to improve matters if the process under-represents women, the disabled, or the very poor.

Poverty-focused road investment. To some extent, investments in road infrastructure can be focused to specifically benefit the poor, as follows:

- ⊗ To improve public transport, concentrate road rehabilitation expenditures on major public-transport routes, as in the Kyrgyz Republic.
- ⊗ To make nonmotorized transport safer and faster, invest in the provision or segregation of NMT routes or rights-of-way, including pedestrian routes. Examples include recent projects in Lima, Accra, and elsewhere. Provision for NMT plays an important role in both rural and urban contexts. This point is discussed in detail later in this section.

- ⊃ To improve access to poor or informally settled areas, direct road expenditures specifically to those routes, as in the case of the Pueblos Jovenes of Lima, Peru (see also case study 6).
- ⊃ To generate income for poor people and create a sense of local ownership conducive to good maintenance, use employment-intensive methods, particularly in informally settled areas such as Hanna Nassif in Dar es Salaam (Howe and Bryceson 2000).

Urban rail investments. Investment in mass rapid transit (MRT) systems has a direct effect on the poor, in terms of the fares and quality of the transport that they receive and in terms of the consequences of these factors on the location, employment, and lifestyle of the poor. It also has an indirect effect on their incomes, through its impact on the efficiency of the urban system and the burden of the system on city finances. Subsidies to MRT, however, may militate against the interests of the poor unless it is clear that the subsidies are targeted to the poor, that they do not precipitate declines in service quality that would be more harmful than higher fares would be, that they do not leak away through inefficient operation,

Table 22.4. Poverty-Focused Urban Transport Interventions

<i>Specific Intervention</i>	<i>Nature of Impact</i>	<i>Cost/Fiscal Impacts</i>	<i>Ease of Implementation</i>	<i>Examples</i>
Urban road investments				
Maintain public-transport routes	Faster/cheaper public transport	Moderate	Easy	Kyrgyz
Pave in poor areas	Access for public transport	Moderate	Easy	Lima
Sidewalks	Fewer fatalities and injuries	Low	Moderate	
Bicycle tracks	Safer trips; encouraging NMT	Moderate	Moderate	Lima; Accra
Separate NMT on existing roads	Safety; speed for all modes	Low	Difficult	Dhaka; Guangzhou
Urban rail investments				
Concessioning	Improved service to users (fare effects uncertain)	Cost saving	Moderate	Rio de Janeiro; Buenos Aires
Redundancy payments	Protects poorer workers	Small	Moderate	Buenos Aires
Resettlement arrangements	Protects disturbed residents from consequences of development	Small/ medium	Difficult	Mumbai
Convert suburban railways	Improves speed and frequency	Moderate	Moderate	Fortaleza, Brazil
Public-transport service planning				
Introduce competition in public transport	Cost reduction; service growth	Cost saving	Moderate	Uzbekistan; Kazakhstan
Public transport interchange	Faster, safer trips	Medium	Moderate	Pusan; Manila
Prioritize bus services	Faster, cheaper trips	Low	Politically difficult	Bangkok
Develop informal sector	Lower-cost service	None	Moderate	Uzbekistan
Finance strategies				
Subsidy finance reform	Line agencies to finance exemptions; better focus of support	Uncertain	Moderate	Russia
Passenger transport fare integration	Enables use of faster modes of transport	Low	Moderate	Sao Paulo; Fortaleza
Congestion pricing	Direct impact small; provides basis for public-transport improvement	Generates revenue	Difficult	Kuala Lumpur; Bangkok

and that they do not create an unsustainable fiscal burden. Integration of MRT with other transport systems brings its own challenges (see box 22.6).

The main factor to consider when evaluating a potential MRT project is what modes of public transport the poor actually use. In many cities in East Asia, buses are the transport of the poor and rail the transport of the relatively affluent. In many Latin American cities, in contrast, the income of rail users is much below the average income and is very similar to that of bus users. The pattern is one of great variety, emphasizing the importance of relating policies to poverty-focused objectives on a case-by-case basis.

Designing urban transport service strategies for the poor

Public transport as social service. In most socialist economies, public transport was traditionally viewed as a basic social service. This philosophy emphasized mobility as a “merit good,” a social imperative to be provided to all through a complete and integrated public-transport network. The traditional system would also offer extensive fare reductions or exemptions for disadvantaged groups.

Maintaining a basic social network such as this may depend on high levels of operating subsidy as well as state contributions to finance capital. One clear problem is that of unprofitable locations, which tend to be in service areas of the poor. The result, even in a merit good system, may be to drive up transport costs for the poor when their less profitable routes are cut back or dropped from service. One way to approach that problem is the single private operator incentive. Public authorities who wish to supply services in unprofitable locations and to sustain urban integration have an incentive to employ a single private operator, either under a management contract or under some form of system concession. Private operators, in turn, respond positively because they do not wish to abandon any part of their monopoly domain. In many African countries, attempts to maintain social obligations in the absence of a fiscal basis for support have resulted initially in the traditional suppliers serving only those with fare concessions (who may not be the very poor), and ultimately in the bankruptcy and disappearance of the supplier.

Fare controls and general subsidies. Another common response to the heavy burden of transport costs borne by poor people is for government to control public transit fares, on the grounds that prices above some threshold level are an unacceptable burden to the poor. Where governments control fares without making any accompanying fiscal provision for subsidies, operators are forced to cross-subsidize unremunerative services with remunerative ones. Note that in practice there are often no profitable services to fund the unprofitable ones. In these circumstances, the main effect of fare controls is to reduce the quality and eventually the frequency, coverage, and capacity of public-transport service.

Use surveys to ask poor people if they consider themselves hurt more by the low availability of transport or by its price, and if they are willing to pay more than the existing regulated fares to get better service. Where the poor are prepared to pay more, policymakers should consider the likely supply outcomes for different levels of fare intervention and subsidy, and should set fares that are consistent with demand-driven outcomes rather than apply some normative concept of an affordable fare.

Even where there is a fiscal justification for subsidies, whether subsidies are an appropriate use of funds depends partly on the relative efficiency with which funding can be targeted in different sectors

Box 22.6. Integrated Public Transportation Systems and the Poor

The restructuring of bus services to feed into higher-capacity trunk links (either rail or bus) is commonly advocated as a central part of an integrated urban transportation development, as in Singapore and Curitiba (Brazil). But such restructuring tends to increase the number of legs that make up a single trip, each of which can involve separate payment. This can increase total fare costs, particularly for those passengers (often the poor) living in locations remote from the MRT line. One solution to this may be the introduction of multimodal through-ticketing systems, which have been shown in a number of countries to yield high benefits to users. A multimodal system may be difficult to achieve where there are a number of independently operated modes. It tends to be easiest to achieve when the bus industry is relatively highly concentrated, as in many Brazilian cities. Even where such a system can be implemented, adverse distribution effects on the very poor may occur if the effect of incorporating a high-cost/high-fare metro in a revenue pool is to increase fares. The lesson is that, wherever integration is attempted, it is necessary to first carefully analyze and design fare structures and cross-modal revenue support.

and partly on the political and practical feasibility of taking poverty-reducing actions elsewhere. Two factors argue against using a general transport subsidy. First, users of a particular mode of transport may have wide variations of income. Second, substantial evidence indicates that a large proportion of government subsidies to public transport leaks to public sector monopoly operators, either through inefficient operations or through operators and organized labor capturing the subsidy.

Targeted subsidies. An alternative approach is to treat transport supply more as a commercial business, and to target subsidies explicitly at disadvantaged individuals in the form of tickets pre-purchased by relevant social agencies. The transfer of responsibility for social subsidies from the accounts of the transport operators to those of the relevant line agencies is being widely advocated as a means of addressing the decline of public service in many of the countries of the former Soviet Union.

This approach not only imposes a lesser fiscal burden but also has the merit of giving clear signals and incentives to operators to adjust their services and fares in such a way as to maintain their equipment in operation. There is one potential disadvantage: the approach does not provide a clear institutional channel to address strategic and structural considerations concerning the role of public transport in urban development strategy, and the response to the various externalities that impinge on urban public transport. Counter this by using competitively tendered franchises for service provision, allowing public authorities to retain some controlling influence on the structure of services provided.

Financing concessionary fares. Many countries have extensive lists of passenger categories qualifying for free, or concessionary fare, travel. Rarely is there any specific explicit mechanism for remunerating suppliers for these fare exemptions or concessions. This has two effects. First, it means that some passengers are paying more or receiving poorer service than would otherwise be the case. As choice of transport is highly income-related, this effectively results in subsidy of the poor by the poor. Second, nontransport line agencies, such as health and education agencies and the police, may have a vested interest in maintaining such mechanisms, which they might not support to the same extent if they had to finance them from their own budgets.

The lesson here is that, in the interests of poor people, any public-transport fare concessions or exemptions should be carefully considered in the light of other sources and uses that might be made of the resources involved. This consideration is probably best ensured by making the line agencies that benefit responsible for financing concessions, with the obligations on transport operators contingent on receiving appropriate explicit compensations.

The informal sector. Regulations that constrain supply and limit the opportunities for alternative providers are generally regressive. The existence of informal sector services using smaller and cheaper vehicles may often be traced to excessive government regulation. To the extent that the informal sector provides a lower quality of service at a lower price than the formal sector can achieve, or even provides a valued service at above the regulated fare, it may exemplify a more realistic matching of supply to demand. However, some problems—notably pollution and congestion—may be exacerbated by expanding the informal transport sector.⁷ We therefore recommend that policies for the informal transport sector should explicitly take into account the impact on poor people. Policy measures dealing with environmental or congestion impacts may choose to limit access to particular locations, or to enforce environmental regulations. Another problem warranting specific attention is traffic safety (discussed later in this section).

Competition in supply. Effective competition in or for public-transport markets may both decrease costs and increase the supply of services to poor people. For example, the introduction of competition for franchises in major cities in Western Europe has reduced costs per vehicle kilometer by up to 40 percent in real terms, and has allowed higher service frequencies to be maintained even within constrained budgets than under traditional monopoly supply mechanisms. This approach is now being seen as practicable in developing economies and transitional economies. The capability to combine some central service coordination with competitive supply varies from country to country, according to administrative capability and legislative law enforcement, so no single pattern fits all countries, but the lesson is that attention to the potential for competition can improve the services the poor demand (see case study R.7).

Multisector interventions

Even where they are designed to serve low-income areas, the operations of land markets may result in the benefits of transport improvements passing on to others. Insofar as a mass rapid-transit system reduces travel time to central areas of the city, it will tend to increase land values along its routes and therefore land rents at these newly advantaged locations. The poor only capture those benefits under certain circumstances: if, as renters, they rent at a fixed rate not tied to the value of the land; or if, as owners, they acquire the windfall capital gain and are not taxed into selling. This protection can be achieved if public housing programs and mass transit developments are undertaken jointly by a development authority with a specific responsibility for the welfare of the poor. This has been done in a systematic way in Singapore, and sporadically and less systematically in a number of other cities, such as Fortaleza in Brazil.

Targeted interventions to improve accessibility in urban areas could be considered as an integral part of a more comprehensive intervention. One example of this is a multisectoral urban slum upgrading program that improves housing and neighborhood infrastructure in an integrated way, with tenure security and legalization. Regulatory reform to make zoning laws and building codes more flexible can increase the number of places where the poor may choose to live, helping alleviate their travel requirements (see chapter 16, “Urban Poverty”). Given that the central policy objective is to improve the overall welfare of the poor, sectorally-based actions must be considered together if they are to benefit and not suffer from the major sectoral interdependencies, including interdependencies of cause and effect.⁸

22.4.5 Related policy objectives

Generating employment for poor people

The transport industry is a major source of employment for poor people because it requires massive amounts of unskilled labor. Transport-related activities commonly account for 5 percent to 8 percent of formal sector employment, and in some countries, total employment (formal and informal) in the sector is estimated at 15 percent to 20 percent. Many transport services used by poor people are provided by the poor, such as bechaks, jitneys, and rickshaws. Many other transport-related services, such as vehicle maintenance, cargo handling, warehousing, and roadside food services, require only semiskilled labor. Transport construction projects also employ many unskilled workers, and could usually employ many more if labor-intensive technologies were used.

When equipment-intensive construction methods are used in rural road projects in low-wage countries, the cost of equipment amounts to 60 percent to 65 percent of total project cost, with the wage bill amounting to about 5 percent. If, in the same project and for the same quality and overall cost of output, labor-based methods were used, the cost of equipment would amount to 30 percent to 40 percent of total project cost and the wage bill 30 percent to 40 percent. When the volume of labor-based projects becomes large—say about 10 percent of total investment in infrastructure—this can have a measurable impact on both the local and the national economy, as evidenced by macroeconomic studies carried out in Madagascar and Uganda.

Road construction and maintenance has proved an important potential source of employment for women in countries such as Bangladesh, Lesotho, Peru, and Zambia (see box 22.7). In order to provide equal employment access for women it is necessary, at least initially, to provide incentives to contractors to hire women (for example, by requiring that a certain proportion of the labor force be women) and to design the work to facilitate the participation of women (for example, by arranging for women to work as close as possible to their villages, dividing the work so that men can handle the heaviest physical tasks, and arranging childcare services).⁹

Pro-poor transport policies should recognize the rights of workers to a decent wage and safe working conditions. Policies should also cover the scope of public works programs that offer food or cash to poor workers in exchange for their labor on transport civil works projects (see chapter 17, “Social Protection”). Properly designed, labor-intensive public works programs can be an effective way of offering self-targeted safety nets and improving infrastructure. Examples of two successful public works programs that have a heavy emphasis on roads are the Maharashtra Employment Guarantee Scheme in

India and the Trabajar in Argentina (World Bank 2000a). These programs provide important insurance benefits to poor people because employment is guaranteed.

Improving traffic safety

Motorized vehicles are the modern plague of developing countries. These countries own 40 percent of the world's motor vehicles, but account for 86 percent of its road fatalities—and the situation is getting worse. While industrialized countries have seen a consistent fall in annual road fatalities, the death toll in most developing and transition countries continues to grow 3 percent to 5 percent per year. WHO estimates that, by 2020, road accidents will have moved up from ninth to sixth place as a cause of death worldwide, and will be in second and third place respectively in terms of years of life lost and disability-adjusted life years.

If current trends continue, road accidents will soon be the third leading cause of death worldwide. Road accidents cause around 1 million deaths around the world every year plus 10 to 15 million injuries. Seventy percent of the deaths occur in developing countries. Thirty-five percent of those killed are children. In many low-income countries, road accidents are now the leading cause of death among people aged 3 years to 35 years old, and result in more disabilities than any other type of accident or illness. Sixty-three percent of Brazilian orthopedic and trauma hospital beds are occupied by traffic accident victims. The annual fiscal cost of road accidents is enormous, estimated to average approximately 1 percent of GNP in many countries. In some countries it is much higher, costing, for example, almost 5 percent of GNP in Malawi. In Vietnam, traffic accidents are the leading cause of accidental death, with fatalities far outnumbering the deaths caused by communicable and other major diseases. Road-related deaths per 10,000 motor vehicles are highest in African countries, particularly Ethiopia, Tanzania, and Uganda. The total economic cost of road accidents in developing countries is estimated at about US\$65 billion per year—more than the entire annual flow of official development assistance.

Poor people are among the most vulnerable road users, and road accidents disproportionately affect them. The poor have little choice in the type of motorized transport service they can afford, commonly being obliged to travel in old, ill-maintained, and overcrowded vehicles. In developing countries, where many people do not have access to motorized vehicles, more than 50 percent of road-accident victims (injuries and fatalities) are pedestrians, motorcyclists, bicyclists, and occupants of other nonmotorized transport (NMT). In Africa, pedestrian fatalities account for about 40 percent of all road fatalities. Data on traffic safety are deficient in most countries because of serious under-reporting and under-recording of traffic accidents. There are strong indications that accidents in which material damage occurs are reported and recorded more frequently than accidents in which there is little damage, even if serious injury occurs. Even where a fatality occurs, police will often not record the death if the victim cannot be identified.

The transport services that poor people use are often underinsured, if they are insured at all, and poor households typically do not carry private insurance. A non-poor family can become poor almost

Box 22.7. Generating Employment for Women in Labor-Based Road Construction in Lesotho and Zambia

The out-migration of men to work in South Africa has made road construction contractors more willing to employ women. A study completed in December 2000 found that large numbers of women have been employed on road construction projects and that the experience has generally been positive. Contractors indicated their willingness to contract women, but pointed out that the greater leniency given to women workers—particularly to mothers with small children—in the event of tardiness can put an extra burden on male workers. The study provided concrete guidelines on how to plan road construction to effectively integrate women workers.

In Zambia, many donor agencies now specify quotas for the hiring of female workers on the road construction projects they finance. The feedback from contractors has generally been positive, and women have been promoted to administrative and management positions. Women have proved particularly successful as road toll collectors, where they tend to be more efficient and honest than men.

In both countries it has been found easier to contract women in food-for-work programs. When payment is in cash, men are more likely to take the jobs for themselves.

Source: World Bank Gender and Transport Web site (see section on Grants and Pilot projects):
<http://www.worldbank.org/gender/transport>

overnight if the breadwinner is killed or disabled, but the situation can be even more disastrous for a poor household. Moreover, accident survivors frequently suffer physical or psychological damage that can remain with them for the rest of their lives (see also chapter 17, “Social Protection”).

Most traffic accidents are due to a combination of factors. Human failings, such as speeding, driving under the influence of drugs or alcohol, and lack of seatbelt compliance are major contributing factors in high-income countries. These factors are also influential in many developing countries, but other factors also come into play—vehicle defects, lack of driver education, infrastructural deficiencies, and inattention to NMT are also very significant. Inferior design standards, rapidly increasing motorization, and the absence of regulation, enforcement, and maintenance also exacerbate the risk of traffic accidents in low-income countries. Road safety is generally regarded as primarily a government responsibility, because the market has failed to address it; but the private sector has carried out some successful initiatives (see box 22.8).

A strategic approach to road safety should tackle the causes of road accidents and reduce the severity and consequences of accidents (see box 22.9). Many specific interventions can improve road safety, but few developing countries have succeeded in improving safety in a systematic fashion. Because road safety is a multisectoral problem, ministries of works often perceive road safety programs as low-priority components in international development assistance programs. This indifference is complicated by a lack of commitment to address the problem in a comprehensive manner. Another problem is lack of capacity: many road-safety programs are not tackled because the agency in charge of road safety issues (often the transport ministry or the traffic police) typically lacks the mandate and professional capacity to establish a broad-based coalition of stakeholders willing to address road safety as the cross-sectoral social and poverty issue that it is.¹⁰ This is true whether the responsible agency is the transport ministry or the transport police. The result of these complicated failings is a piecemeal approach to road safety, even including treatment of accident black spots and the use of road safety audits and training.¹¹

Three factors are essential to any approach to road safety (see also Jacobs, Aeron-Thomas, and Astrop 2000):

- ⊃ Improve accident data collection and analysis. Without the right numbers, policymakers and decisionmakers will not grasp the magnitude nor the implications of the traffic safety problem.
- ⊃ Establish a broad-based national coalition involving transport, enforcement, education, and health agencies; civil society associations; and the private sector.
- ⊃ Ensure the effort is financed. A sustainable financing mechanism is critical, and should ideally involve private sector actors, such as the insurance industry, car manufacturers, and oil companies.

Facilitating use of nonmotorized transport

In most developing countries, NMT gets very short shrift. We see it in policy, where there is a mismatch between the significance to low-income people of walking and nonmotorized transport and the attention given to these modes, particularly in infrastructure design and management. In poorer countries, more than half of all trips are undertaken on foot, yet pedestrians are typically treated peripherally. Cycling offers a relatively inexpensive means of improving poor people’s mobility, but is often inadequately planned or provided for. In rural areas, paths and tracks provide shortcuts between communities and are heavily used by pedestrians and load carrying animals; spot improvements on them can have a high impact on local

Box 22.8. Reduced Pedestrian Fatalities under Toll Road Concession in Brazil

The Via Dutra toll road concession in Brazil has instituted a traffic safety program that has cut pedestrian and traffic fatalities by about 40 percent in three years and reduced other pedestrian accidents by about the same amount. In September 2000, the company won the Volvo Safety Award for its class, sponsored by the International Bridge, Tunnel and Turnpike Association (IBTTA).

The company has also disseminated information on safe road-use practices to some 200,000 school children, and has taken innovative measures to separate pedestrians from vehicle lanes and to match public bus-stop locations with pedestrian overpasses.

Source: International Finance Corporation.

Box 22.9. Road Safety Strategies for Low-Income Countries

- ⊃ Raise public awareness of the risks involved with transport, especially road safety issues, through public campaign and education programs, beginning in primary schools
- ⊃ Reform the institutional setup, with clear legislative guidelines that emphasize the responsibilities of police, transport, public works, and insurance agencies for the coordination of safety programs at the local and national levels
- ⊃ Protect NMT traffic, including pedestrians and disabled persons, through proper road design and, where possible, physical separation from motor vehicle traffic
- ⊃ Increase the effectiveness of the enforcement of traffic safety rules and vehicle safety inspection, and improve the reporting and recording of accidents
- ⊃ Ensure adequate funding for the safety components of infrastructure investment programs
- ⊃ Eliminate infrastructure safety deficiencies
- ⊃ Develop effective means of managing ribbon development, to reduce the traffic safety risks incurred by activities of the poor in rights-of-way
- ⊃ Identify champions in the public and private sectors to advocate and marshal resources for transportation safety in general, and road safety in particular

social and economic development. It is important, in terms of poverty impact, to engineer interventions that mitigate the displacement of NMTs by motorized vehicles and to facilitate NMT usage; and it is critical to establish a policy stance that recognizes the role of NMT for poor groups (see box 22.10).

Walking. For short trips, walking is an important mode of travel in most societies, rich or poor. For longer trips, however, walking reflects the lack of options of low-income persons. Recent studies show that between 25 percent and 50 percent of trips in the major Indian cities, and around half of all trips in major African cities, are entirely on foot, and that trips undertaken primarily by public transport also involve significant walking distances. In medium-sized and smaller cities, the share of all-walking trips is 60 percent to 70 percent.

Despite the importance of walking, the attitude to pedestrians is often hostile or neglectful. Pedestrian space is continually being eroded by traffic or commercial uses. City authorities find it difficult to manage and control street market and footway activities. They could improve their management of these activities, however, by choosing to take a functional approach to road hierarchy; for example by assigning some roads primarily to pedestrians and market activities and others to fast-flowing motor traffic. Unfortunately, the trend has been toward removing these footway activities altogether.

There are many ways to improve conditions for pedestrians, including:

- ⊃ building paved tracks for pedestrians (and steps should hilly terrain demand them) in low-income area upgrading schemes;
- ⊃ ensuring that road rehabilitation schemes not only upgrade the carriageway, but provide paved sidewalks (see case study R.4);
- ⊃ avoiding the common mistake in road improvement schemes of widening the road at the expense of pedestrian space;
- ⊃ repairing neglected sidewalks;
- ⊃ introducing measures to improve the safety and security of pedestrians; and
- ⊃ improving pedestrian and NMT accessibility to public-transport terminals and stops.

On low-volume roads where the physical separation of pedestrians and bicyclists cannot be justified, priority must be given to reducing potential conflicts. Measures to achieve this include:

- ⊃ introducing traffic-calming measures where roads cross built-up areas;
- ⊃ providing marked pedestrian and NMT space on long bridges;
- ⊃ installing adequate warning signs where footpaths and tracks cross;
- ⊃ providing road safety training for motorists, bicyclists, and pedestrians; and
- ⊃ educating pedestrians and bicyclists to raise their visibility at night (for example, by wearing reflective clothing).

Box 22.10. Improving School Attendance through NMT Policy and Action

In rural South Africa, many primary and secondary school students live more than 8 kilometers away from their school. Few schools operate school buses or offer boarding. As a result, students in remote areas often cannot attend school, or can attend only with great difficulty. Given the time it takes to get to and from school, they have little time to complete school assignments or help their families.

In an effort to improve school attendance, South African Minister of Transport, Dullah Omar declared, “The time has come to promote bicycle transportation as a strategic solution.” In response, Afribike, a South African-based NGO that promotes cycling and bicycles, partnered with provincial and national transportation departments to launch Learners on Bikes. Costing about US\$300,000, this program will in its first 12 months assist 10,000 students to buy a bicycle. It is funded by the National Department of Transportation and executed through the National Road Agency in collaboration with Afribike and local communities.

Learners on Bikes will enable primary and secondary school students to purchase refurbished bicycles through a combination of cash and credit (minimum US\$12) and sweat equity, working on the local refurbishment and assembly of bicycles under the program. While no student will be excluded from the program, preference is given to students traveling the greatest distances to and from school, and within this group, to female students. Qualifying students will take part in a training course highlighting the benefits and opportunities of cycling, safety and maintenance/repair issues, and the environmental and health impact of cycling.

Students will purchase the refurbished bicycles through 10 Afribike retail outlets, located throughout South Africa's nine provinces. The retail outlets will be community-owned franchises, run by female instructors. The standing of women in their respective households and communities makes them a preferred, although not exclusive, partner for the program. Each outlet will receive the necessary tools and training to turn it into a sustainable microenterprise after an initial 12-month start-up phase. A certain percentage of sales income through sales will be returned to Afribike, which as the franchiser will seek to recover the initial setup costs.

Each outlet will undergo periodic three-month assessments to establish its commercial viability. Close monitoring of the program should enable any necessary strategic adjustments in the approach to be made, and yield valuable lessons for scaling up the initiative.

Source: Afribike

Cycling. For short or medium-distance trips, the bicycle is normally a much cheaper form of transport than formal or informal public transport. In the context of a World Bank project in Lima, it was found that a journey by cycle costs less than one-fourth than an equivalent bus ride.

This calculation does not take into account accident risks, nor the infrastructure needed for the bicycle (or the bus). Neither does it measure the travel time benefit gained by the cyclist, who will generally travel faster than a bus rider for trips of up to 5–7 kilometers because of the door-to-door capability of the bike and the absence of waiting time. The calculation also does not measure the environmental benefits of the nonpolluting bicycle. Despite these apparent advantages of the bicycle, however, cycling is rare in many countries or declining where it used to be common. This may be due to such factors as cultural attitudes that grant bicycles low status; the common misconception that the bicycle is much slower than other forms of public transport; the risk of bicycle theft; and above all, the perceived discomfort and the far greater accident risk compared with taking the bus. These latter two factors increase in importance as anti-poor transport policies lead to motor vehicles crowding out nonmotorized transport from often scarce road space.

In rural areas, health extension workers, teachers, traders and middlemen often actively demonstrate the viability of the bicycle as a mode of transport. Sadly, such practices often go unnoticed or are perceived to be primitive or eccentric.

To overcome these problems, programs in Ghana, Mozambique, Peru, the Philippines, and Vietnam have attempted to promote the acceptability and use of the bicycle by:¹²

- ⊃ providing bicycle lanes and constructing segregated bicycle tracks;
- ⊃ carrying out spot improvements on paths and tracks in remote areas;
- ⊃ introducing modern traffic engineering standards and educational campaigns to improve bicycle safety;
- ⊃ abolishing tariff barriers that regard bicycles as luxury goods or protect inefficient local manufacturing;
- ⊃ providing guarded bike parking facilities;
- ⊃ launching microeconomic-finance schemes to enable low-income persons to purchase bicycles;
- ⊃ launching promotional campaigns to communicate the advantages of bicycle use; and

- strengthening institutions within government departments to cater to the needs of cyclists.

Reducing gender inequality

A pro-poor national transport policy must explicitly tackle gender inequality in transport. This is especially the case in many low-income countries, particularly in Africa, where there is a vast cultural division of labor and economic power within households.

The transport needs of poor women are often far more acute than those of poor men simply because of the gender divisions within households, which directly reinforce the gender inequality in economic status (see chapter 10, “Gender”). Poor women in low-income countries have less access than men to private vehicles and public transport, and even to nonmotorized vehicles. As a result, women, who take almost exclusive responsibility for household and child-rearing tasks, also spend long hours in transport work, leaving little time and energy for income-earning and social activities (see table 22.1). Excessive head- and back-loading may also cause long-term health problems. Because women lack access to transport, they tend to benefit less than men from most transport infrastructure improvement programs. Transport interventions that respond more to women’s needs therefore can help women expand their income-earning activities, increase their productivity, and improve their quality of life, and in so doing can promote gender equality. To achieve these changes, it is essential to identify the specific transport needs of women and to devise cost-effective interventions.

In urban areas, the transport problems faced by women often involve personal vulnerability. In many major cities, women traveling outside their home have good reason to fear they may become victims of violence or sexual harassment. This is true whether they walk or use public transport. The insecurity of the urban environment is a major deterrent against travel to work and school, and a particularly severe problem for women working late at night (see box 22.11).

Potential options to address gender issues—both in transport and non-transport—include the following:¹³

- Eliminating gender bias by integrating the transport needs of women into the mainstream of transport policy and planning.
- Making intermediate modes of transport, including nonmotorized vehicles such as bicycles, wheelbarrows, and animal carts, available for women to buy in areas where there is no affordable alternative to head-loading. These modes may possibly be financed through microcredit schemes (see case study R.5).
- Conducting gender-awareness sessions to convince policymakers, transport professionals and male household members that gender inequalities in the transport sector must be addressed.
- Extending safe, affordable, and culturally acceptable transport services to women users. In India, for example, commuter trains in many cities reserve a carriage for women only.
- Locating facilities (for example, water supply) closer to communities to reduce the need for transport.
- Ensuring women amply participate in the planning and design of transport investments and other infrastructure development programs.

Box 22.11. Sexual Harassment and Violence in Peru Constrains Women’s Mobility

A study in Lima, Peru found that one of the major constraints on women’s mobility was the fear of sexual harassment and violence against pedestrians and on public transport. This was a particular concern on transportation operated by informal enterprises. Female students reported that when riding on public transportation they would carry nails and open safety pins in their backpacks to wield against unwelcome contact from male passengers. Buses are notoriously unsafe. Women reported frequent, open sexual harassment and even rape on buses despite the presence of other passengers. The situation is so extreme that even very poor parents report they must save money so their daughters may travel to university by taxi, and avoid the unsafe buses. In an effort to enhance security on public transport, some companies are now operating teams of male and female drivers and conductors. The participants in the survey found this to be a positive intervention.

Source: World Bank Operations, Peru.

- ⊃ Designing road work schemes that facilitate the participation of women, and training women to take supervisory positions (see box 22.7).

Mobility for the disabled poor

Of the various groups of poor people in developing countries, the disabled poor often have the most serious problems accessing the transport system. It can be difficult for them to board buses and to maneuver deftly in crowds. They are particularly endangered by fast-moving vehicles in areas where there are no sidewalks or designated road crossings and where speed limits are not enforced. Moreover, sidewalks and steps are physical obstacles to wheelchairs. Holes and cracks in sidewalks and roads can create peril for the blind.

Key factors that need to be addressed to improve the transport environment for poor people with disabilities include the following:

- ⊃ Institute barrier-free design, supported by standards and regulations that ensure all new investments in transport infrastructure and vehicles are barrier-free.
- ⊃ Make allowances for the needs of nonmotorized transport, such as wheelchairs and hand-powered tricycles.
- ⊃ Remove access obstacles such as curbs and address the lack of walkways within the existing transport system.
- ⊃ Promote the development of mobile services.
- ⊃ Support the creation of representative interest groups to champion the mobility and safety issues of disabled poor people.

HIV/AIDS, transport, and poverty

The transport sector has critical links to the HIV/AIDS epidemic. The early stages of the pandemic in Africa clearly followed major transport corridors. Today, the linkage is perpetuated by transport operators who spend significant amounts of time away from their homes and families. The impact of the sexual behavior of transport operators and of those involved in the construction of transport infrastructure, such as road works crews, is not only felt by themselves, but also by their wives, children, and the members of the communities where they live and work. Ironically, the same mobility and opportunities that are seen as the benefits of a well-functioning transport system are enabling the rapid spread of HIV infection and the terrible deterioration of social conditions, including poverty.

The segment of the population most badly infected with HIV/AIDS may not always be poor, but the impact of infection has important poverty implications. For example, while prime-age males are typically the most infected segment of the population, their wives and children bear the long-term impacts, including subsequent infection.

The public health system cannot address the linkage between HIV/AIDS and transport alone. The incidence of the disease is high among long-haul truckers, whose high mobility makes them a challenging target for a public health agency aiming to reduce the spread of HIV/AIDS. These truckers often travel at night, they move across international borders, and they may purposely avoid urban centers, the site of most public health facilities. But it is important to understand that these men are not entirely out of reach. They work within a well-developed institutional support structure that includes border crossings, rest/fuel stops, terminals, and transport associations. These may provide important entry points for prevention activities. At these places, in partnership with public health agencies, transport associations and government transport agencies can distribute condoms, treat sexually transmitted diseases, offer voluntary counseling and testing, and carry out public awareness and education campaigns.

The recognition that the transport sector has an important role to play in HIV/AIDS prevention has prompted some countries and their trucking industries to undertake prevention activities specifically targeted at the transport sector and transport workers. Examples of interventions include:

- ⊃ Incorporating HIV/AIDS prevention clauses in public works contracts (for example, mandating prevention training for construction and maintenance teams).
- ⊃ Targeting education and prevention campaigns through operators and associations (see box 22.12).
- ⊃ Carrying out public health activities in partnership with border transport institutions and communities (for instance, customs officials and sex workers).
- ⊃ Creating interministerial steering committees, including representatives from the ministry of transport, to plan and undertake cross-sectoral prevention programs.
- ⊃ Establishing transport-specific social safety-net programs in cooperation with private sector companies and transport associations.

Environmental concerns

Environmental protection is an essential part of the task of improving the quality of life of all people, including the poor. But when trying to incorporate these protections, it is vital to recognize and address the tensions between poverty reduction, transport, and environmental objectives.

In urban areas, many of the public-transport vehicles on which poor people depend are old and run on highly polluting leaded gas. Lead ranks as one of the most serious environmental threats to human health, especially in poor urban areas. Perhaps the most alarming effect of lead pollution is on the mental development of children, and poor children are most at risk because malnourishment intensifies the body's absorption of lead. Leaded gasoline accounts for between 80 percent and 90 percent of airborne lead pollution—yet phase-out is technically simple and highly cost-effective, and in some cases could actually save governments money since most fuel on the world market is now unleaded and cheaper than leaded fuel (Lovei 1999).

It may be ineffective to introduce higher vehicle standards, such as the Euro 2 engine requirements, in developing countries where most mechanics lack the technical capability to maintain the more sophisticated electronics of modern engines. Even when advanced vehicles can be maintained, their extra sophistication increases costs and fares, which may induce competition from an informal sector using smaller and more polluting vehicles. Similarly, in some countries, including Tanzania, liberalized entry into the public-transport sector, has reduced public-transport fares but may threaten environmental quality.

The most appropriate policy response to these tensions is not simply to forego the benefits of competition by maintaining traditional monopolistic supply arrangements, but to design competitive market arrangements that protect sensitive locations. An example of this is the bus franchising arrangement in Santiago, Chile. Here the capacity and quality of vehicles entering the most environmentally sensitive areas is controlled, but the right to operate those services is put out to competitive tender. The main concern for a poverty-reduction strategy is to identify the particular forms and locations of environmental impact that are most harmful, and to devise mechanisms that best reconcile environmental protection with the continued provision of affordable public transport.

Deforestation and soil erosion are two key environmental concerns in rural areas. Building new roads in forested areas can result in corridors of deforestation several kilometers wide.¹⁴ By dramatically reducing the cost of transporting agricultural goods and increasing the returns to agriculture, the new

Box 22.12. Trucking against AIDS in South Africa

In 2000, nearly 20 percent of the 54,000 employees involved in South Africa's road freight industry received some form of training related to HIV/AIDS. A cooperative effort between the trucking industry and the Learning Clinic (a private education and training provider), the Trucking Against Aids Project works with industry leaders to design training for shop stewards, managers, truckers, and sex workers, and to design mobile, one-on-one training and counseling for industry workers. Training takes place in a variety of situations: inside trucking companies during mealtimes, among trained peers throughout the workday, and through three newly established on-site clinics along major trucking routes. Trainers also move from truck stop to truck stop nationally, delivering one-on-one sessions, crash courses, and 45-minute presentations to drivers and sex workers at key activity hot spots. While it is too early to determine the long-term impact of the program, it is clear from South Africa's experience that there is demand for such programs and the opportunity for the programs to help.

Source: The Learning Clinic

roads in their turn encourage the conversion of forest land to agriculture. The conversion radius is especially large where towns are nearby and soils are good.

Depending on why and where roads are built, they can generate lose-lose, win-lose, or win-win outcomes with regard to development and deforestation. Roads sited in remote forested areas with poor agronomic suitability may be lose-lose propositions because they may expose indigenous people to disruptive forces and expose wildlife to poaching, while generating little in the way of sustainable agricultural development.¹⁵ Roads that open up forested areas that are not too remote and have reasonable agricultural prospects can present difficult win-lose tradeoffs. Many forest areas can support sustained agriculture, and roads into these areas can benefit local populations and may provide employment opportunities for migrants. These economic and social benefits can come at the expense of deforestation, however, the environmental impact of which will depend greatly on what kind of agriculture replaces the forest. Finally, there is the possibility of win-win outcomes from road intensification in noncritical forest areas near markets (Schneider 1995).

In most developing countries today, however, the focus is on rehabilitating existing road networks. Few new roads are being built, particularly in forested areas. Nonetheless, where there are environmental tradeoffs, these have to be addressed up front. For road construction to contribute to the fight against poverty, it must be accompanied by complementary interventions such as land titling and credit programs. Technical mitigation measures, as in Nepal, can address many negative local environmental impacts (see box 22.13 and also Tsunokawa and Hoban 1997).

22.5 Monitoring and Evaluation and Feedback to Policy Design

Monitoring and evaluation are an integral part of the process of policy and project formulation and implementation. Both are critical for improving our understanding of the most effective poverty-reducing interventions (see chapter 3, “Monitoring and Evaluation”). The focus of this section is on issues that are specific to the transport sector.

22.5.1 Monitoring and evaluating transport interventions for poverty reduction

Transport is an intermediate service. Transport improvements reduce poverty not through increased consumption of transport per se, but by improving the quality and security of access to work, markets, and services, and by releasing scarce resources for consumption and production. Tracing the poverty impacts of transport interventions is thus a complex challenge.

Monitoring transport performance has two functions: to ensure transport interventions contribute to the attainment of a country’s poverty reduction objectives, and to diagnose ways in which the performance of the transport sector itself can be improved. The monitoring of poverty outcomes asks the

Box 22.13. Mitigating Tradeoffs in Road Construction and Environmental Outcomes in Nepal

The cumulative impact of road construction due to steep topography, often unstable geology, high rainfall, and intensive land use leads to the destabilization of terrain and arable land. To mitigate such outcomes, Nepal has pursued an array of solutions, including environmental assessments and bioengineering with local plant varieties to control slope erosion, and geotechnical solutions to resolve difficult terrain issues. Much of the success in establishing bioengineering technology has depended on identifying the relevance of vegetation types to roadside households and on facilitating the development of local, small-scale enterprises to supply and plant the appropriate vegetation.

Extensive geotechnical engineering measures and certain forms of bioengineering complement the more traditional civil engineering structures and practices and help to resolve most of the difficulties faced on the road lines. Since 1993, environmental mandates make all development projects subject to environmental screening in accordance with the Government of Nepal’s Environmental Impact Assessment Guidelines. These guidelines address the need for implementing environmental mitigation measures in the surveying, design, construction, maintenance, and operation of road projects, and include environmental mitigation measures, socioeconomic considerations, public participation, and coordination with other institutions. The Department of Roads is now implementing bioengineering works on a routine basis throughout the strategic road network. A complete set of interim standard specifications for bioengineering works was produced in July 1996 by the Geo-Environment Unit of the Department of Roads.

Source: World Bank

question: “What has happened over the last period in a nominated area to a key welfare indicator?” Monitoring of the sector includes tracking the way the indicator changes over time as specific policies and project interventions are implemented. For example, monitoring could observe the change in the number of poor communities once an area attains all-season road access.

More generally, monitoring involves observing changes over time, not only in transport sector inputs (for example, maintenance expenditures per kilometer of road and type of road, and invitations to public consultations), but also in outputs (for example, transport time and fares, and contract awards announced in newspapers or on bulletin boards), transport sector outcomes (for example, marketing of crops, access to health facilities, responsiveness of transport interventions to poor people’s needs, and improved accountability in the transport sector), and poverty reduction outcomes (for example, rural incomes and literacy).

Evaluation asks such questions as: “What net impact did a local road improvement have on infant mortality rates?” Its objective is to assess the extent to which changes in outcomes can be attributed to specific interventions, such as transport policies or projects. We evaluate interventions to establish possible causal links between the transport inputs and final outcome, in circumstances where many influences may be operating simultaneously. This requires a comparison between the situations with and without the intervention. A good example of the linkages that may be traced is shown in case study R.1, which demonstrates a causal link between a rural road investment in Morocco and a range of poverty objectives, including increased rural incomes, female literacy, and health.

Evaluating a project’s ultimate poverty impact is thus an in-depth exercise, and it is one that is rarely undertaken. In practice, the monitoring and evaluation of projects is usually limited to the transport outcomes and outputs that have been shown, in most occasional and in-depth analyses, to be closely associated with the desired poverty-reduction outcomes and impacts. The rest of this section focuses on the monitoring of transport interventions.

22.5.2 Designing a transport monitoring system

Designing a monitoring system involves identifying indicators relevant to the agreed poverty reduction goals, setting realistic targets, and determining the data needed and the frequency of monitoring.

Setting the goals and targets

A country determines its poverty-reduction goals during its policymaking process. When this process involves a wide range of country stakeholders, it will contribute to the building of consensus and commitment to the goals. These goals will subsequently guide the allocation of resources, prioritize national and sectoral programs, and monitor progress. Because transport agencies and users will be held accountable for implementing the agenda, it is important that they are each represented in the policy dialogue and that they design sector interventions that will contribute to these goals. The ways these goals and targets are expressed will vary with country context. For illustration purposes, table 22.6 provides examples of goals to reduce poverty in three dimensions by creating opportunity, facilitating empowerment, and enhancing security (reducing risk and vulnerability).

Selecting the monitoring indicators

After defining the goals of the poverty reduction strategy, the next step is to select indicators to measure progress toward those goals. It is preferable to select only a few indicators that can be measured well on a timely basis and that provide useful information for decision making, rather than selecting too many indicators, measuring them badly, or not using indicators at all. Remember to distinguish between a cross-sectoral core set of indicators for monitoring the overall PRSP progress and a larger and more comprehensive set of indicators for sectoral monitoring.

Impact indicators measure the ultimate effect of transport interventions on well being. They depend on a multitude of cross-sectoral factors. Many of these factors, such as household behavioral responses, are outside government control. Changes in these variables may occur only in the medium to long run,

and it is therefore important to complement these indicators with sector indicators. The sector indicators that will contribute to these poverty-reduction outcomes have been separated into three categories: outcome, output, and input indicators (see table 22.5). The transport outcome indicator may be thought of as a final sector indicator; the output and input indicators may be thought of as intermediate indicators because they provide information on actions taken and measure reflected policy changes that serve to attain the poverty goals. Generally, the monitoring system should include as intermediate indicators a combination of measures, including investment and expenditure levels in the transport sector that contribute to pro-poor growth, some measure of the services generated, the efficiency of their production, how the decisions were made, and if the sector agencies are held accountable.

As noted, the selection of specific indicators should in each country be driven by the specific goals, policy choices, data availability, monitoring capacity, and the views expressed in the participatory processes.

Poverty-reduction impact indicators monitor overall progress on the poverty-reduction goals, and will, in most cases, be set at the national level rather than the sector level. Table 22.6 lists a selection of poverty-reduction outcome indicators, including poverty incidence, income distribution, poverty incidence in rural areas, literacy rates by gender, child and maternal mortality rates, increased transparency in contract award in the transport industry, social capital among poor and vulnerable groups, and proportion of affected population accessible after the last major calamity.

Transport outcome indicators measure the effect of transport interventions that contribute to the attainment of the desired poverty goals. They should provide information relating to policy or program outcomes. Data may include industry competitiveness—transport costs as a percentage of the cost, insurance, and freight (CIF) price of major exports; money income from cash crops; labor participation¹⁶ in road work, by gender; school attendance and teacher availability; and the frequency of preventive-care visits to health clinics. A transport outcome indicator for empowerment can be the extent to which the general public, including poor constituents, feels better informed about transport plans and budgets, and the extent to which poor people’s priorities are reflected in sector interventions. Reducing the risk and vulnerability of poor people from a transport point of view includes improving the safety of public transport, pedestrians, and NMT users, and reducing lead emissions. Outcome indicators include traffic fatalities, ambient lead concentration, transport time to get food from areas of surplus to areas of deficit, and more general indicators such as the affordability of transport services and the percentage of population with all-season road access.

Transport intermediate (input/output) indicators provide information relating to network condition (the percentage of roads in good and fair condition) and average travel time to markets and other important services by affordable modes of transport. They should also measure transport service frequency, fares and costs (personal travel and freight) for different trip purposes and modes, and modal shares (motorized/NMT). In order to assess the extent to which transport interventions respond to the concerns of poor constituents, it is useful to gauge the frequency of public meetings on transport plans, the transparency of budgets and contract awards, and the frequency of transport services to facilitate participation in educational and social events. Increased security is best measured by network condition, transport costs, and availability. Transport inputs include policy measures to encourage user involvement in the sector (public consultations), eliminate fiscal bias against public transport and NMT usage, and improve pedestrian safety. Inputs also include expenditures on network improvements and maintenance.

22.5.3 Using transport sector monitoring to inform policy decisions

The aim of sector monitoring is to provide feedback to inform future policy decisions. That feedback can operate at four levels, informing the design and selection of pro-poor transport interventions by assessing:

- the progress toward set goals and targets, and how these goals and targets are best served indirectly by transport interventions;
- the direct distributional consequences of various types of transport intervention;
- the most cost-effective ways of securing specific poverty objectives; and

- the extent to which different types of transport interventions improve the general quality of transport supply.

Assessing progress toward set goals and targets often happens at the national level. Understanding the way transport interventions best contribute toward this progress requires an in-depth understanding of the linkages between transport and poverty. This is best achieved through rigorous impact evaluation. As part of monitoring, periodic collection of the indicators proposed in Table 22.5 will help assess the sector's contribution to the three main dimensions of poverty: opportunity, empowerment, and security. Some of these indicators will require both quantitative and qualitative analysis, the latter including focus group discussions.

Assessing the direct distributional impact of transport interventions can be done in a crude way by examining the spatial distribution of the direct transport benefits between rich and poor areas, where possible disaggregated by gender. For transport network and service flows that involve connections among many locations or areas, this can pose the problem of associating a transport intervention with a designated geographical area in a policy-relevant way. The more localized the transport intervention, the less this will be a problem. For example, when monitoring improvements in basic accessibility or the facilitation of rural NMT services, the zone of influence is generally confined to the local area. In the urban context, when using zonal disaggregated analysis, structure and present the information to show the distribution of benefits between rich and poor areas, and particularly to check that interventions that look good in aggregate do not have adverse impacts on poorer groups. Such an analysis should also incorporate the distribution of adverse occupational redundancy and environmental effects, and resettlement, which must be mitigated wherever they occur.

Assessing the best way of meeting poverty objectives may be addressed by using cost-effectiveness analysis. In doing this, however, it is important to take into account the status/level of complementary inputs.¹⁷ For example, both transport and health inputs might affect the health outcomes achieved by an improvement of rural access. Put simply, getting to a hospital faster will have no separate effect on the infant mortality rate if the hospital has no qualified staff. Recognizing that there are multiple interactions of inputs can increase the effectiveness of resources allocated to improve poverty outcomes such as health and security. In some situations, the effectiveness of any one sector input, such as transport, will be governed by the weakest link in the chain of complementary inputs (for example, no vaccines at the hospital) needed to change particular poverty outcomes (for example, infant mortality). Some substitution among inputs is typically possible at the margin with little sacrifice of outcome (for example, nursing staff for qualified doctors and travel time for more specialist care), but these are limited. Thus, coordination across sectors can raise substantially the productivity of individual inputs, especially transport, which enters as input into several sectors, especially health, education, and income-earning opportunities.

Assessing the link between transport interventions and transport quality has traditionally involved cost-benefit analysis. That technique remains important, and will be informed by many of the sector performance indicators set out in the Annex. The main significance of the poverty focus is to recognize that the conventions for adding up benefits in that format at best tend to give equal weight to a unit time or money saving to rich and poor alike, and in some cases actually weight benefits to the rich more highly than those to the poor. As discussed above, it is therefore important that the cost-benefit analysis is supplemented by distribution analyses to provide policymakers with a more complete picture of an intervention's poverty impact.

poverty (population on less than US\$1 per day)	a percentage of the CIP price of major exports	good and fair condition	maintenance per km and type of road	reduced when inland transport costs are high due to the poor state of road infrastructure. Regular maintenance is critical to safeguard infrastructure condition and preserve competitive edge
<ul style="list-style-type: none"> ⊃ National income per capita ⊃ Income distribution (poorest fifth's share of national consumption) 	<ul style="list-style-type: none"> ⊃ Maximum distance to public-transport services ⊃ Time spent in travel to work ⊃ Transport costs per capita 	<ul style="list-style-type: none"> ⊃ Average main road speed ⊃ Average cost per freight ton km ⊃ Percentage of roads in maintainable condition that receive regular maintenance ⊃ Public-transport fares ⊃ Public sector transport deficit ⊃ Modal share of non-motorized transport (NMT) 	<ul style="list-style-type: none"> ⊃ Reform of urban public transport regulatory regime ⊃ Expenditure on physical separation measures for NMT ⊃ Availability of microcredit for NMT/IMT ⊃ Removing fiscal distortions to NMT purchase ⊃ Expenditure on improving rural basic motorized access ⊃ Expenditure on rural road maintenance per km ⊃ Percentage of road work that is labor-based (percentage of wage bill in total costs) 	<p>Most of these indicators are readily available from the ministries of transport, trade, or finance</p> <p>Many of the urban poor are dependent on public transport for their major activities; reducing the time and money they expend on transport increases their disposable income and facilitates wider access to jobs and services</p> <p>Measures to improve access to safe NMT can increase job opportunities, access to social and administrative services, and the potential for participation in empowering activities</p> <p>Rural incomes depend on access to local markets, thereby requiring all-season passable links—but not necessarily high-quality infrastructure. Transport can also be a direct income generator. Measures of these factors are not normally kept, and may need to be specially surveyed</p> <p>Educational and health access is similarly dependent on reliable and affordable transport services. School enrollment data are commonly available from the ministry of education. If data on health visits are not available at the national level, they can usually be collected from a sample of hospital administrators</p>
<ul style="list-style-type: none"> ⊃ Incidence of poverty in rural areas ⊃ Rural employment rates ⊃ Percentage of rural household incomes that come from nonfarm employment ⊃ Rural literacy rates, by gender ⊃ Child and maternal mortality rates in rural areas 	<ul style="list-style-type: none"> ⊃ Money income from farming ⊃ Farmgate receipts as a percentage of market price ⊃ Road workers employed from the lowest income quintile, by gender ⊃ Primary school enrollment and attendance, by gender ⊃ Percentage of pregnant women receiving prenatal care 	<ul style="list-style-type: none"> ⊃ Percentage of rural roads in maintainable condition that receive regular maintenance ⊃ Number of person days spent on rural road maintenance 		

<ul style="list-style-type: none"> users of the value of participation (surveys) ⊃ Reduced corruption in the transport industry ⊃ Social capital (bridging and linking) aggregation; participation of the poor and vulnerable groups ⊃ Female literacy and education ⊃ Participation in social activity 	<ul style="list-style-type: none"> better informed of transport budgets, plans, decisions, and the contracting process ⊃ Responsiveness of transport interventions to poor people's needs (surveys) ⊃ Increased use of transport services by poor groups ⊃ Increased female participation in education, training, and social activities 	<ul style="list-style-type: none"> amounts, and content are publicly announced in newspapers, on the Internet, and/or on bulletin boards ⊃ Attendance by the poor and their representatives at public meetings ⊃ Bids for road works opened in public ⊃ More regular, affordable, and safe transport services linking remote areas with service centers ⊃ Passengers by gender in peak and off-peak hours ⊃ Frequency of transport services ⊃ Improved sidewalks and shoulders (km) 	<ul style="list-style-type: none"> tions on transport plans and budgets ⊃ Pro-poor and active transport services policy ⊃ Remove distortion in fiscal regime to NMT purchase ⊃ Measures and expenditure to increase personal security on public transport, NMT, and walking 	<p>Poor transport provisions harm female activities the most. The indicators here tend to be poor and may need occasional sample collection</p>
Goal: Reduce risk and vulnerability through improved transport reliability, affordability, and safety				
<ul style="list-style-type: none"> ⊃ Morbidity rates ⊃ Mortality rates ⊃ Child intelligence measures ⊃ Deaths from respiratory diseases 	<ul style="list-style-type: none"> ⊃ Total road transport fatalities ⊃ Total road transport serious injuries ⊃ Ambient lead concentration ⊃ Percentage of days when PM and ozone 	<ul style="list-style-type: none"> ⊃ Road transport accident rates ⊃ NMT and pedestrian accident rates per capita ⊃ NMT modal share ⊃ Percentage of leaded gasoline ⊃ Percentage of vehicles failing emission tests 	<ul style="list-style-type: none"> ⊃ Expenditure on road safety campaigns ⊃ Expenditure on NMT / pedestrian infrastructure ⊃ Expenditure on local air pollution reduction 	<p>Road accidents are often under-reported. Road accident deaths by category are probably the most secure indicator. Effort is needed to improve data collection and analysis</p> <p>Nonmotorized transport and walking are the most vulnerable but least addressed or measured transport activities</p> <p>WHO standards exist for six major transport-related air pollutants. Vehicle testing is often rare or corrupt. National standards and a centralized testing capacity should be established and enforced.</p>

<ul style="list-style-type: none"> ⊃ Nutritional status (prevalence of under-weight children under five) 	<ul style="list-style-type: none"> ⊃ Percentage of pregnant women receiving prenatal care ⊃ Farmgate prices ⊃ Variety of goods in the local market ⊃ Transport time to get food to deficit areas 	<ul style="list-style-type: none"> ⊃ Availability and cost of transport service 	<ul style="list-style-type: none"> ⊃ Roads improved to all-season standard (km) ⊃ Policy and fiscal environment facilitate low-cost transport services 	<ul style="list-style-type: none"> ⊃ Expenditure on primary and secondary roads
<ul style="list-style-type: none"> ⊃ Percentage of population accessible after last major natural calamity 	<ul style="list-style-type: none"> ⊃ Percentage of population with all-season motorized transport access 	<ul style="list-style-type: none"> ⊃ All-season roads (km per km²) 		<p>Drought and flood relief efforts rely on a continuous passable transport network</p>

	percentage of export Free On Board price (major commodities)	average cost per passenger km	generalized cost of access to major facilities	population with all-season access
	Inland transport cost as a percentage of food costs (consumer price index, CPI)			Percentage of households served by some form of mechanized transport
				Percentage of households owning a vehicle (such as cycle, donkey, cart, motor-bike)
Operational components				
Costs	CPI transport component price increase	Freight cost per ton km (road transport and rail transport) Cost per passenger km (road and rail transport)	Transport cost as a percentage of household budgets Percentage of household time devoted to transport	Transport cost as a percentage of household budgets Percentage of household time devoted to transport Percentage of adult female time devoted to transport tasks Cost of new bicycle in terms of household annual income
Asset maintenance	Percentage of roads in good or fair condition Percentage of truck fleet active Percentage locomotive availability Percentage berth availability (largest ports)	Percentage of roads in good or fair condition Percentage of truck fleet active	Percentage of roads in good or fair condition Percentage of urban bus fleet active	Percentage of roads in good or fair condition Percentage of obsolete bridges
Congestion	Ship waiting ration: time waiting for berth / time at berth Number of ships waiting to berth	AADT major intercity highways by lane	Average urban traffic speed (three largest cities) Crush loading percentage of nominal capacity (urban buses) Percentage of daily traffic in A.M. peak	Not applicable

Reliability	Percentage empty backhauls (trucks)		Average bus capacity occupancy rate	
	Percentage berth occupancy (largest ports)			
	Rail wagon turnaround (days).			
	Estimated percentage of workforce redundant (by mode)			
Safety	Percentage of firms using just-in-time inventory management	Percentage on-time performance (scheduled air, bus, and rail service)	Variability in bus commute time	Percentage of population with all-season access to main transport network
	Percentage cargo theft and damage, by mode	Percentage truck overloading		Percentage of time without access to main transport network
	Schedule enforcement program in use (bus, airlines, rail)			Seasonal variation in freight rates
Environment	Annual road fatalities per 1,000 vehicles	Truck overloading (H/M/L; Y/N)	Annual road fatalities per 1,000 vehicles	Annual road fatalities per 1,000 vehicles
	Annual road fatalities per 1,000 people	Roadworthiness program enforced (trucks, buses; Y/N)	Annual road fatalities per 1,000 people	Annual road fatalities per 1,000 people
	Annual transport work-related fatality rate	Airworthiness standards enforced (Y/N)	Annual transport work-related fatality rate	Annual transport work-related fatality rate
Environment	Percentage leaded gasoline sold	Road projects subject to environmental assessment (Y/N)	Percentage of days in major cities exceeding WHO norms for ozone, suspended particulates, and carbon monoxide	Use of bioengineered local road techniques (Y/N)
	Sulfur in diesel (ppm)			

Structural Components

Ownership	Existence of state monopolies (Y/N)	Percentage share of private trucking	Percentage of buses privately operated	Percentage of rural roads designated to districts and communities, respectively
	Percentage private sector share of transport market, by mode		Percentage of public-transport passengers carried by informal sector	
Competitiveness	National competition law applicable to transport (Y/N)	Concentration ratio / market shares of the top three suppliers / (intercity freight market)	Concentration ratio / market shares of the top three suppliers / (urban public transport)	Number of hauliers/merchants serving local product markets

	regions	<ul style="list-style-type: none"> ⊃ Road fund management able to determine user charges and expenditures (Y/N) ⊃ Percentage of road budget allocated to capital expenditure ⊃ Percentage of road budget allocated to maintenance (less salaries) ⊃ Percentage of roads in good condition that receive regular maintenance 	transport	<ul style="list-style-type: none"> ⊃ Percentage of road budget allocated to capital expenditure ⊃ Percentage of road budget allocated to maintenance (less salaries) ⊃ Percentage of roads in good condition that receive regular maintenance 	<ul style="list-style-type: none"> allocations devoted to rural roads ⊃ Percentage of road budget allocated to capital expenditure ⊃ Percentage of road budget allocated to maintenance (less salaries) ⊃ Percentage of roads in good condition that receive regular maintenance
Subsidies	<ul style="list-style-type: none"> ⊃ Transport sector subsidies (fare and fuel) targeted at the lowest quintile ⊃ Transport budget per capita, urban versus rural ⊃ Transport budget per ton-km and passenger-km, urban versus rural 	<ul style="list-style-type: none"> ⊃ Percentage cost coverage by inter-urban buses ⊃ Percentage cost coverage by inter-urban rail 	<ul style="list-style-type: none"> ⊃ Percentage of full urban bus transport costs covered by fares ⊃ Percentage of passengers eligible for reduced fares or free travel ⊃ Subsidies paid for transport services (US\$ total and US\$ per passenger) 	<ul style="list-style-type: none"> ⊃ Local councils have the power to procure transport services, with or without subsidies (Y/N) 	
Voice and Participation	<ul style="list-style-type: none"> ⊃ Percentage of national transport expenditure by local government and municipalities ⊃ National safety and health standards enforced (Y/N) ⊃ Compulsory labor redundancy compensation (Y/N) 	<ul style="list-style-type: none"> ⊃ Existence of user-managed road fund (Y/N) ⊃ Local consultation arrangements for major transport investment schemes (Y/N) 	<ul style="list-style-type: none"> ⊃ Percentage of local spending paid from national budget ⊃ Public consultations on transport plans and budget allocation (Y/N) 	<ul style="list-style-type: none"> ⊃ Percentage of local spending paid from national budget ⊃ Community involvement in road investment and maintenance decisions (Y/N) 	
Inclusiveness	<ul style="list-style-type: none"> ⊃ National strategies are gender-sensitive and formulated for transport for the disabled and transport for the elderly (Y/N) 	<ul style="list-style-type: none"> ⊃ Availability of public intercity transport (Y/N) 	<ul style="list-style-type: none"> ⊃ Percentage of workers walking more than 30 minutes to work 	<ul style="list-style-type: none"> ⊃ Percentage of rural population within 2 hours walk of a market or administrative center ⊃ Use of labor-based road construction / maintenance 	

Transport	<ul style="list-style-type: none"> ⊃ National policy exists for pedestrian movements (Y/N) ⊃ Specific pedestrian safety program in force (Y/N) ⊃ NMT safety program in force (Y/N) ⊃ Spending on NMT as percentage of investment 	<ul style="list-style-type: none"> ⊃ exist in populated areas (Y/N) 	<ul style="list-style-type: none"> ⊃ construction (Y/N) 	<ul style="list-style-type: none"> ⊃ Facilities for bus stops
Vulnerability	<ul style="list-style-type: none"> ⊃ Emergency response plan exists (Y/N) ⊃ Transport policy is conducive to low-cost transport services (Y/N) 	<ul style="list-style-type: none"> ⊃ Percentage of bridges functionally obsolete (main road network, secondary road network, rail) 	<ul style="list-style-type: none"> ⊃ Transport services are available and affordable to poor households (Y/N) 	<ul style="list-style-type: none"> ⊃ Average travel time to health facility ⊃ Transport services are available and affordable to poor households (Y/N) ⊃ Number of unbridged water crossings

Notes

1. Isochrones are like contours, linking points of equal remoteness in terms of access time from a selected point (usually a city or regional center).
2. Even where transport service markets are competitive and transport cost savings are passed on to users, in the long term part or all of these benefits may translate into increased land values. If rich owners hold the land in an area, the ultimate outcome of the transport improvement may be regressive, depending on whether this is addressed effectively by property or income taxation.
3. Low income commuters may be paying higher fares for inferior service by formal public transport while informal sector transport services are both economically and commercially viable.
4. Alternatively, comparison of indicators may be made easier by using cost indicators, such as the number of poor persons served with basic access to a health clinic per thousand dollars spent.
5. However, there are some disadvantages to using cost effectiveness as a criterion to judge public spending options—see chapter 6, “Public Spending.”
6. Notwithstanding that household surveys clearly suggest that most transport takes place in and around the village for the purpose of basic survival, interventions to improve rural roads are often justified on the basis of projected increases in agricultural production and rarely take account of the needs and benefits of other travel purposes.
7. In some circumstances, competition in the informal sector can lead to undesirable behavior by individual operators, including criminal acts.
8. See also Allport (2000), and World Bank (1996, 1999b, and 2002, forthcoming). More information on the design of regulatory policy for the informal sector in urban areas is available at http://www.worldbank.org/transport/p&e_over.htm.
9. See the report on the gender dimensions of labor-based road construction in Lesotho at the World Bank’s Gender and Transport Web site: <http://www.worldbank.org/gender/transport> (see section on Grants and Pilots).
10. Road accidents are a major health problem in developing and transition countries. On average, 30 to 40 percent of casualty wards are occupied by road accident victims, who can account for 5 to 10 percent of all in-patient bed days in low-income countries. The medical costs associated with these accidents are around US\$3 billion to US\$4.5 billion per year, about two-thirds of which are incurred in hospitals. No country can afford to waste hospital resources on such a grand scale.
11. A coalition including the private sector, civil society, the World Bank, the International Federation of Red Cross and Red Crescent Societies, and other international agencies has recently established the Global Road Safety Partnership (GRSP) to help countries develop effective and sustainable road safety policies and activities to combat the suffering caused by traffic accidents.
12. See also World Bank (2000b). Information, guidelines and documentation required to incorporate a bicycle component into a larger transport project is available at <http://www.worldbank.org/gender/transport>. The package is designed in the form of short modules that can be downloaded onto a computer or sent as email attachments.
13. See also Bamberger and Lebo (1999), Malmberg-Calvo (1994a and 1994b), World Bank (2000b), and <http://www.worldbank.org/gender/transport>.
14. This finding holds robustly across a range of sites with diverse economic, social, and ecological characteristics, including Belize, Brazil, Cameroon, Mexico, and Zaire (Chomitz and Gray 1996).
15. Since poor people have great difficulty obtaining credit, tend to be relatively disadvantaged in terms of physical capital, and have little opportunity to do well elsewhere, their best strategy where land is accessible and sufficiently cheap is to “mine” the soil through an unsustainable extraction of nutrients and then to move on (Schneider 1995).

16. Statistics on labor participation should be interpreted with care. Where unemployment rates are high, labor-intensive construction and maintenance technologies are efficient because they make use of an abundant and cheap resource. In such cases, a large and growing number of person days employed is positive, particularly when these are jobs in the private sector. In contrast, in cases where there are labor shortages, having a labor-intensive transport industry is not efficient. In such cases one would want the indicator to decrease rather than increase.
17. Technically, the functional relationship between a poverty outcome such as the infant mortality rate (as the dependent variable) and several interventions (as the independent variables) is multivariate and not simply separably additive; that is, the interaction (“cross product”) terms are important. For example, the marginal effect of transport (access time improvements) on infant mortality depends on the level of health input, such as staff and supplies at the hospital, and vice versa.

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Chapter 23

Water and Sanitation

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Claudia Sadoff, and Lee Travers*

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23.1 Introduction

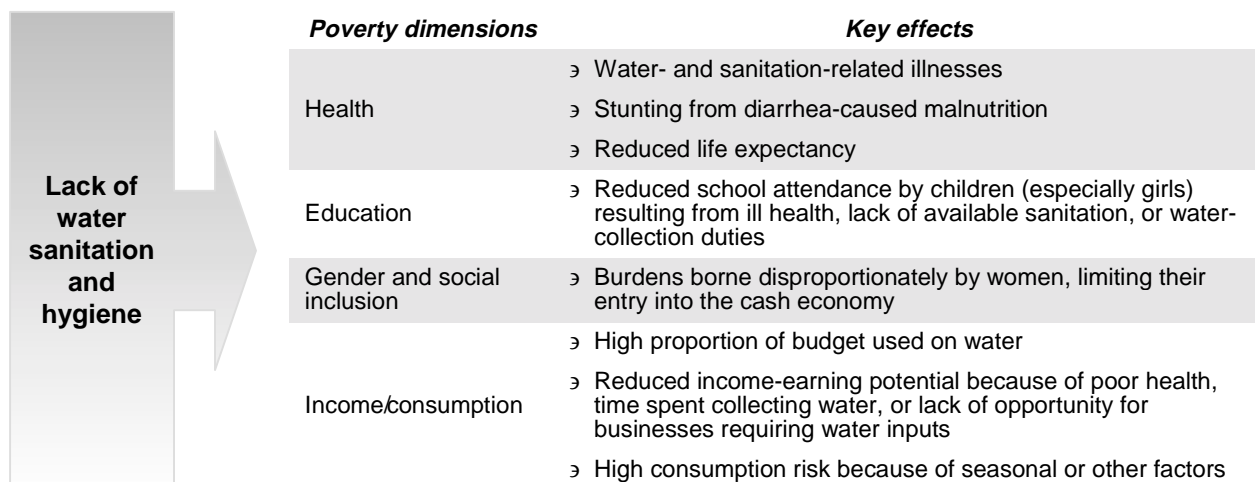
Approximately 1.3 billion people in the developing world lack access to adequate quantities of clean water, and nearly 3 billion people are without adequate means of disposing of their feces. An estimated 10,000 people die every day from water- and sanitation-related diseases, and thousands more suffer from a range of debilitating illnesses. The impact of inadequate water and sanitation services falls primarily on the poor. Badly served by the formal sector, the poor make their own, often inadequate, arrangements to meet basic survival needs. Many fetch water from long distances or end up paying high prices to water vendors for very small quantities of water.

The clear need for basic water and sanitation services for the poor assumes even greater significance when the linkages with other dimensions of poverty are considered. Water- and sanitation-related sicknesses put severe burdens on health services and keep children out of school. Human waste poses a tremendous social cost through pollution of rivers and groundwater. Figure 23.1 shows how lack of water and sanitation affects poverty through these and other linkages.

Despite significant investments in the sector in recent decades made by governments, nongovernmental organizations (NGOs), bilateral and multilateral agencies, and the private sector, the outlook for access to safe and adequate supplies of water and environmentally sustainable sanitation remains grim. Coverage varies substantially by country, but well over one-third of rural populations in most lower income countries lacks access to safe water or sanitation. This is despite water being consistently identified as a basic need and a top priority by those who lack convenient or affordable access to it. National indicators on access to safe water and adequate sanitation are compiled by the United Nations (see technical note S.1).

Lack of access arises both from income shortages and the specific cultural, economic, regulatory, and institutional environment prevailing in the country in question. An urban household located in an informal settlement may not be connected to the piped water system because it does not have the property rights to the land it occupies, preventing the utility from building fixed assets on illegally inhabited land. Among the rural or urban poor, lack of a political voice may prevent their needs from being heard by those in charge of allocating the funds earmarked for water supply and sanitation improvements. In other situations, it may be man-made pollution of water bodies and aquifers that limits easy and less costly access to safe water resources. Without major consumption sacrifices, the poor cannot afford the costs of treatment and the technologies that extract water from deeper aquifers. Although both poorer and higher income segments of the population may face the same polluted resources or inadequate services, higher income households can afford private solutions to these problems—solutions too expensive for the poor population.

Figure 23.1. Linkages between Poverty and Water and Sanitation



This chapter describes possible elements of a contribution by water and sanitation to a national Poverty Reduction Strategy. It highlights the pathways through which water and sanitation services influence poverty status. And it stresses the importance of understanding exactly how the poor use water and sanitation services, and the fact that among the poor such use may vary by region and by rural, town, and urban status, in addition to gender, ethnicity, and depth of poverty. In this complex environment, devising an effective strategy that reaches the target groups will require consultation with those groups.

Everyone, no matter what their poverty status, has water and sanitation services. But service levels vary tremendously, even within the broad category of the poor. Some differences in service levels, such as supply pressure, are matters of convenience, but others, such as pathogen loads in drinking water or latrines to isolate feces from human contact, fundamentally affect the health, education, and other attributes that exacerbate or ease poverty. A Poverty Reduction Strategy will focus on the latter aspects of water and sanitation service.

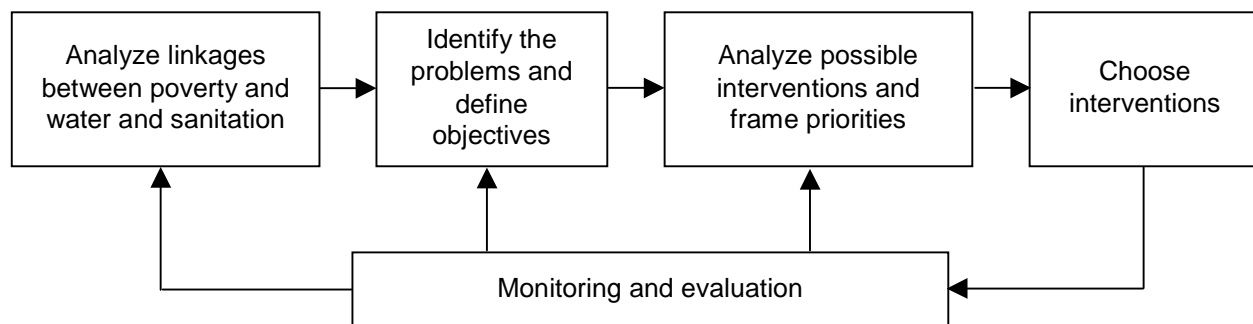
Most rural people and, in most countries, the bulk of the urban poor rely on private provision to meet their water and sanitation needs. Indeed, recent evidence strongly indicates that publicly provided water and sanitation services repeatedly fail to provide efficient service or reach the poorest segments of the population. Any water and sanitation strategy will need to recognize and be built around the centrality of private provision.

The chapter, therefore, recommends an approach to a water and sanitation strategy that first concentrates on providing a strong, supportive policy environment for existing private service provision. One important government role may be the establishment of microcredit or other arrangements that avoid unsustainable subsidized services yet facilitate improvements demanded by the poor. Where direct government provision and management of networked water services or standpipes continues, the chapter recommends immediate assessment of service efficiency, measured against national and international benchmarks, to determine efficiency levels. It would be unlikely that a forward-looking strategy would depend on further expansion of direct government service provision; it would rather seek means of increasing the competitive pressure on existing services.

This chapter aims to assist policymakers and sector departments in their design of water and sanitation strategies that actively address the needs of the poor. The structure is as follows. Section 23.2 provides guidance on analysis of the linkages between poverty, water, and sanitation; section 23.3 helps the reader to identify problem areas that require intervention, and to define objectives; section 23.4 goes on to provide a menu of possible public interventions and a framework that assists in their prioritization; and, finally, section 23.5 sets out a monitoring and evaluation framework that allows reevaluation of the linkages, appraisal of poverty outcomes, and assessment of whether the chosen intervention has been effective.

A successful strategy will adapt to new understanding and new circumstances. For this reason, an element of the Poverty Reduction Strategy will be a monitoring and evaluation program that provides continuous feedback on what is working and what is not. This chapter concludes with a recommendation for monitoring and evaluation programs built on heavy participation by the poor themselves. This is summarized schematically in figure 23.2.

Figure 23.2. Approach for Sector Strategy



23.2 Poverty, Water, and Sanitation: Understanding the Links

Inadequate water and sanitation services to the poor increase their living costs, lower their income-earning potential, damage their well-being, and make life riskier. The continuing, nearly universal deterioration of the surface and underground water sources on which people survive means that water and sanitation pressures will simply become worse in the future.

This section seeks to improve understanding of the impact of the lack of water and sanitation on different poverty dimensions. Once the impacts are known and their relevance assessed in a given community or country, priorities for intervention can be decided.

23.2.1 Health effects

The classical mechanisms of transmission of waterborne diseases are poor personal hygiene, described as the “short cycle” (excreta -> hand -> mouth), and environmental pollution, described as the “long cycle.” Figure 23.3 highlights these cycles. Typically, physical investments in community sanitation most effectively break the long cycle. Breaking the short cycle requires changes in personal behaviors and practices, which present a more difficult challenge.

Diarrhea accounts for nearly 30 percent of the burden of childhood communicable disease, with an estimated 2.2 million child deaths annually and a much larger number of children (and adults) suffering from illnesses. Repeated bouts of diarrhea contribute to malnutrition. Water and sanitation—and hygiene—are intimately related to diarrheal diseases. The interactions are complex, but adequate quantities of water, even low-quality water, are necessary if people are to adopt the hygienic habits needed to break the disease transmission pathway.

Just as everyone needs water daily, everyone, rich and poor, defecates and urinates daily. But where that takes place has a significant impact on family health. Households with private toilets have measurably lower morbidity rates than households without. Private toilets benefit not only the household but also neighbors who gain protection from the household’s feces. The poor and their neighbors often lack

Figure 23.3. The Main Pathways of Human Exposure to Pathogens in the Aquatic Environment

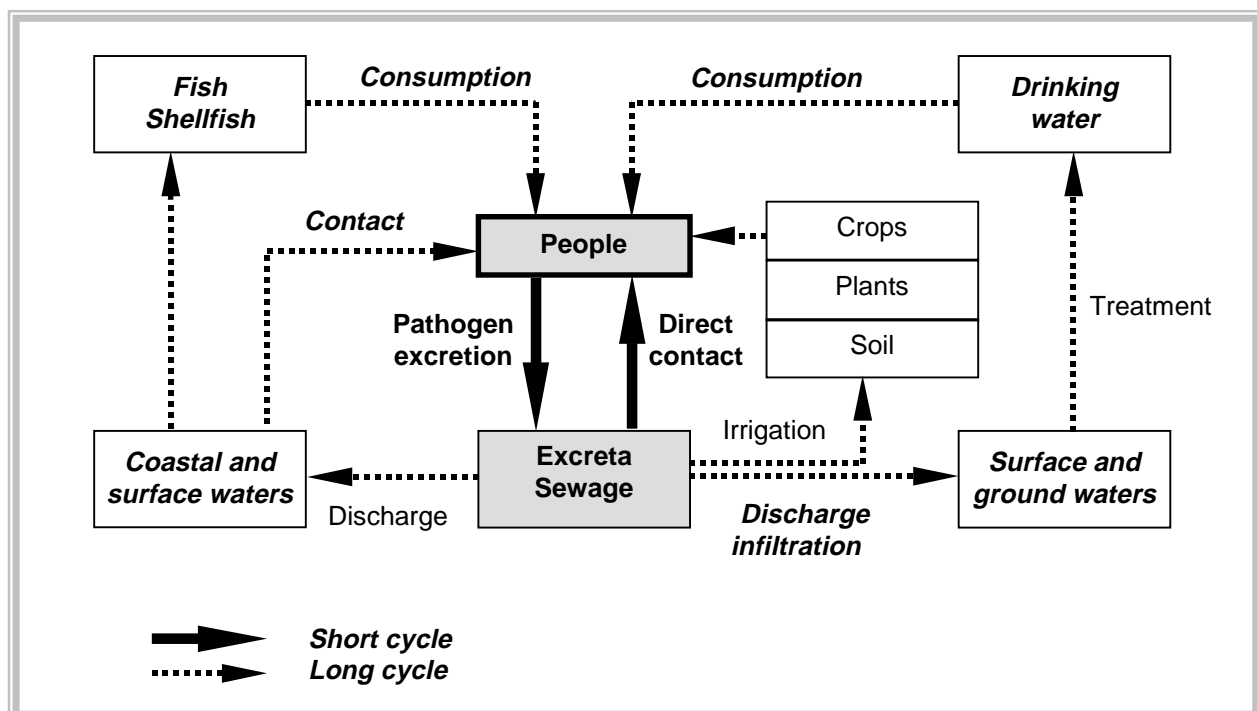
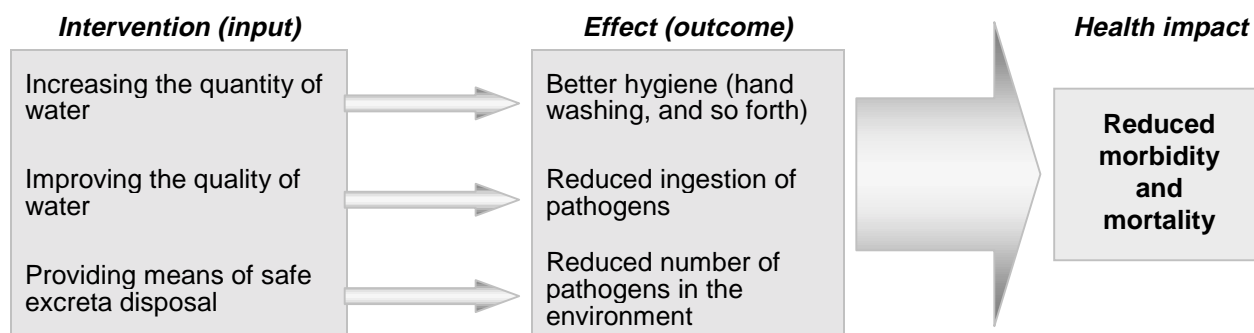


Figure 23.4. Effects of Water and Sanitation Interventions on Health

private toilets, forcing defecation in public spaces, and leaving them more vulnerable than the nonpoor to communicable diseases.

Figure 23.4 shows the key channels through which physical improvements of water and sanitation services influence health outcomes. The provision of hygiene education, in addition to the physical interventions, helps ensure that feces are safely disposed of, hand washing is done properly, and water is stored safely.

Additionally, inadequate water and sanitation infrastructure slows other health improvements. With regard to sanitation, women often have different privacy requirements than men. When the absence of latrines forces them to use public spaces, they can do so only in the shelter of darkness, during early morning and late evening hours. One response is urine retention, which leads to health problems. From the community perspective, the adequacy of drainage plays a large role in health outcomes. Where drains do not exist, or are blocked, and wastewater stands in the streets, children are particularly vulnerable to disease transmission through direct contact. The standing water may also serve to host other disease vectors, such as mosquitoes transmitting malaria and other diseases. See chapter 18, “Health, Nutrition, and Population,” for further discussion on the impact of infrastructure on health outcomes.

23.2.2 Effects on education

In some cultures the lack of toilets in schools serving the poor is known to be a major factor in deterring girls from continuing their education, particularly after puberty. In these cultures, private toilets (if only latrines) and even the availability of drinking water provide a necessary condition to reach school enrollment goals (see box 23.1).

Children—particularly girls—are often required to help their mothers with the time-consuming task of fetching water, as box 23.2 illustrates by the story of Elma Kassa from Ethiopia. Fetching water has been found in many countries to reduce children’s time for schooling or playing.

Chapter 19, “Education,” provides further details on the effects of education on poverty outcomes.

Box 23.1. Girls, Sanitation, and Education

Reasons for low female school enrollment and attendance related specifically to the water supply and sanitation sector include inappropriate school sanitation or total lack of toilets or latrines, lack of water, and lack of privacy. The following examples illustrate this point:

- In Bangladesh many schools do not have any latrines, although it is recognized that latrines are important not only for health protection but also for the school attendance of girls.
- In the Rohtas district of Bihar State in India, only 59 percent of schools have drinking water facilities and 11 percent have toilets. A study undertaken in this district suggests that to enhance the enrollment of girls it is necessary to motivate the parents and the girls themselves. Key motivating factors include providing midday meals and free learning materials and aids and constructing drinking water and toilet facilities.

Source: Adapted from *Gender in Education and Training for Water Supply and Sanitation: A Literature Review*. International Water and Sanitation Center (IRC). 1997. Unpublished.

Box 23.2. The Lifestyle of a Young Girl in Ethiopia

Elma Kassa is a 13-year-old girl from Addis Ababa, Ethiopia. Her father is a laborer and her mother is a washer-woman. She has one younger sister and a brother.

“I go to collect water four times a day, in a 20-litre clay jar. It’s hard work! When I first started collecting water, I was about seven years old. In those days we used to have to walk for over a mile to fetch water. Now there is a tapstand about 10 minutes away from my home, which has made life easier. I’ve never been to school, as I have to help my mother with her washing work so we can earn enough money. . . . Our house doesn’t have a bathroom. I wash myself in the kitchen once a week, on Sunday. At the same time I change my clothes and wash the dirty ones. When I need the toilet, I have to go down to the river in the gully behind my house. I usually go with my friends as we’re only supposed to go after dark when people can’t see us. In the daytime I use a tin inside the house and empty it out later. If I could alter my life, I would really like to go to school and have more clothes.”

Source: DFID (1998).

23.2.3 Gender and social inclusion

Groups such as female-headed households, the elderly, and ethnic minorities are disproportionately poor, and among the poor they tend to be most adversely hit by a lack of water and sanitation services. The voices of these vulnerable poor groups may be neglected when such services are established. Even when they are the primary managers of household water, women are often not included in public decisionmaking processes concerning water and sanitation services. Geographically dispersed poor groups (often ethnic minorities) may be excluded in the process of setting up community water and sanitation services. Situations in which marginalized groups are excluded from wider community decisionmaking activities will lead to continued use of unsafe water as well as limited access to existing or future services by these same groups.

Furthermore, a lack of adequate sanitation will endanger girls and women in those cultures where they have to wait until the evening to be able to defecate and urinate. The health consequences have already been mentioned, but security issues also arise as women and girls are more vulnerable to violence, sexual harassment, and other types of crime during the hours of darkness.

23.2.4 Effects on income and consumption

The lack of water and sanitation infrastructure has complex effects on consumption patterns, which significantly influence people’s overall well-being. Figure 23.5 shows these effects, which are discussed in more detail in the subsequent paragraphs.

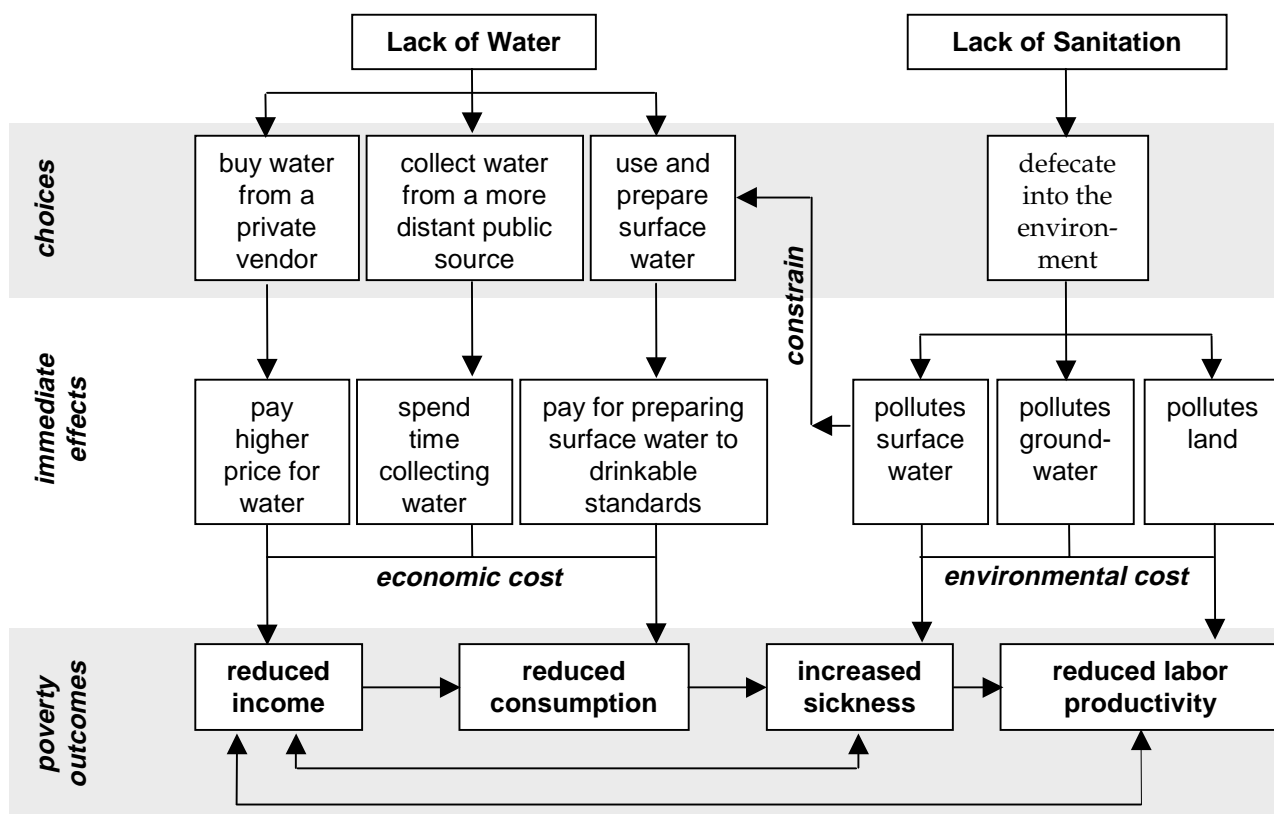
The economic cost of water. Traditional poverty measures focus on income, but the rural and urban poor may face higher costs for water in addition to lower incomes. The lack of network water connections for the urban poor, or of any water service for the rural poor, typically leaves them buying from water vendors at high per liter prices (see box 23.3), waiting in long lines at or walking long distances to public sources, and incurring additional costs for storing and boiling water.

The lack of convenient and affordable access to water reduces a poor household’s consumption of other commodities and services, leaves it consuming less than the optimum amount of water for good hygiene, and impacts health and labor productivity of the household members. It may also reduce income-generating opportunities of the household, thereby further reducing income and consumption.

The World Health Organization has established a norm of 20 liters per capita per day (lcd) for water use to satisfy basic personal and hygiene requirements. Of that amount, about 10 lcd serve drinking and cooking needs, while the remainder goes to bathing, particularly hand washing. When water is expensive, either in cash terms or in the time and energy needed to collect it, the poor often cut total consumption to 15 lcd or less and cut back on bathing.

A number of studies have shown that the volume of water collected varies little for water sources from about 30 to 1,000 meters from the house. For sources closer than 30 meters, usage increases, and for more than 1,000 meters, usage falls. Figure 23.6 shows this experience in terms of minutes required for a return trip to the water source. Distance matters, but so does queuing time. If users can walk 10 meters to

Figure 23.5. Consumption and Income Effects



a standpost but then must wait an hour before use, they will collect no more water than someone traveling 200 meters to a standpost who has no wait in line.

The environmental cost. Threats to water sustainability arise in both quality and quantity dimensions, driven by pollution and competing demands from many sectors, including industry, agriculture,

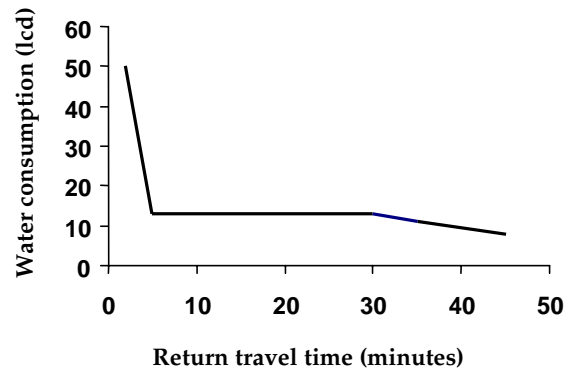
Box 23.3. How Much Do the Poor in Urban Areas Pay for Water

The problem of lack of water services hits the poor in the slum areas of the large cities in developing countries. Often the only choice for low-income households that cannot afford a house connection is to buy water from private vendors at a relatively high price, sometimes 100 times more than that provided by public authorities. Examples are shown in the following table:

Ratio Between Prices Charged by Vendors and by Public Utilities

Country	City	Ratio
Bangladesh	Dacca	12-25
Colombia	Cali	10
Ecuador	Guayaquil	20
Haiti	Port-au-Prince	17-100
Honduras	Tegucigalpa	16-34
Indonesia	DKI Jakarta	4-60
Surabaya		20-60
Ivory Cost	Abidjan	5
Kenya	Nairobi	7-11
Mauritania	Nouakchott	100
Nigeria	Lagos	4-10
Onitsha		6-38
Pakistan	Karachi	28-83
Peru	Lima	17
Togo	Lome	7-10
Turkey	Istanbul	10
Uganda	Kampala	4-9

Source: R. Bathia and M. Falkenmark. 1993. "Water Resource Policies and the Urban Poor: Innovative Approaches and Policy Imperatives." *Water & Sanitation Currents*. United Nations Development Program–World Bank Water and Sanitation Program.

Figure 23.6. Water Consumption versus Travel Time

Source: DFID (1998).

and energy. Environmental degradation reduces labor productivity by contributing to the increased burden of diseases and by limiting income potentials (especially in aquaculture).

Nationally, dwindling availability of clean water per capita will increase the economic cost of water and, in a situation of scarcity, limit the potential for economic development. Locally, communities that fail to protect their surface and ground waters from pathogens have fewer options for drinking water and require more expensive technologies for extracting water from deeper aquifers or for treating surface water to drinkable levels. In the urban context, where water may be supplied from a utility, increasing costs of extraction or treatment are passed on to consumers through higher prices (see box 23.4). The poor have fewer resources; Hence, they disproportionately suffer the consequences (see chapter 11, “Environment,” for further details).

Water, sanitation, and risk. Inadequate water and sanitation services can bring with them a particular risk in each of the dimensions already described. And water availability and quality may both be highly seasonal. During the dry season, the urban poor face higher water prices, while the rural poor face longer treks for lower quality water. Moreover, sewage return flows to water bodies, bearing pollutants of various types, make up a bigger proportion of total flows, reducing water quality and making effective treatment more difficult. The risk is faced in household consumption and in the use of water in economic activity such as agriculture. The poor are particularly unequipped to cope with this risk, since coping requires expensive storage or additional treatment. During the wet season, inadequate drainage and other sanitation infrastructure becomes problematic, as overflowing polluted water may stand in the streets for long periods.

Box 23.4. Degradation of Water Quality and Implications for the Cost of Water in Indonesia

In addition to causing environmental damage, water pollution and excessive pumping have effects on the cost of water. To improve water quality, amounts of (often costly) chemicals must be increased. For example, to treat the increasingly polluted raw water entering the Pulogadung water treatment plant in Jakarta, chlorine was increased from an average of 2.6 mg/l in 1982 to about 7 mg/l in 1984. This increase raised treatment costs by Rp 610 million per year (1985 prices) and decreased plant efficiency by 18 percent (Rp 870 million per year). The “finished” drinking water frequently was off-color and exceeded limits for concentration of ammonium, organic matter, and fecal coliform. Another negative long-term effect of high chlorine use is production of chloroform and other carcinogenic residues.

Another large cost of the bacteriological contamination of raw water is that of boiling water to make it potable. The high levels of pollution and the poorly operated treatment and distribution facilities make the public water supply undrinkable unless boiled before use. For the Jakarta special capital province area, this cost has been estimated at Rp 96 billion (1987 prices) or US\$52 million per year, equivalent to 1.1 percent of the gross domestic product then generated in Jakarta. A survey conducted in Jakarta showed that a household boils about 4.4 liters of water per capita per day, whatever the water source. Boiling water for between 15 and 20 minutes cost about Rp 7.5 per liter.

Source: R. Bathia and M. Falkenmark. 1993. “Water Resource Policies and the Urban Poor: Innovative Approaches and Policy Imperatives.” *Water & Sanitation Currents*. United Nations Development Program– World Bank Water and Sanitation Program.

23.3 Assessing the Problem and Defining Targets

The previous section highlighted potential impacts of inadequate water and sanitation on poverty outcomes. This section provides ideas on how to move from those general concerns to identification of specific poverty-related water and sanitation problems, and how to use that information to decide on sector strategy goals.

The section proposes a sequential approach to determining sector strategy goals. It would begin by taking stock of current government water and sanitation sector policies to determine whether they are designed to respond to the needs of the poor. That review would be followed by a reexamination of national experience with the links between poverty and water and sanitation services, seeking to answer whether the lack of adequate service causes disproportionate problems in areas such as health and education or whether impacts are balanced across the dimensions of poverty. Information on the poor themselves and their perceptions of water and sanitation needs should then be examined. Efforts to meet those needs are likely to face a number of constraints—some social, others political—which are then discussed. Finally, with this background, the section suggests an approach to incorporating the information to develop a sector strategy better targeted to serve the needs of the poor.

23.3.1 Taking stock of government policies

Repeated national and international campaigns for improved water and sanitation have left most countries with clearly stated policy goals for coverage or service levels. The challenge in a Poverty Reduction Strategy is to reexamine those goals for their impact on the poor and to reorient them as necessary. For instance, one goal might be universal availability of house connections. While arguably a desirable objective, it might encourage use of public money to increase urban connections at the expense of closing a much larger rural gap in safe water supply. A campaign to increase high-quality latrine construction through matching grants to households would likely focus sanitation support on the nonpoor. Clearly, the starting point for reexamining government policy objectives will be the existing government strategy and budget allocations for the sector.

Some key questions that could guide the review of the existing policy objectives are the following:

- What is the government commitment to formulate pro-poor policies in this sector?
- What are actual government priorities within the sector: extending access to those who do not have services, improving current service delivery to customers, or a combination of both? Who is the target group under each option?
- Are there any ongoing government reform efforts that might affect service delivery, such as government decentralization or market liberalization?

23.3.2 Identifying priority areas: spatially and thematically

The proposed approach to identifying priorities is to map the income poor and the water and sanitation poor, looking for areas that promise high-return interventions. Restricting the focus of public interventions to deprived rural regions, or to slums and informal urban settlements, may enhance the poverty targeting of a water or sanitation investment. However, such overlaps are likely only partial, and policymakers need to assess where the health, education, and other linkages discussed in section 23.2 are important. Evaluating the importance of the linkages in tandem with the location of the poor will help guide intervention to actions that have the highest impact.

Identifying the income poor and the water and sanitation poor

National poverty statistics will provide information on the location and profile of the poor, and they will almost always contain information on household variables such as access to water and sanitation services, and education, health, income, and expenditures. Where such poverty statistics do not exist or are considered to be unreliable, other data sources could be consulted. Guidelines for using poverty data and their different sources are outlined in chapter 1, “Poverty Measurement and Analysis.”

The following questions are important in the water and sanitation context:

- Where do the poor live and work?
- What percentage of households consume less water than the national or minimum standards recommended by the World Health Organization? What is their income and location?
- Which households have members suffering from a high incidence of diarrhea?
- How do poor households spend their income? What are their expenditures on water, hygiene, education, and health (absolute and relative to income)?
- What percentage of households have access to and use a latrine?

A profile of unserved households based on available poverty statistics will inform the water and sanitation authorities about the magnitude of the problem and—where poverty and the lack of water and sanitation access is spatially concentrated—about the geographical areas for priority interventions.

Where reliable and spatially disaggregated poverty statistics do not exist, an alternative approach would be to review existing water and sanitation use and service delivery in terms of quantity, quality, and continuity. This could be done by consulting existing reports and statistics that may have been prepared by government, nongovernment, or donor agencies, and assessing whether they contain recent information on coverage, use, and performance. More expensive alternatives include gathering the data through rapid rural or urban appraisals, focus groups, or traditional surveys. Ideally, these would be carried out as part of a more comprehensive statistical capacity-building effort (see chapter 5, “Strengthening Statistical Systems”).

Relevant spatially disaggregated administrative and budget data on water and sanitation use and performance could include the following:

- existing water supplies (mains, standpipes, wells, water vendors, illegal connections, and so on);
- users by gender, ethnicity, and other social categories detailing income and water and sanitation sources;
- consumption and price by supply method;
- uses and quality of each supply method (water quality, reliability throughout the year, and so on);
- distance to and number of users of the supply point;
- type of service delivery: the providers (formal and informal);
- existing on-site sanitation or sewer systems (ordinary pit latrines, ventilated improved pit (VIP) latrines, bucket sanitation systems, septic tanks, intermediate or pour flush sanitation with sewer, and so on);
- users and nonusers by type of system; and
- cost of each system and the needs for operation and maintenance.

Since there are often competing demands for fresh water resources, consumption by other users such as agriculture and industry should be included, if possible, in this initial assessment.

Assessing the importance of the links

Understanding the links between poverty and water and sanitation access may be intuitively simple. To assess the strength of these links in a particular location is difficult. Evidence of cause (lack of water and sanitation) and effect (poverty) is limited by (a) lack of reliable data and (b) confounding variables influencing poverty that are difficult to control for. Special concerns related to various effects are described below.

Effects on health. Assessing the impact of water, sanitation, and hygiene on health is methodologically difficult, since a wide variety of factors influence the state of health. In addition, the relatively long time required to establish scientific proof of health benefits often renders epidemiological surveys a far larger task than can reasonably be attempted when developing a sector strategy. Technical note S.2 provides

further background on this topic and suggests different approaches that could be considered for measuring health impacts.

Posing the question on health impacts from a different angle may be a better start: Does the lack of water and sanitation infrastructure inhibit health improvements? The link to health improvements is often seen through the adoption of hygienic behavior, which is enabled through the provision of adequate services (box 23.5).

The joint monitoring of the indicators (ideally disaggregated by location) shown in table 23.1 allows a ready assessment of where linkages are weak or strong and where interventions are most needed. For example, if water availability has increased rapidly, but child health indicators remain static, hygiene behavior has probably become the critical intervention. Similarly, programs to boost indicators in column 2 will likely fail without increases in water volumes signaled by indicators in column 1. Of course, other inputs, such as education, can improve column 3 outputs without any changes in columns 1 or 2, and the strategic challenge will be to confirm linkages. For this purpose, the set of indicators should be over as long a period, with as much a level of geographical disaggregation as possible.

Effects on education. The link between the lack of water and sanitation and children’s enrollment in schools—either due to the absence of water and latrines in schools to the time children are required to spend collecting water—will be specific to country and cultural circumstances. Where such links are important, educational objectives may not be met. The impacts of a lack of education on poverty are discussed in chapter 19, “Education.”

As with health, the strength of the link cannot be easily assessed. One approach to the analysis would be to use school enrollment data (particularly for girls). Where a high incidence of dropout coincides with the lack of availability of water and sanitation infrastructure at the school level, further inquiries as to the reasons for the dropout may be warranted. Similarly, where the burden of collecting water falls on the children or female members of the household, a negative correlation between school enrollment and distance to water sources would be an indication that such a link exists. However, this must be confirmed through sample surveys in the affected communities. In many countries education authorities will have conducted, or know of, studies on enrollment rates that may already investigate these linkages. If studies have not been done, experience proves that the most efficient starting point is simply asking children and parents why they make the choices they do.

Effects on gender and social inclusion. Assessing how poor women and social groups are affected by a lack of water and sanitation services can be done in a variety of ways. Techniques include carrying out agender analysis, or using a variety of participatory evaluation methods that will enable the poor people concerned to voice the problems they experience with limited access to, or a lack of, water and sanitation services.

Effects on income and consumption. Whether in rural or urban areas, if poor people do not enjoy access to efficient water services, they will face higher unit water costs that reduce consumption. The importance of this linkage may be assessed through existing household consumption studies. Such studies typically include questions of household connections to networked water, allowing a quick service profile in both urban and rural areas. To assess cost impacts on households without network supply, careful inquiry must be made of patterns of water consumption and the costs of the various alternatives used (households often rely on more than one source). The household survey cost information can be matched with direct surveys of suppliers to double check costs and coverage. Water supply

Box 23.5. Minimum Evaluation Procedure

Health improvements are only the culmination of a long causal chain. It runs from the original construction of the water supplies or sanitation facilities through their operation and use, permitting changes in hygienic behavior and thus the prevention of disease transmission. The principle of the World Health Organization Minimum Evaluation Procedure is to examine the intermediate links in the chain—functioning and usage. Hygienic behavior is another such link.

Source: Water and Environmental Health at London and Loughborough (WELL). 1999. “Measuring the Health Impact of Water and Sanitation.” Technical Brief No. 10.

Table 23.1. Indicators for Studying Possible Infrastructure and Health Linkages

<i>Indicators that assess the level of water and sanitation infrastructure</i> (1)	<i>Indicators that assess the use of the infrastructure and hygiene behavior</i> (2)	<i>Indicators that assess the health situation (reported by households/clinics)</i> (3)
<ul style="list-style-type: none"> ⊃ Percentage of households with water supply connections ⊃ Percentage of households with access to public water delivery point within 30 meters of residence ⊃ Average distance to delivery point from households ⊃ Number of people per public water delivery point ⊃ Percentage of population consuming less than 20 liters per capita per day ⊃ Percentage of households connected to piped sewer system ⊃ Percentage of households with access to functioning sanitation system within 10 meters of residence 	<ul style="list-style-type: none"> ⊃ Household water consumption ⊃ Household expenditure on soap ⊃ Household expenditure on detergents ⊃ Hand washing after defecation ⊃ Hand washing before food preparation, eating, and child care ⊃ Absence of fecal material on latrine surfaces 	<ul style="list-style-type: none"> ⊃ Child Health: ⊃ Infant mortality rate ⊃ Childhood mortality rate ⊃ Prevalence of malnutrition ⊃ Incidence and prevalence of main diseases: ⊃ Diarrhea ⊃ Dysentery ⊃ Hepatitis A

conditions often vary significantly among cities and rural areas within a country, so care must be taken in extrapolating results of small samples.

Care must also be taken when assessing income effects. For example, if a water and sanitation investment frees women’s time from water gathering or treatment, that would not by itself fully liberate a woman’s income earning potential if more general social disapproval of female labor mobility overlay the water and sanitation situation.

Tracking urban water prices and quality across seasons will reveal whether seasonal water scarcity or quality risks are an urban problem. That said, conditions can be radically different from year to year. For rural areas, water impact assessments must be made during all seasons to properly capture risks. Again, results can vary substantially from year to year.

23.3.3 Understanding the situation of the poor

The foregoing analysis provides insights on the strength of the linkages between water and sanitation and poverty. This section provides guidance on assessing the needs and demands of the poor in specific locations and on understanding the constraints they face in accessing water and sanitation services.

Assessing the needs and demands of the poor

There are various approaches to assessing the demands of the poor, ranging from revealed preference surveys to participatory rapid appraisals. All of them have pros and cons in terms of expected benefits and their suitability for different purposes, as detailed in technical note S.3. Whatever the approach taken, the objective is to understand people’s preferences, the levels of service for which users are willing to pay, and what financing and delivery mechanisms might ensure that the poor have affordable access.

Water and sanitation interventions never take place in a vacuum. Even the poorest communities may have individuals or small groups selling water and sanitation services. A failure to properly consult the poor on their preferences and current practices may lead to interventions that are simply not used or have a negative economic return because they displace existing water and sanitation services or facilities without offering significant quality or other service improvements.

Principles to be observed when conducting needs and demand assessments include ensuring that

- ⊃ the voices of the poor and underprivileged are heard and included in decisionmaking;

- ⊃ the preferences for services expressed by different groups and the contribution they are willing and able to make are clearly understood;
- ⊃ gender and cultural differences in the needs of different groups are recognized; and
- ⊃ the existing networks, power structures, and institutions are taken into consideration.

While recognition of the needs or demands felt or expressed by the poor is important, they may not be the sole determinant guiding interventions. For example, because it is a public good, sanitation may not get the attention it would deserve, and the lack of expressed demand is not a signal for doing nothing. It may rather point to creating demand for sanitation through hygiene education and increased awareness of its benefits.

Understanding the constraints

Demand assessments will provide some information on the constraints the poor perceive in accessing services. Some inhibiting factors may, however, not be known to the household, and they may therefore not surface in household interviews. A constraint analysis would consider both the obstacles recognized by the poor and other limiting factors that may indirectly influence household access.

In a general sense, people have inadequate water and sanitation because they are poor and lack the income to purchase the services they want. However, as discussed in section 23.2, the poor often pay more for their access than do the better-off households, both in absolute terms and relative to their income. Poverty alleviation programs seek to improve the income of the poor and thus their purchasing power. Pro-poor water and sanitation programs seek to improve access to services through policies or investments that reduce costs.

At the center of understanding the constraints is a good knowledge of the institutional, political, and regulatory framework that governs decisions by, and incentives of, the key stakeholders. The constraints on accessing water and sanitation services are likely to differ among rural areas, small towns, and cities. Location-specific features are explored below.

Rural areas. The outreach of central government is often limited in rural areas and focus on district centers remote from communities requiring assistance. This makes government agency managerial and logistical support cumbersome and costly, and unattractive to agency staff. In addition, the general lack of communication infrastructure such as roads increases the cost of accessing markets, clinics, schools, and other services, and reduces information flows from and to isolated communities. More details are provided in chapter 15, “Rural Poverty.”

In other situations it is not the remoteness that determines the poverty of a location. In many villages the poor live among the better-off households, and their constraints to accessing water and sanitation services are more likely associated with their lack of power to be properly consulted on their needs or to influence decisions.

Small towns. Small towns are perhaps best defined as being large enough that collective action and community management do not easily emerge yet too small to meet the fixed costs of a formal utility organization. Technically, their water supply and sanitation needs are not amenable to simple, point source solutions (such as a spring or a borehole), but the appropriate water and sanitation services have technical and managerial requirements that exceed the capacity of most small community organizations. Small town governments may not have the fiscal or legal authority to provide or regulate private provision of services that would be efficient or responsive to local needs. Even where towns have such authority, staff capacity to play these roles may be weak.

Urban and peri-urban areas. Slums and informal settlements housing the urban and peri-urban poor are commonly found on low-lying, flood-prone land, leading to drainage and sanitation problems, or on the steeply sloped hills, from which the residents have to descend to collect water. These places are often geographically isolated, dangerous, unhealthy, and lack basic infrastructure and services. Illegally squatting on a piece of land left vacant for the above reasons, the poor lack title to the land they occupy. For this reason, they have no access to formal service provision such as water and credit, they must rely on temporary, low-wage employment in the informal sector, and they are harassed by the authorities or

exploited by criminal gangs and profiteers who take advantage of their lack of recourse to the legal system (more details on the situation of the urban poor can be found in chapter 16, “Urban Poverty.”)

In addition to the constraints associated with urban poverty, urban water supply, in contrast to rural water supply, generally relies on a hierarchical system of networks that feed into neighborhood-level tertiary distribution systems. Serving the urban poor through the formal networks requires sufficient capacity in the primary and secondary network and adequate economic returns.

Network capacity increases may not be feasible where water resources are scarce, calling for careful management of water demand (financial and physical controls). And where economic returns are low, as is common in fringe or poor areas, there is low incentive for a utility to provide services. Combining this with the perceived high risk and, at times, legal constraints to delivering services to informal settlements renders financial costs prohibitively high. Possible activities aimed at reducing costs and ensuring adequate economic returns, such as providing bulk water to the edge of the informal settlement and allowing residents to organize and manage water distribution, are sometimes frustrated by unrealistic design and engineering standards that require household connections.

Construction of latrines and washing facilities is, by contrast, generally not limited by network economies. On-site sanitation, instead of sewerage connections, may be a suitable technical option and should not be discouraged without evidence of likely environmental damage. The constraints to on-site sanitation solutions are associated with other factors, such as lack of space for individual latrines in a densely populated slum or the reluctance to share a public latrine. The latter are often not well maintained and may not grant the privacy users require.

Constraints to service provision—many of which are interlinked—vary among rural, small town, and urban areas of a country. One of the larger challenges in developing the Poverty Reduction Strategy for water and sanitation will be understanding how the constraints function in the differing governance, financial, and social environments within the country. Table 23.2 presents one example of listing constraints and their relative importance. This work, when combined with the mapping of the poor discussed in the next section, provides the basis for prioritizing government interventions.

23.3.4 Targeting the poor

The foregoing sections identified the dimensions of poverty that need to be assessed when developing a Poverty Reduction Strategy. The impact of current government policy, whether the poor are indeed suffering from water and sanitation shortages, and understanding the behavior of the poor in the face of deprivation, all need to be understood when designing a water and sanitation program that targets the poor. If that analysis can be undertaken, it should reveal how best to target sector investments. But where large data or other gaps prevent good analysis, a simple methodology can yield a set of initial targets that can be refined as experience accumulates.

If poverty mapping data exist and show a very high overlap between income poverty and poor water and sanitation services, a poverty-oriented strategy could simply seek improved coverage within poor communities, using World Health Organization minimum standards as a norm. However, such a program should be complemented by work to better identify the relative impact of water stress and the poverty–water links discussed in section 23.3.2.

If one or more of the links stand out in either the initial or follow-up analysis, the strategy would concentrate resources on that link. For example, if the lack of water and sanitation in schools plays a major role in inhibiting girls’ schooling, the strategy could complement education sector resources with those from the water sector to provide needed water points and latrines. If sanitation coverage is good but health outcomes are still poor, further analysis might show that emphasis must shift to hygiene education. In that case, water sector financial resources might be less important than efforts to convince education and health authorities to add this to their own agendas.

An analysis of the constraints may orient strategy toward interventions that remove service barriers faced by the poor. Those interventions, however, may not be in the water sector itself. For example, if the poor are deterred from connecting to water or sanitation services by the initial capital investment, the key

Table 23.2. Problems Limiting Access to Water and Sanitation Services and their Relative Importance by Location

<i>Problems</i>	<i>Relative importance</i>		
	<i>Rural areas</i>	<i>Small towns</i>	<i>Urban areas</i>
Policies			
Subsidies. Untargeted broad-based subsidies often fail to reach intended beneficiaries, while reducing limited public funds for more targeted interventions.	high	high	high
Volatile and uncertain political climate. Uncertain private property rights and insufficient safeguards either deter private investors or increase the price of capital.	low	moderate	high
Water resource management policies. Absence of clear policies or water resource management or unclear property rights may lead to unsustainable extractions (for example, agriculture, industry), reducing overall groundwater sources, and polluting surface waters, thereby limiting the potential uses of surface water and increasing the cost to downstream users.	high	high	high
Laws and Regulations			
Insecure land titles makes formal network connections illegal or increases uncertainty and reduces investment incentives (for example, piped water system).	low	high	high
Exclusive rights to providers reduce competition and innovation and can prevent the poor from getting services from alternate providers where network services are not readily available.	low	moderate	high
Technical standards , which are inflexible and unrealistic, reduce affordable technical choices by increasing the cost and creating entry barriers for potential providers.	moderate	high	high
Institutions and Governance			
General lack of administrative, managerial, and technical capacity of both central and local government institutions—exacerbated outside principal cities by poor transportation and communication networks—constrains effective interaction with consumers and other stakeholders, reducing the access to information.	high	moderate to high	low to moderate
The presence of corruption and lack of transparency in decisionmaking of public institutions creates barriers to private competition and participation of the poor (who lack the voice or the money to bribe).	high	high	high
Absence of social capital (defined as the ability of individuals and households to secure benefits from being a member in social networks and other social structures) reduces the effectiveness in reaching the poor as beneficiaries from service provision.	moderate	high	high
Affordability			
Credit constraints due to underdeveloped financial markets, lack of creditworthiness of customers, and high transaction costs and absence of flexible payment mechanisms render investments that require cost contributions less affordable to the poor.	high	high	high
Connection cost and tariff structures. High connection fees or tariff structures (for example, increasing block tariff structures) at times make the cost of water prohibitively expensive.	low	moderate	high
Quantity of consumption. Lack of incentives for providers to serve the poor because low consumption does not provide sufficient economies of scale to cover the initial high fixed costs of the investment.	high	high	high
Location-based affordability constraints. Where poor communities are inhabiting marginal lands or remote locations more expensive to serve from the engineering point of view, incentives for service provision are low and where these services are provided they tend to be more expensive.	high	high	high

intervention may be access to flexible payment mechanisms or small credit schemes that allow them to spread costs over a longer period.

Finally, with the insights gained from this work, the existing national strategy for water and sanitation must be revisited for realism and consistency with the evolving goals in the PRSP. These initial goals must also be tested against the tools available to government for meeting them. As the next section stresses, government's most effective tools may be incremental policy change rather than incremental financing. The "Water Decade" of the 1980s pressured governments to boost spending on potable water supply. Countries have seen very slow progress since then. An important reason for that slow progress has been capture of the benefits by the nonpoor. Many countries now need to shift responsibility for water and sanitation services for the nonpoor off government budgets, freeing resources for their PRSP.

23.4 Options for Government Intervention

This section suggests a framework for considering options to close the identified service gaps. This does not necessarily mean that the government provides the services. Reduced government and increased private sector involvement may be appropriate, in which case the government intervention could be the removal of regulatory or legislative obstacles to private sector participation.

Rethinking sector strategy. Sector strategies that most effectively reach the poor emphasize efficient service delivery and improved targeting. With this in mind, the sequence of strategy formulation should begin with sector policy. Sector policy to help deliver better water and sanitation to the poor will be either hindered or supported by the overall national institutional and policy environment. Other chapters of this book address those important issues (for example, chapter 8, "Governance," and chapter 6, "Public Spending"), which will not be repeated here. Instead, this discussion concentrates on the sector policy environment and related choices about sector financing and direct service provision.

The impact of sector policy on the poor may be difficult to ascertain. For example, many countries have seemingly innocuous engineering standards specifying pipe size and materials, trench characteristics, delivery pressures, and so on; standards most often adopted from international (industrial country) norms. Two immediate problems arise. First, technology has been changing rapidly in recent years and standards may not have kept pace. In this case, new and cheaper engineering solutions may be ignored, to the detriment of the poor. Second, even when technology has not advanced, use of a lower standard may permit cheaper service to the poor. (An example might be a community water system operating at lower pressure than the urban standard, through pipes in trenches shallower than the standard.) The cost savings in such an approach may be sufficient to allow network service to the poor, a service much improved over current levels, even if it increases the risk of pipe failure.

Many other sector policies should be examined for their impact on service delivery to the poor. Does procurement policy make community contracting difficult? Labor policy may slow the entry of the private sector. Subsidy policy may favor wealthier communities that more easily generate matching funds or find political support in the legislature. Pricing policies might hinder cost recovery and jeopardize the sustainability of services and their extension to unserved, poor communities. Community consultation policies may overlook the poorest elements of generally poor communities. For example, a recent village consultation in one country showed that the very poorest ranked drinking water supplies as the most important investment, while the less poor ranked irrigation water most highly.

Sector policy should stress efficient service delivery. Many national, local, and consumer resources have been absorbed in inefficient operations that leave few resources with which to expand service access or improve service quality. Government has tools to address this, either through institutional change—most commonly the introduction of private operation—or through financial changes that shift payment burdens in a way that forces greater accountability.

Policy interventions are typically broad based and therefore may not be targeted exclusively to the poor. At a minimum, however, the government should ensure that policies avoid hurting the poor. While not all policies will speak directly to the needs of the poor, those on financial and service provision mechanisms generally can aspire to target them. The service gaps analysis, poverty mapping, and water

supply and sanitation system–poverty linkage assessment described in earlier sections provides the basis for this.

Poverty mapping, for example, will almost certainly reveal that needs are far greater than the government’s direct capability to satisfy them in a reasonable timeframe, reinforcing the requirement of effective government policies that support self-supply and other private solutions.

Settlement density and institutional structures play a large role in the choice of water supply and sanitation technology. Densely settled urban areas are almost always most efficiently served by piped water networks, and effluent concentrations nearly always demand collective handling. Such areas usually have local government units with substantial power to regulate, finance, or provide services. Small towns often have less obvious technical solutions, dependent in part on unknown future growth possibilities. In some countries they will have sufficient governance power to regulate or provide services, while in others they lack this power and staff capabilities. Rural areas typically lack the density that keeps unit costs low in piped networks, and they lack governance powers that lead easily to effective organization and regulation of such public supply. Sector policy and other interventions must take these differences into account.

Government can play three different roles in improving water and sanitation services:

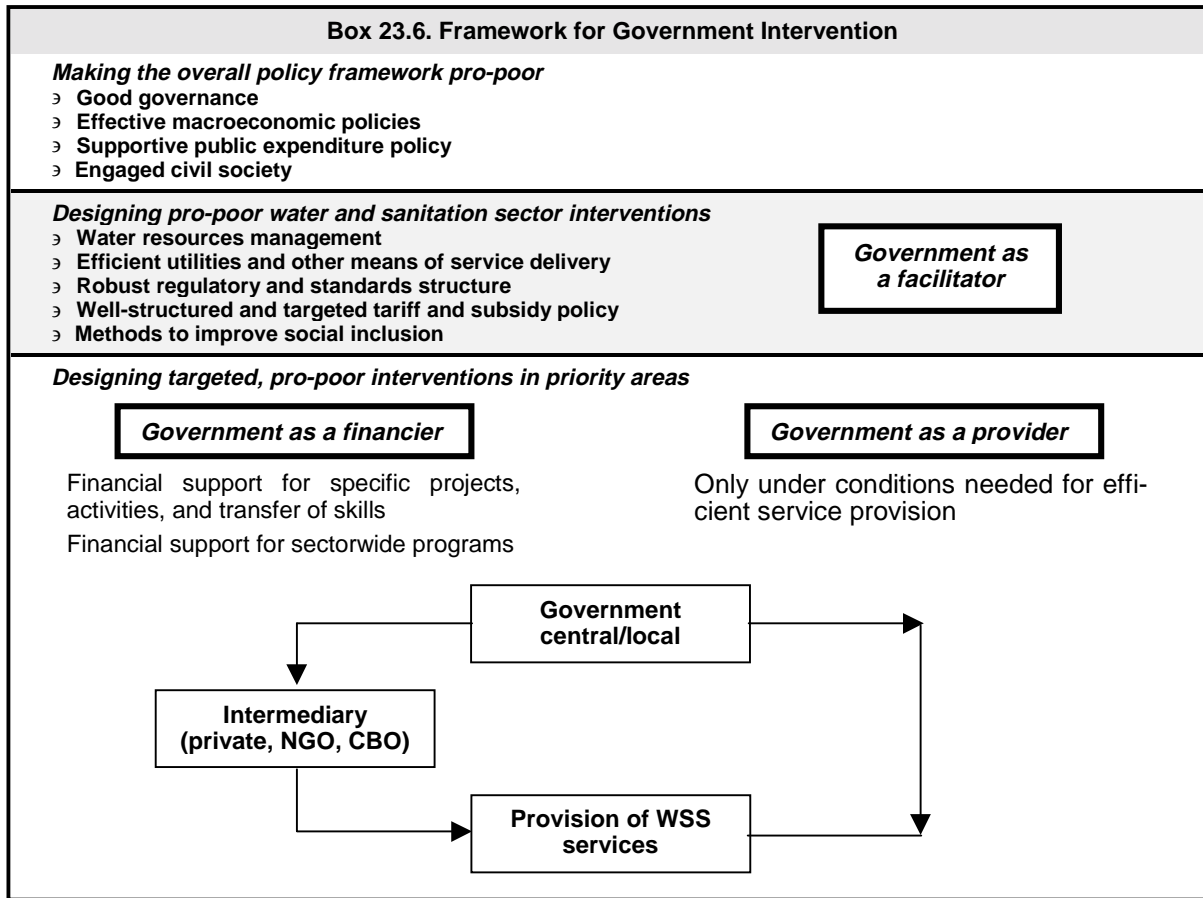
- a facilitator through an effective balance of sector organization and policymaking, including regulation and standard setting;
- a financier through targeted subsidies and support to private, community-based solutions to water and sanitation problems, or to private or public service providers; and
- a direct provider (although rarely) of services targeted to the poor.

Depending on the country and the geographical focus (urban or rural), the role of the government may be very different, as will be the mix of interventions. However, one important lesson from international experience is that governments need to work more on the facilitating the role of structuring good policy and institutional support for improved water and sanitation. Too often governments attempt to close service gaps through direct financial support or provision of services in a weak policy and institutional environment. The result has consistently been that services to the poor improve little or not at all. In urban areas, resources are lost in hugely inefficient government utilities that deliver little water to the poor. In rural areas, wells and pumps are put in but not maintained, and their service quickly deteriorates. Urban sanitation investments go to sewers for the better-off housing estates, or public toilets so badly kept that they repel visitors, while rural latrine subsidies go to the better-off rural households.

Because of the international experience, the ensuing discussion will stress the facilitator role. Progress on policy and institutional constraints costs relatively little in cash terms, but political costs may be substantial. The status quo tends to favor the wealthier and politically more powerful segments of society, groups that may not enjoy the pricing reforms nor pressure for efficient services that will free resources to expand coverage to the poor. They may not want to be reminded that the subsidies given to public systems in the name of the poor never reach that group, which continues to rely on more expensive, unsubsidized private services. The most sustainable means of freeing resources to spend on the poor may be through changing long-standing practices of distributing the benefits of public finance through routine subsidies for the operation of water and sanitation services. Box 23.6 summarizes the framework within which government and other actors operate.

23.4.1 The government as facilitator

Historically, and today in most low-income countries, the poor provide their own water and sanitation services, obtain them through community groups, or purchase them from private operators. For this reason, the starting point in designing or updating a poverty-oriented sector strategy must be that array of government laws, regulations, and institutions—the facilitating tools of a government—that help shape such service provision. Government policy choices can encourage (or discourage) demand-responsive and cost-conscious service provision. It can reinforce competition through transparent market entry and



protect the marketplace from arbitrary government action, or it can increase the cost of services to the poor through inappropriate entry restrictions or regulation.

This section highlights possible government policy interventions that help the poor benefit from water and sanitation policies. The arena for action is large, and the importance of policy areas will vary substantially among countries. The following list of policy areas is designed as a reminder of what may be important, rather than a ranking of importance.

Improving the overall policy framework

A policy framework for improving water and sanitation services for the poor rests on a number of pillars: (a) sustainable management of water resources, (b) efficient delivery of public and private services, (c) better access to those services, (d) research, development, and implementation of low-cost technologies, and (e) functioning pro-poor financial mechanisms.

Water resources management. Every country's water resource management regime has a major long-run impact on the quantity and quality of water available to the poor. The basic pro-poor goal coincides with that for society as a whole: to protect and equitably share water resources in a way that ensures sustainable access to low-cost, reasonably quality water supplies. The review of water use by the poor through the tools mentioned in section 23.3 will allow judgment on whether they are losing water access because of pollution or excess withdrawals by others. Where such losses are found, government intervention will usually be needed to design or enforce pollution control regulations (see chapter 11, "Environment," for guidance), help bring together water users to improve resource management, or to protect existing rights of the poor. Most countries have made slow progress in dealing with these issues, but failure here must typically be answered with costly treatment technologies, development of alternative water sources, or increased morbidity among the poor.

Efficient public and private service delivery. Public water and sanitation services are often plagued by inefficiency, which drives up service costs, restricts coverage, and leads either to needlessly high tariffs or equally needless subsidies. This performance has led to a recent increase in the number of public systems that have been concessioned or have otherwise brought in private operators. Technical note S.7 describes the privatization option in more detail. Private network services will likely have good technical efficiency for the level of inputs they use, but they may provide inferior or no services to the poor if the regulatory regime does not provide the right incentives for good performance. In creating a pro-poor sectoral policy environment, the following dimensions of the efficiency challenge deserve attention:

- **Competition and market structure.** Policy should support competition in infrastructure services. This is often best done by avoiding exclusive service licenses, service standards that force use of a particular technology, or high fixed administrative costs for businesses entering the market. The policy challenge is greatest in urban areas, where the middle- and upper-class neighborhoods may be served by network supply. In such cities, the poor often rely on standpipes, private vendors, or community supply. The regulatory temptation will be to dictate equal standards for all suppliers in such cities, but rules appropriate to large urban networks may be unworkable for the otherwise acceptable nonnetwork suppliers of the poor.
- **Regulation of water and sanitation suppliers.** The importance of water and sanitation services to public well-being dictates that they be regulated. Despite the value of competition, most urban citizens will be supplied through network utilities with substantial monopoly power. Good regulatory regimes will encourage more competition for the right to provide services, thus holding down costs. Such regimes will promote access to information and open competition in awarding contracts. They will benchmark utility performance (public and private) through databases of performance indicators. One benchmarking component can be service to the poor, measuring coverage in poor neighborhoods, and utility response to service or customer problems, analyzed on a neighborhood basis.

Improved access. Improving access by the poor may need to confront complex, multisectoral problems. For example, one common problem arises from property rights and land tenure. Without customer security of land tenure, utilities or other providers may face great risk investing in service to peri-urban and slum areas. These issues are discussed in detail in chapter 16, “Urban Poverty.” One challenge for network supply expansion comes from the relatively high upfront costs of a connection and in-house plumbing. The poor typically lack access to local capital markets or financial intermediaries. Policies that develop financial institutions, including microcredit, and reduce transaction costs will increase the ability of poor households to connect. They will also provide the means for utilities or small-scale private entrepreneurs to invest. Finally, but only with the support of sustainable financing regimes, utilities may be required to undertake universal service obligations. Such obligations must be designed with great care. Policies forbidding disconnection, for example, can encourage consumer refusal to pay reasonable and necessary service costs.

Research and development. Modest financial assistance may be devoted to supporting technological or social measures that aim to increase the affordability or availability of infrastructure services. For example, such a program could pilot innovative, community-based sanitation or water delivery institutions or technologies. When choosing areas to support, care must be taken to understand how the pilot project will be scaled up to broad regional or national use.

Pro-poor financial policy. Government policy on tariffs and subsidies may influence access of the poor to water and sanitation services even when government plays no direct financial role. For example, government may dictate tariff structures, collection policy, and cross-subsidy policy where services are privately supplied. Tariff and subsidy design will typically play a large role in strategy formulation.

Full-cost recovery for water and sanitation suppliers need not conflict with reducing poverty. Many studies have found that poor people already pay high prices and a significant proportion of their income for water supply. They often have little choice but to pay those costs if they buy water from private suppliers, as do so many of the urban poor. Ways should be sought, however, to ensure that the poor have access to a minimum volume of water necessary to meet their basic needs at an affordable price. Box 23.7 shows possible approaches, ideally within the context of the reform of a utility’s cost-recovery policy.

Box 23.7. Meeting Poverty Objectives while Restructuring Utility Cost Recovery Policy

- **Avoiding reverse cross-subsidy—ensure that poor people are not charged more for their water than better-off users.**
- **Identifying the poor and providing direct government payment to the utility for a portion of their bill.**
- **Easing the cost of connections for low-income users by subsidizing connection costs, or by allowing connection fees to be spread over a longer period, and included in monthly bills.**
- **Lifeline tariff—charging a low (often flat) rate for low-income or low-volume users. A typical ceiling for the lifeline tariff would be 6–8 liters per capita per day.**

Source: DFID (1998).

The basis for tariff reform should be an analysis of the utility’s financial costs and the economic costs of supply (and of necessary wastewater collection, treatment, and disposal), complemented by an analysis of consumers’ willingness to pay for water, and a financial analysis of existing and planned subsidies.

Sanitation services pose a special challenge in designing financial policy. The poor directly and almost fully capture the benefits of improved water services, but improved sanitation services may be perceived more in terms of convenience (for example, greater privacy) than the health benefits that drive pro-poor sanitation policy. This may lead the poor, and poor communities, to underinvest in sanitation. The health externalities argue for subsidies to close the demand gap, but in poor rural communities experience has shown that subsidy programs for improved latrines primarily benefit a small number of wealthier households and fail to reach the poorer households. Effective hygiene education campaigns may help close the demand gap and lower the subsidies needed to reach any target coverage level. Lowering sanitation investment and operation costs may be more effective than demand subsidies. This could be done through aiding small businesses to provide products and services rather than by subsidizing the products themselves.

Subsidies for the operation and maintenance costs of sewerage services should be avoided because they will typically be captured by the middle- and upper-income households and commercial and industrial users who are the first sewered. Recovering operation and maintenance costs through sewerage surcharges based on water consumption has the benefit of discouraging excessive water use.

Improving services in rural areas and small towns

Strategy development for rural areas and small towns hinges on institutional strength in such areas. Private water service provision is likely to dominate in these areas either through self-supply or vendor supply. Other common modes include community supply through standpipes or networks. Sanitation services, even more than water, rely on self-supply.

Direct government investment to increase rural and small town services has a dismal record of failure. The essential problem has been sustainability, an issue itself linked to initial technological choice and financing arrangements. Government often lacks low-cost means of working with communities, a challenge answered by shifting to a model of community-driven development. (Chapter 9, “Community-Driven Development,” discusses approaches that rely on community contracting or management.)

A rural and small town strategy should seek opportunities to reduce the cost of improved service. This section has already discussed the role of a research and piloting program to test new technologies. Another avenue to reduce costs is to improve the flow of goods and services to the rural areas. This flow is known as the “supply chain.” If pumps, pipes, latrine pans, spare parts, and so forth cannot be purchased locally, or have high price markups resulting from distribution inefficiencies, investment will be reduced. Although these constraints are known to be important, our understanding of how to overcome them is not well developed. In the case of hand pumps, preliminary research results suggest that having more than 200 installed within a local marketing area provides sufficient demand for parts that retailers will stock them. This, in turn, suggests that government efforts to popularize such innovations should avoid piloting small numbers over a large area—all will fail because of a lack of inexpensive repairs. On the contrary, geographically more concentrated investments may have the benefit of creating self-sustaining local parts supply and repair skills.

Village or small town water and sanitation supply often presents the challenge of being too small to enjoy substantial economies of scale or generate sufficient revenue to retain high-quality staff. Sector strategists will face difficult challenges in giving guidance in the choice between network and individual supply. Governments can assist by

- exploring possibilities of arrangements between towns and villages to develop effective services on a regional scale, and
- providing managerial and technical help through staff who move among localities, either on demand or on a regular schedule. These staff will provide training and assist in trouble-shooting.

Where community-managed water and sanitation services appear the most effective way to proceed. Table 23.3 below outlines key design principles that are further elaborated in technical note S.4).

Urban and peri-urban areas

In urban settings, sector policy should seek to substantially increase efficiency in network supply. This may not in itself improve service to the poor, but it is a precondition for expanding such service. A diagnosis of current efficiency can be done with the help of benchmarks established for similar water supply systems elsewhere. This often reveals very high leakage from physical causes and, sometimes, illegal connections, as well as high usage of low-quality labor input. Investing additional funds in such a system will probably lead to increased expenditure on labor and other inputs but very little additional water reaching the poor.

Any government seeking to close gaps in urban network services to the poor should, at a minimum, study both the efficiency of the current public services and compare them to the efficiency of private services in cities of similar size in other countries at similar income levels. This will help highlight whether private provision offers significant scope for savings.

The countries most successful in expanding urban water service provision are those that charge cost-covering tariffs. This permits self-financing by systems, thereby ending public fiscal burdens. Because they are paying full costs, customers are more likely to demand adequate service. Covering costs of existing service may not provide enough cash to expand service to the poor, but it allows the utility to efficiently operate the existing system, and it ends general system subsidies from the government, subsidies going mostly to the nonpoor. These actions, in turn, facilitate the introduction of pro-poor policies, whether the utility is publicly or privately managed. Good pricing policy thus forms a key element of pro-poor policy and should be implemented before either a switch to private providers or programs to increase public utility efficiency. And those actions must precede the injection of additional public funds to expand services. Box 23.8 summarizes the steps to reaching the urban poor through network supply.

The network efficiency efforts must recognize that the poor continue to rely on various forms of non-network water supply. Thus an urban sector strategy should seek to minimize the cost of alternative supply sources, even when the long-run policy goal may be complete coverage by network supply. This does not entail subsidization, but rather that government provide a policy environment that permits alternative suppliers to operate under business conditions no less supportive than other business lines.

Box 23.8. Steps to Reach the Urban Poor through Expanding Network Supply

- 1. Analyze current supply efficiency and the cost of efficient supply.**
- 2. Restructure tariffs to eliminate general subsidies and increase revenue to fully cover the cost of efficient supply.**
- 3. Concurrently implement lessons of step 1 to boost utility efficiency through new labor and wage policy, metering, and so on through the public sector or public/private partnerships.**
- 4. Introduce pro-poor policies (that is, increased connection rates) based on the anticipated higher utility efficiency. This would be part of the regulatory and incentive framework in a switch from public to private operation.**
- 5. Introduce complementary measures such as credit schemes to finance hook-up costs for the poor.**

Table 23.3. Key Design Principles for Rural Water Supply and Sanitation Interventions

Policy area	Identified constraints	Possible interventions
Policy environment	Limited political commitment, weak legal framework, and poor governance lead to unstable policy environment for sector. This results in: underinvestment, undefined ownership, poor participation, weak regulation, and conflicting priorities.	<p>Promote a demand-responsive approach where communities make informed choices regarding their participation, service level, and service delivery mechanisms.</p> <p>Promote institutional reform based on clear roles for key stakeholders where communities own their facilities, the private sector provides goods and services, and government facilitates the process.</p> <p>Ensure appropriate legal framework for ownership and management.</p> <p>Implement community water supply projects within the context of broader community and local government development.</p>
Financing options	Demand for services is increasing, but service expansion has been constrained by insufficient resource allocation from the public sector, inefficient investments in costly schemes, and a lack of capacity to mobilize resources from users, local government, private sector, and others.	<p>Establish financial policies that underpin demand-responsive approach where communities pay part of the capital cost in proportion to the cost of the facilities and all operations and maintenance costs.</p> <p>Promote increased capital cost recovery from users by establishing mechanisms that reduce upfront capital cost.</p>
Service delivery options	Government monopoly on service provision has resulted in lack of accountability and community ownership, poor management and sustainability, low-quality services, and weak development of private sector and alternative delivery options.	<p>Support formation of representative water user associations for planning, implementation, and management of community water supply facilities.</p> <p>Promote community contracting and transparency in all procurement.</p> <p>Create competitive environment for allowing communities to access a range of providers of goods and services for all aspects of the project cycle.</p>
Hygiene and sanitation	Full economic and health impact of improved community water supply are often not achieved due to lack of attention to hygiene education and sanitation. Approaches to sanitation have focused mostly on technology aspects, rather than on behavior changes and creating a market (supply and demand) for sanitation facilities.	<p>Integrate water, sanitation, and hygiene education in community water supply projects.</p> <p>Promote user investment in sanitation through public awareness and education in hygiene and environmental sanitation. Strengthen the private sector's ability to construct facilities.</p>
Participation and gender	Lack of community, and especially of women's, involvement, is a major cause of poor service sustainability. Traditional project design did not consider the project rules and incentives required to achieve full participation.	Demand-responsive rules, tools, and incentives for project staff to include excluded groups will help achieve full participation and improve outcomes.
Poverty and access	Majority of clients are the poor, and poorest are outside the cash economy and politically weak; it is easier to provide services to the rich; population is increasing; and there are decreased services and resources as well as lack of political commitment toward the poor.	<p>Set rules to target poor, unserved communities and vulnerable groups in these communities:</p> <ul style="list-style-type: none"> ➤ Develop baseline information, identify vulnerable groups, and monitor access of the poorer communities to project services. ➤ Expand range of technology options, building on existing resources in community. ➤ Ensure adequate flow of information to all eligible communities and ensure adequate social intermediation and participation by all groups, including women, poor, and minorities. ➤ Recognize and build on informal safety nets within communities. ➤ Involve women and minority groups in community decisions and management.

23.4.2 The government as financier

Governments tend to have a low success rate in financing water supply and sanitation for the poor. Too often funds and subsidies fail to reach the intended beneficiaries, and they have typically proven unsustainable.

Government financing

The type of assistance that may be provided by government in partnership with donors and financial institutions includes both conventional capital aid (financial support for specific projects and activities) and technical cooperation (transfer of skills). There is also the option to provide resources more strategically in support of sectorwide programs. For the water supply and sanitation sector, the various types of assistance may be managed through long-term development assistance programs (for example, multidonor, sectorwide approaches or sector investment programs).

Government may also financially support utilities during the reform process. Indeed, a key issue is to establish financially autonomous utilities: poor people are unlikely to benefit from system expansion to cover low-income areas unless steps are taken to tackle the financial and operational weaknesses of the utility as a whole.

Other important issues include the following:

- ⊃ Avoid grants that promote irresponsible pricing or excessive capital investment.
- ⊃ Promote links with municipal finance and fiscal decentralization reforms. Municipalities that are in systemic deficit may use the cash flows of their utilities to fill financial gaps. On the contrary, municipalities that can benefit from generous tax breaks or grants may lack incentives to adopt efficient institutional setups or to price water responsibly.
- ⊃ A key challenge is to have banking and capital market resources available locally and help utilities tap these local markets. Where government provides financial assistance, they should make equity and quasi-equity contributions and provide guarantees, using direct loans only as a last resort.

Subsidies

Many national and local governments devote considerable resources to subsidizing the capital and operating costs of water and sanitation schemes. In country after country, however, studies of the impact of those subsidies show that the benefits go primarily to the nonpoor. Several factors drive this result, such as the grant nature of many of these projects that removes much of the incentive for careful procurement, and funds end up with construction firms through excessive capital costs. Second, inefficient operation of investments similarly diverts funds to employees or suppliers. Third, network water supply or wastewater collection services go primarily to the nonpoor, thereby allowing them to capture the bulk of subsidies to such systems. Fourth, subsidies are often positively related to consumption, which is higher for the nonpoor. Finally, where subsidies come with beneficiary cofinancing requirements, they tend to go first to the nonpoor or less poor people better able to meet that requirement. Thus the first challenge in rethinking subsidy strategy is to analyze the poverty impact of existing subsidies. Technical note S.5 provides several country case studies showing how the analysis has been done and has facilitated subsidy redesign.

The economic rationale for subsidies—to offset market inefficiencies where prices fail to reflect significant external benefits—supports their use in certain well-defined water and sanitation projects. But the lessons cited in Technical note S.5 show very few cases where income redistribution occurs efficiently through such projects. The externality argument can certainly be made for subsidies in some sanitation projects, but again the challenge is to target the benefit to the poor. The nonpoor, who could afford improved sanitation without subsidy, are often the main beneficiaries. Good subsidy design recognizes these problems and seeks approaches that maximize benefits to the poor. In the sanitation case, subsidies could support hygiene education and sanitation promotion through means known to reach the poor. For example, in a region with low literacy, this might imply reliance on oral teaching and pictures rather than text.

Subsidy design problems are not unique to the water and sanitation sector. Good policy design principles apply to all utility services and, more broadly, are best applied through an income policy with national scope. Because of their common features across infrastructure, subsidy design is treated in box 20.5 of chapter 20, “Private Sector and Infrastructure: Overview.”

In summary, government financing can play a valuable role in improving water and sanitation services to the poor. But historically much of the benefit of such efforts has gone to the nonpoor. The challenge facing the sector strategy is thus effective targeting. In most cases, that will mean avoiding blanket subsidies and looking for ways to reduce input costs, increase private demand for sanitation, and facilitate the extension of credit to the poor.

23.4.3 The government as provider of services to the poor

Governments have often proven to be very inefficient direct providers of water and sanitation services to the poor. Whether in rural areas, where they face high overhead costs in service provision, or urban areas, where state-owned firms in water and sanitation fare no better than those in any other sector, government services consistently fall well below efficiency benchmarks set by the private sector. The result is higher cost services that fail to meet quality or coverage targets. Exceptions to this pattern can be found but are sufficiently rare that, unless a country already enjoys efficient provision from public providers, a forward-looking strategy should not be based on these limited success stories.

The rural context

International experience provides clear guidance on the role of government in direct water and sanitation service provision in rural areas: do not make this an element of strategy. Costs are simply too high in relation to local private provision and the willingness or ability of poor people to pay. As a result the facilitating and, possibly, financing roles are the only ones that should factor into a rural water or sanitation Poverty Reduction Strategy.

Poor communities may lobby for direct government service provision. They typically do so in countries with a long history of heavy government subsidies in providing such service. Unfortunately, those services also have a correspondingly long history of low efficiency, wasteful water use, and high service failure rates. They have simply proven unsustainable. In countries where the sector has inherited a government role as a direct service provider, the best strategy will be devolution of control to community groups or private providers. Where that is not possible, government should at a minimum avoid creating further long-term subsidy demands through further system expansion.

The urban context

There are a few examples of successful reform of inefficient, publicly run water and sanitation utilities, but failed attempts at such reform are much more common. This fact has led a number of medium-size and large cities to privatize their system operations in recent years. Privatization is not a panacea; examples of badly run private systems can also be found. However, private operation has succeeded in many cases. First, the profit motive compels the utilities to seek operating efficiencies. Lost water means lost revenue and, hence, lost profit. Second, a private utility works under much closer public scrutiny and under regulation from a government that is much readier to criticize and act against a private operator than a public operator. Third, private operators are likely to draw more efficiently on international experience to optimize system performance. In many urban areas, private operators can produce sufficient efficiencies to earn their profit while actually reducing total operating costs. Unfortunately, this does not mean that tariff increases may not be needed. If revenues in the existing system covered only a small percentage of total operating costs, a tariff increase would be needed no matter what type of operator was employed.

The government should make an informed decision as to whether it would be desirable to continue to directly provide water and sanitation services. This decision should be based on the analysis of its

comparative advantage, or lack thereof, in relation to alternatives such as provision by community-based organizations or the private sector:

- ⊃ *Efficiency*. Do public providers have a record of economic efficiency in line with that of private operators?
- ⊃ *Financial resources*. Would a shift to private sector or community-based operation bring in more financial resources?
- ⊃ *Technical capabilities*. Does the private sector routinely use more modern technologies?
- ⊃ *Managerial record*. Does the private sector or do the community-based operations have stronger managerial records?

Technical note S.7 provides additional detail on how best to allocate responsibilities between the public and private sectors.

23.4.4 Prioritizing government interventions

The history of government intervention in the water and sanitation sector provides clear lessons for the process of pro-poor strategy development. The poor rely much more than others on self-provision or other private solutions. Thus government must first review the institutional and policy environment it creates for such solutions. It must pay special attention to water resources and environmental management, for these determine the quality and quantity of the raw water resource on which so many poor people directly depend. If needed, it must recast other policy to maximize competition and lower administration.

With the policy and institutional review complete, government is in a position to consider the most effective means of using any available fiscal resources. In the case of water and sanitation, this means avoiding blanket service subsidies for water or sanitation. It implies a search for financing mechanisms, such as support for microcredit, that base operations on borrower demand. Experience suggests that direct government provision and management of services should not be a central element of strategy, except in countries already demonstrating highly efficient delivery of such services.

Sections 23.2 to 23.4 have pointed to causes of poverty related to water and sanitation, as well as means to address the constraints faced by the poor. Making use of the information provided in these sections for prioritizing government interventions entails the following step-by-step approach, considering the following elements:

- ⊃ identifying the location of the poor geographically, in order to better target possible government interventions;
- ⊃ in parallel, monitoring the proposed linkages between water and sanitation access and poverty dimensions and assessing whether these hold true in the country context;
- ⊃ assessing the needs of the poor and the constraints they face in accessing services in the priority areas identified in the first two steps;
- ⊃ identifying options for government intervention that would address the constraints and would cater to the needs of the poor assessed; and
- ⊃ ranking options based on the numbers of poor benefiting, relative to the degree of benefit, the financial cost, and the political feasibility of realizing the chosen intervention in an acceptable timeframe.

While some options for government intervention that are cost-effective may not be politically feasible in the short term (for example, some institutional reforms), they should not be discarded. A prudent approach to a poverty reduction strategy takes into consideration tradeoffs and designs short-, medium-, and long-term strategies with a menu of different options. These could entail (a) rapid response mechanisms to address the immediate needs of the poor for the short run, and, in parallel, (b) the design of a framework for medium- and long-term policy changes that will set direction for the future.

There is an inherent risk that medium- and long-term policy visions may be hijacked by political considerations. In order to set a Poverty Reduction Strategy on a firm track, current governments may want to pursue irreversible changes requiring the consensus of other political parties, combined with a clear communication campaign to advertise changes to the stakeholders that are affected or benefit from such policy changes.

23.5 Monitoring and Evaluation Framework

While improving access to water and sanitation services may in itself be one of the goals of a PRSP, it is more often regarded as a means of achieving goals in other dimensions of poverty. Such goals may include improving health and education, promoting gender equality and social inclusion, and reducing income poverty. In this context, monitoring and evaluation of the poverty impacts of water and sanitation policies require a cross-sectoral approach that fully accounts for the many indirect benefits associated with the provision of water and sanitation services.

As discussed in-depth in chapter 3, “Monitoring and Evaluation,” these are two complementary but different activities. Monitoring involves tracking progress towards agreed on goals and targets, whereas evaluation entails establishing causal links between policy actions and observed outcomes. Both activities are important to measure performance, identify and correct potential problems early on, and improve the understanding of the relationship between different poverty outcomes and water and sanitation policies.

Although many of the concepts and some methodologies are the same, there are important differences between monitoring and evaluation at the project level and at the level of a national strategy. These differences are associated with the scale of the system required, the selection of indicators, data sources, and the objectives of the feedback process. The following sections focus on monitoring and evaluating water and sanitation activities for PRSPs.

23.5.1 Monitoring issues in water and sanitation

Selecting indicators

Monitoring starts with selecting a few key indicators that are relevant to the goals agreed on in the Poverty Reduction Strategy. There is no general rule about the optimal number of indicators; however, it is preferable to select only a few that can be measured well on a timely basis and provide useful information for decisionmaking rather than selecting too many, measuring them badly, and not using them at all. It is important to distinguish between a cross-sectoral core set of indicators for monitoring the overall PRSP from a probably larger and more comprehensive set of indicators for sectoral monitoring.

The selection process would generally consider three broad types of complementary indicators: impact, outcome, and intermediate indicators. Technical note S.8 provides some guidance and examples on the choice of indicators. However, the final selection of indicators should be driven by the specific poverty reduction goals, policy choices, monitoring capacity, and the views expressed in the participatory processes of each country.

Impact indicators. Impact indicators measure the final effect of water and sanitation interventions on different poverty dimensions. In particular, they are used to track progress on achieving goals related to improving the health status of the population, increasing education levels, and reducing gender inequities and social exclusion. For health-related goals, mortality rates, malnutrition rates, or waterborne disease incidence can be appropriate indicators. Since children are particularly vulnerable to waterborne diseases, such as diarrhea, which may affect their nutritional status, the above indicators are usually measured in children under five years old. As mentioned above, lack of appropriate sanitation facilities in schools and the time spent in fetching water may be factors hindering progress in education goals, particularly for girls. Therefore, girls’ school enrollment or girls’ educational attainment are alternative indicators for monitoring progress on education, in addition to gender equity goals.

Outcome indicators. A combination of measures of use and satisfaction with water and sanitation services is desirable for complementing impact monitoring. These outcome indicators are intended to capture “midway” effects that are generally considered as necessary but not sufficient conditions to achieve final impacts. Ideally, the monitoring system should include indicators such as the percentage of households with a minimum consumption of safe water per capita per day to satisfy their basic drinking, cooking, and hygiene requirements. However, this involves a number of definition and measurement problems.

For example, it requires an agreement on what can be considered as safe water, what is the minimum acceptable level of consumption, and how to measure these. An accurate self-reported measurement of water consumption is difficult to get: typically, relatively few households in urban areas have private connections with individual water meters, and relatively few know how much water they are buying from private vendors. Where people normally haul all of their own water, the best estimate available may be the number of buckets of water fetched daily. It is also costly to perform laboratory tests to obtain an accurate measure of water quality. While routine in the context of urban networked water supply, regular monitoring in rural areas has often proven too expensive to establish.

Ideal indicators may not be good indicators if they are too difficult or costly to measure well. It may be better to use a proxy, such as a measure of access to water, rather than water consumption. Commonly used access indicators include the percentage of households with water supply connections or private tube wells and the percentage of households with access to a public water delivery point within a reasonable distance from the home. It is important to specify the distance or travel time to the water delivery point. As discussed earlier, how far a family has to travel and the queuing time influence the consumption level. What is considered as a reasonable distance or travel time will vary depending on specific circumstances such as climate and terrain conditions—a half an hour travel time under extreme weather conditions or uphill is not the same as half an hour walking on flat terrain in moderate temperatures.

While somewhat easier to obtain, access indicators need to be considered with care. It is important to complement them with measures of quality and user satisfaction. Alternative quality and satisfaction indicators are the percentage of households with continuous water supply throughout the year and the percentage of households reporting satisfaction with water and sanitation services.

As shown in technical note S.1, most countries experience large variations in access to water and sanitation across rural and urban areas. Monitoring indicators, particularly outcome indicators, should be disaggregated at least at the rural and urban level to allow tracking progress in closing the gap between better-off and worse-off areas.

Intermediate (input/output) indicators. Variables measured by impact and outcome indicators depend on a multitude of cross-sectoral factors. Many, such as household behavioral responses, are outside government control. Moreover, changes in these variables may occur only in the medium to long run. Thus it is important to complement impact and outcome indicators with intermediate indicators. Intermediate indicators provide information on actions taken and their efficiency level in improving the coverage and quality of water and sanitation services. They measure things that reflect policy changes and are relevant inputs to achieving the agreed on goals. Since it is difficult to find all these attributes in just one indicator, generally the monitoring system would include a combination of measures of investment or expenditure levels in water and sanitation that are pro-poor, some measure of the services generated, and the efficiency of their production as intermediate indicators. Box 23.9 describes a software tool for monitoring utility performance using intermediate indicators.

Data sources for monitoring

Monitoring water and sanitation interventions requires a combination of data sources, including household surveys and administrative data from utilities and other agents engaged in the provision of services. Qualitative data from participatory poverty assessments or other similar studies may also be required. Table 23.4 summarizes the main sources of household data relevant for water and sanitation monitoring (for more information, see chapter 1, “Poverty Measurement and Analysis,” and chapter 3, “Monitoring and Evaluation”).

Box 23.9. Monitoring Utility Performance

Most utilities compile some form of performance statistics. The use of these statistics to inform stakeholders of the relative performance of utilities is less well developed. There can be large performance disparities within and between countries, even among those at the same stage of development. Inadequate performance, highlighted by such comparisons, typically reveals that poor performers have low tariffs, poor bill collection, high system leakage levels, and high unit operating costs. The end result is insufficient funds to invest in the systems to provide good quality water and to expand water service coverage, particularly to the poor.

A current World Bank initiative helps client countries measure the performance of their water and sanitation utilities. Called the Benchmarking Start-Up Kit initiative, it comprises a suite of software resources that will allow users to compile a representative set of performance indicators for the sector. The kit includes standard data definitions, computational approaches and presentational methods, and performance indicators on coverage, unaccounted for water, pipe network performance, quality of service, financial performance, water consumption and production, metering practices, cost and staffing, billings and collections, and capital investments.

Baseline data on impact and outcome indicators can be obtained from recent Living Standard Measurement Study (LSMS) surveys or Integrated Surveys (IS), Demographic and Health Surveys (DHS), and the census. Annual monitoring for a number of indicators can be done using information from Priority Surveys (PS) or Core Welfare Indicator Questionnaire (CWIQ) surveys. The monitoring frequency of indicators not included in the CWIQ—mostly health and income or consumption indicators—will vary between three to five years depending on the schedule for LSMS- or DHS-type surveys.

Administrative records can provide useful information for monitoring some indicators. For example, if utilities have effective metering programs, client databases can provide some information on consumption levels. Records kept by public health departments can provide information on water quality. In addition, appropriate government ministries or departments may collect data on service coverage. These data can be a relatively low-cost alternative to collect data for water and sanitation monitoring on a frequent basis. However, they have some drawbacks. They do not provide information on the consumption patterns of informal connections or users without meters. Moreover, unlike other sectors, administrative data relevant for water and sanitation comes from different line ministries and other government

Table 23.4. Main Data Sources for Monitoring Water and Sanitation Interventions

<i>Data source</i>	<i>Relevant data for water and sanitation monitoring</i>	<i>Remarks</i>
Census	Collects demographic and socioeconomic information as well as data on access to basic services including water and sanitation.	<ul style="list-style-type: none"> ➤ Information can be highly disaggregated. ➤ Conducted only once every 10 years.
LSMS/IS	Record detailed data on household expenditures to construct consumption aggregates. They also collect some health indicators such as diarrhea incidence and often include anthropometric measures. For water and sanitation use, they generally ask how much the household has spent on water services, the source of water supply, the average number of hours a day in which the dwelling receives water, and whether there is a sewerage connection.	<ul style="list-style-type: none"> ➤ Comprehensive, nationally representative household survey; allows simultaneous measurement and analysis of various poverty dimensions. ➤ Collection and analysis of information is very time consuming.
DHS	Provides data for a wide range of population, health, and nutrition indicators, including mortality rates, children nutritional status, diarrhea, and sometimes other waterborne disease incidence. It also collects basic data on socioeconomic indicators, including access to safe water or to a sanitary latrine.	<ul style="list-style-type: none"> ➤ Nationally representative data on health, nutrition, and population. ➤ Interim surveys focused on key indicators are conducted between rounds of full DHS. ➤ No consumption or detailed income information.
PS/CWIQ	Collects information, ideally on an annual basis, to measure people's access, usage, and satisfaction with selected social and economic services. Relevant information includes access to safe water, type of toilet facility, children's nutritional status, net enrollment rates, and reasons for not attending school.	<ul style="list-style-type: none"> ➤ Quick and cost effective. ➤ Collects limited information; no consumption or detailed income information.
Qualitative studies	Can provide information on user satisfaction with water and sanitation services and sometimes hygiene behaviors.	<ul style="list-style-type: none"> ➤ Sample size generally too small.

offices. This requires a great deal of interinstitutional coordination and collaboration to ensure timely availability of all necessary data and makes it more difficult to ensure quality control.

23.5.2 Assessing water and sanitation policies and programs

Regular monitoring can be complemented with more in-depth assessments of particular policies and programs. Depending on the methodology applied, these studies can answer different questions of interest such as which social groups are benefiting from public spending in water and sanitation and to what extent changes in well-being indicators can be attributed to a particular policy or program. Two commonly used assessments for water and sanitation are discussed below.

Impact Evaluation. As discussed in detail in chapter 3, “Monitoring and Evaluation,” impact evaluations try to determine the causal relationship between policies and programs and observed changes in individual’s well-being. In the water and sanitation context, evaluations have focused mostly on establishing the causality between changes in health indicators, principally diarrhea incidence, and improvements in water and sanitation. Experience in conducting these types of studies is mixed. A number of methodological problems and concerns regarding costs have led to limiting the use of impact evaluations as an operational tool for project evaluation and proposing alternative approaches that look at outcomes such as hygiene behavior rather than health impacts (see technical note S.2).

There are, however, some rigorous attempts to measure health improvements from investments in water and sanitation. Jalan and Ravallion (2001) assessed the impact of piped water on the incidence and duration of diarrhea among children under five in poor families. Another example is the evaluation of the Social Fund in Nicaragua. It assessed the impact of water supply investments and latrine projects on malnutrition (World Bank 2000). Two factors may have contributed to the usefulness and reasonable costs of these studies. First, they drew on existing or ongoing large household surveys, saving much of the costs of creating and implementing a whole new data collection instrument. Second, they applied a methodology recently adapted for evaluation of social programs—propensity score matching—that is generally considered as a second best solution when randomization is not feasible (see chapter 3, “Monitoring and Evaluation”).

Benefit Incidence Analysis. Benefit or spending incidence analysis is another common tool for performance assessment. As described in detail in chapter 6, “Public Spending,” benefit incidence analysis examines whether poorer households derive a proportionally larger share of benefits from public spending than do wealthier households relative to the overall income distribution. It helps determine how progressive, regressive, or neutral is the public spending on water and sanitation. Technical note S.5 presents some examples of the use of benefit incidence analysis to assess tariff structures and subsidy schemes.

Benefit incidence analysis can provide useful insights into the social distribution of the benefits of government service provision and spending on water and sanitation and is relatively simple to carry out. However, it has its limitations (see chapter 6, “Public Spending”). The cost of services is used as a proxy for the benefits received from having access to a particular type of service. This, of course, is a crude measure of benefits and fails to consider the ability of different social groups to transform access to the service into improved well-being as measured by, for example, lower mortality rates. Furthermore, government spending used to calculate service costs may not represent the full cost to users. Full costs may also include direct payments to service providers, travel expenses, and the opportunity cost of time lost to productive activities.

23.5.3 Using monitoring and evaluating results

A critical issue in monitoring and evaluation is how to use the results and create a feedback process. As shown in figure 23.2, monitoring and evaluation results can be used to clarify further the linkages between water and sanitation and other poverty dimensions, redefine problem areas, and refine the menu of possible public interventions. Diagnostic questions that can be answered by the feedback from monitoring and evaluation results include the following:

Progress in goal achievement:

- Were all the targets set met?
- Were the targets realistic?
- Were there major economywide factors or shocks that influenced the progress in goal achievement?

Poverty linkages:

- Did improvements in water and sanitation access parallel reductions in water- and sanitation-related diseases, especially diarrhea? If not, was improved access to infrastructure accompanied by better hygienic behavior? If improvements in hygienic behavior could be observed without improvements in health indicators, is the water of drinkable quality and available throughout the year?
- Did improvements in water and sanitation infrastructure in schools parallel an increase in children (especially girls) attending classes?

Identification of problem areas:

- Is there evidence that constraints to service access were removed with the help of the chosen set of interventions?

Choice of interventions:

- Who is benefiting from public spending and in what proportion?
- Do the key interventions achieve their intended goal?
- Can the changes in outcomes be explained by these interventions, or are they the result of some other factors occurring simultaneously?
- Does the impact of key interventions vary across different groups of intended beneficiaries (males, females, indigenous people), regions, and over time?
- How effective is a particular policy or program in comparison to alternative interventions? Is the intervention worth the resources it costs?

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Chapter 24

Information and Communication Technologies

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24.1 Introduction

Lack of access to information and communications technologies (ICTs) is clearly not an element of poverty in the way that insufficient nutrition or inadequate shelter is, but ICTs are increasingly important in the effort to escape poverty. The poor recognize this: research indicates that given the option, they are willing to spend over 2 percent of their income on telecommunications alone (deMelo 2000). The poor in Chile, for example, spend about the same amount on telecommunications as they do on electricity, and the average consumer in Chile spends more of his or her income on telecommunications than on electricity and water combined (figure 24.1). This figure excludes expenditures on numerous other communications tools—including radio, television, and mail.

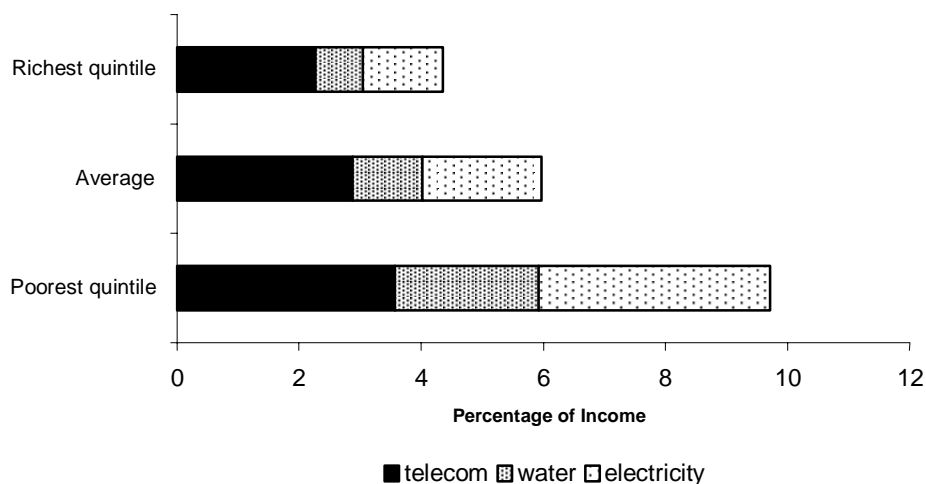
ICTs provide access to information that can create earnings opportunities, improve access to basic services, or increase the impact of education and health interventions. ICTs also give the poor a medium through which to demand government support and reform. Recent advances in ICT can also provide people with sensory disabilities a means by which to access information and communicate efficiently with the rest of society. Section 24.2 outlines some of the ways in which the poor are using ICTs to improve their own lives, and some of the ways in which governments can use ICTs to improve their service delivery, especially to the poorest.

The examples in section 24.2 suggest that the role ICTs play in poverty reduction depends on their catalytic and leveraging effect on earnings opportunities, on educational services, and on welfare provision. But because information exchange is part of nearly every element of an economy, the impact of improvements in the capacity for information exchange will depend critically on how the rest of the economy functions. This suggests the centrality of a holistic approach in evaluating the impact of ICT development. For example, the impact of improved ICT access on farm earnings through increased knowledge of market prices will be muted if there are no roads to carry crops to markets or if there are no markets because of an unreformed agricultural sector. This lesson should be of particular concern to policymakers in the government services sector, as increased ICT use in government can be successful only as part of a larger reform effort.

Similarly, the level of provision of ICT services and efficient, affordable, and widespread ICT access depends on broader policy factors—for instance, rules governing FDI, the provision of reliable electricity, literacy (particularly for the Internet), and a range of other conditions.

ICTs can also benefit from complementarities across sectors. If done correctly, for example, rolling out telecommunications services to local government offices can greatly reduce the costs of servicing nearby community centers. Further, it is far cheaper to roll out ICT service at the same time that other

Figure 24.1. Percentage of Spending on Utilities in Chile



Source: deMelo (2000).

utilities are being rolled out. Wires and water pipes can be buried together, and roads and telephone poles can be built at the same time.

This range of bicausal relations helps to explain research that finds a strong link between telephone rollout and several measures of broad-based development. Allowing for income per capita, which is highly correlated with most measures of development, including telephones per capita, a highly significant and positive relationship exists between the number of telephones per capita and both literacy rates and life expectancy (Grace and others 2001). Figure 24.2 illustrates this bicausal relationship graphically. The thickness of the arrows suggests the strength of the causal relationship. The strength of interlinkages between a pro-poor ICT agenda and pro-poor agendas in other sectors should be of paramount importance for policymakers as they develop poverty reduction strategies with an ICT component.

Despite these potential links between ICTs and poverty reduction, direct access by the poor to more advanced ICTs in particular is extremely limited. As much as 80 percent of the population of many developing countries listen to radio every week (www.rfd.freeuk.com). Figure 24.3 suggests that even the poorest developing countries also have more televisions per capita than would be suggested by their income levels. But citizens of poor countries have significantly less access to telephones and the Internet than those living in rich countries, while poorer people within poor countries are even further excluded. For example, Rwanda has a population over 6.5 million. In 1998, it had 11,000 telephones—about half the number of telephones as Gibraltar, with a population of 27,000. Within Rwanda, these telephones were almost exclusively concentrated in Kigali. There were 4 telephones per 100 people in the capital city, compared to 4 per 10,000 in the rest of the country.

Statistics for the Internet usage further illustrate this point. For example, in 1998, Bangladesh had a population of 125 million, with just over 1,000 Internet users. The availability of local content on the Internet is a further pointer to the dominance of industrial countries: a recent host survey shows that Africa generates only 0.4 percent of global content. Excluding South Africa, the rest of the continent generates a mere 0.02 percent.¹

Usage of the Internet in particular is dominated by a tiny educational elite. Ninety-eight percent of Ethiopian Internet users had a university degree—in a country where 65 percent of the adult population is illiterate. Finally, women have less access to ICTs than men. Only 38 percent of the population polled in urban Latin America who use a computer and the Internet are women. The numbers are even more skewed in Africa: a survey of African users found that 86, 83, and 64 percent of Internet users in Ethiopia, Senegal, and Zambia, respectively, were male.

There are ways to rapidly increase access through aggregating the poor’s demand for services, however. There are also ways of providing intermediate access to the Internet using more widely available

Figure 24.2. Potential Interlinkages between ICTs and Broad-Based Development

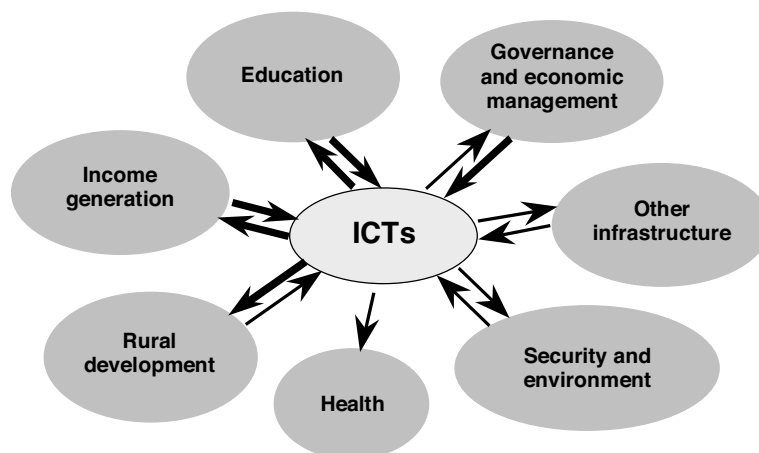
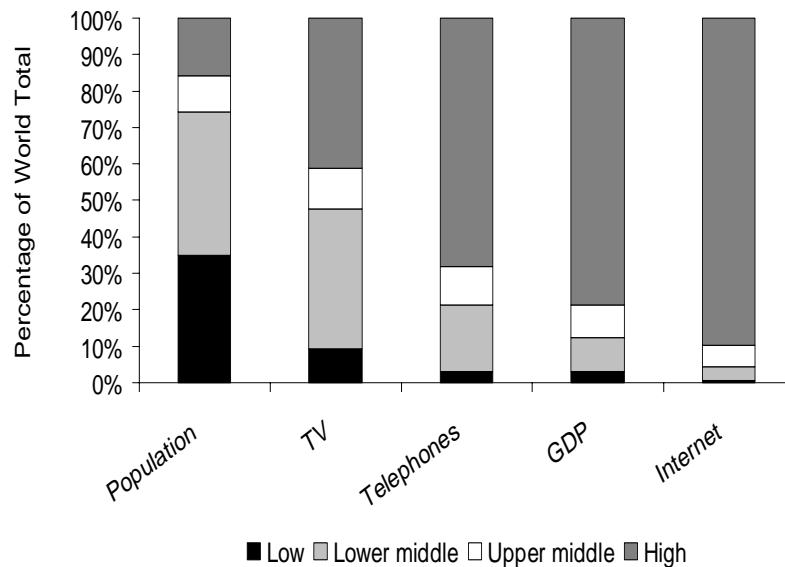


Figure 24.3. The Global Distribution of ICTs by Income Group

ICTs such as the radio. Section 24.3 discusses barriers to ICT rollout across countries, while section 24.4 addresses methods for increased access, including sector reform, pro-poor regulatory policies, and universal access funds. Section 24.4 also discusses methods of maximizing the poverty reduction impact of government investment in ICTs.

Finally, this chapter will not explore the use of stand-alone computers in any detail, despite the fact that they have a long record of providing tools for communication, education, and public financial management in low-income countries. Nonetheless, it is important to recognize that any approach to ICT use in poverty reduction has to be broad-based in the tools used as well as in interlinkages.

24.2 ICTs and Broad-Based Development

Between 1995 and 1998, telecommunications markets worldwide connected 200 million telephone lines, 263 million mobile subscribers, and 10 million leased lines. And while only 15 million Internet connections were made in 1991–94, this number exploded to 88 million in 1995–98, nearly a sixfold increase in network growth. It took the telephone close to 75 years to reach 50 million users; it has taken the World Wide Web only 4 years to reach the same number (Pyramid Research 1999).

The technological and economic change underlying this transformation of the global communications network offers great opportunities for developing economies and for poverty reduction. Perhaps as important, especially in the poorest regions, there remain significant development opportunities resulting from better exploitation of older ICTs, including postal networks and the radio.

Indirectly, ICTs have an ever-increasing role in promoting sustainable economic growth through the promotion of exports, especially in services, through improving the functioning of markets and increasing the quality and efficiency of government services. But ICTs can also have an immense direct impact on the lives of the poorest. Provision of ICTs allows the poor to access markets, to demand services, to receive education, and to learn new skills. ICTs give a voice to the disadvantaged—a voice that enables the poor to use their own knowledge and strengths to escape poverty traps. In Colombia, for example, a relatively inexpensive and simple microwave–radio telephone system, along with community access points, was installed in the remote region of Tumaco in 1994. Within three years, residents of the region reported that the service had resulted in better trade and market opportunities, reduced unemployment, new business opportunities, improved health care delivery and information access, improvements in public safety and security, and an overall improvement in the level and quality of available government services (ITU 1998).

By the same token, national or local exclusion from ICT provision results in increasing isolation. As the global economy and government services are increasingly networked, those who lack access will be marginalized. There is already evidence of this phenomenon with the telephone—the expansion of the Internet will only make the cost of ICT exclusion greater. This risk is perhaps particularly significant for the disabled poor in developing countries. This section explores the indirect and direct impact of ICT provision on poverty reduction in developing countries.

24.2.1 Opportunities for the poor

Economic opportunities. We have 40 years of evidence on the utility of broadcast media as a tool for development. For example, a survey of some of the 21,000 farmers enrolled in radio-backed farm forums in Zambia found that 90 percent considered programs relevant, and more than 50 percent credited the programs and forums with increasing their crop yields (Dodds 1999). In the Philippines, a partnership program between UNESCO, the Danish International Development Agency, and the Philippine government is providing local radio equipment and training to a number of remote villages. The project is designed to ensure that programming initiative and content originate within the communities. According to UNESCO, the project has not only increased local business and agricultural productivity, but also resulted in the formation of civic organizations and more constructive dialogue with local officials (*UNESCO Courier*, March 1997).

Turning to telecommunications, recent econometric studies have found increasing evidence of a causal link between telecommunications development and economic development; other studies provide evidence of high returns on investment in telecommunications equipment and, more generally, in the telecommunications sector. Still other studies have extended these correlations to other indicators, such as social development, cost savings for industry, and increased transport efficiency.²

The Internet, because it leverages the potential value of computers and telephone connections, suggests that the economic effects of networking will be far greater in the future. At the microeconomic level, the Internet provides opportunities for firms, farms, and entrepreneurs to reduce costs, increase market coverage, and achieve economies of scale. Thus the Internet might have a dramatic impact on trade and investment in developing countries, spurring growth—provided complementary measures covering macroeconomic, financial, and educational policies are in place (see box 24.1).

These technologies will also have a range of direct impacts, especially on entrepreneurial activities, employment, and access to credit, and especially in rural areas. For example, small manufacturers of traditional handicrafts are already discovering how ICTs can assist in the marketing and distribution of their wares to a worldwide client base. In Kenya, the Naushad Trading Company (<http://www.ntclimited.com>), which sells local wood carvings, pottery, and baskets, has seen revenue growth from US\$10,000 to over US\$2 million in the two years since it went online (*Africa Business*, April 1999). Consumers and shopkeepers can access constantly updated color pictures of the firm's product line, place orders, and make inquiries about other types of handicrafts.

New entrepreneurial activities will also generate job opportunities. Creating telephone centers, for example, is a significant means for creating jobs. For instance, a study in the Indian state of Punjab found that more than 10,000 staffed telecenters had sprung up by 1996, generating close to US\$9,000 in gross revenue per center, much of which went to salaries. Telecommunications can also offer rural populations increased opportunities for nonfarm business and job creation. An International Telecommunication Union (ITU) study of factories in rural Bangladesh, for example, found that introducing a telephone line reduced the amount of management travel, thus cutting associated travel costs, such as gasoline and salaries, by a factor 13 times the cost of installing the line (ITU 1999). Finally, increased export opportunities in the data entry sector also offer significant possibilities for employment in developing countries. There are some 10 million people performing data entry tasks in North America; many of these tasks could be competitively provided by literate workers in low-income countries (Schware and Hume 1996).

Within countries, new ICTs also offer an opportunity to provide investment resources to groups previously denied them—assuming that the fundamentals of a sound financial system are in place. In South Africa, for example, AutoBank E has developed a fully automated savings system aimed at the

Box 24.1. The Impact of ICTs on Trade and Investment

ICTs offer the opportunity to greatly reduce trade costs through their impact on costs and delays in transport services. For example, Singapore has dramatically reduced the costs of import and export through the networked information system Tradenet, with estimated savings of about 1 percent of the city-state's GDP (World Bank 1998).

And opportunities go far beyond increased exports of traditional merchandise. The free fall in the costs of information transfer has opened a large segment of the service sector to global competition. Indeed, many information-processing jobs are already carried out in countries far from the ultimate end user. India's software export industry is perhaps the best-known case of a low-income country leveraging the opportunities presented by the new networked economy. Analysts predicted that Indian software exports would reach US\$6 billion in 2000 and total IT exports could equal US\$50 billion by 2008, constituting up to 33 percent of the total export market. (*Business Week*, 3/6/00, p. 83). The new possibilities of expanding "weightless trade" present a particular opportunity to less-developed economies and regions—if there are the educational, financial, and institutional resources in place to leverage them.

The networking revolution also presents significant opportunities for increasing investment. The privatization of infrastructure services, in particular, has had a strong effect on the decisionmaking processes of foreign investors. For each dollar a country raises through the privatization of infrastructure, an additional \$2.42 is attracted in FDI (Sader 1995, p. 31). Finally, the process of privatizing state-owned telecom companies has also increased FDI into the sector itself. In Morocco, for example, a consortium of firms from Spain and Portugal recently acquired a US\$1.1 billion license to build a new cellular network (*Wall Street Journal* 3/1/00, p. A18).

poorest depositors. Customers can open an account with a deposit equivalent to only US\$8 and benefit from a wide range of electronic banking services. Since all transactions are completed through automated teller machines, paperwork and transaction costs are kept to a minimum. Also, the bank has used the data collected on depositors to analyze creditworthiness, resulting in much better credit access for the country's poorest citizens. The system is highly popular, totaling 2.6 million depositors, with 50,000 more being added each month (*Economist*, March 2000, p. 81). Such mechanisms can be combined with postal financial services to significantly expand access to financial intermediaries country-wide.

It should be noted that expanding ICT access around the world does pose an economic threat to some existing groups and companies in developing countries. Information and communications technologies reduce barriers to the flow of information and goods across borders. In this way, they have similar effects to reducing trade barriers between nations. Reduced barriers to trade—whether induced by new technologies or by shifts in policy—can negatively affect some regions or groups within a country (see chapter 13).

By improving purchasers' access to price information, for example, ICTs can reduce the prices that suppliers can charge for their goods. ICTs can also reduce the competitive advantage of location, allowing a foreign company to underprice a local competitor. While importers and internationally competitive companies in home markets will benefit from these changes, exporters and weaker domestic companies may well suffer.

The solution here is not to close off access to ICTs. The losses caused by such a maneuver would outweigh the gains. However, the networking revolution certainly increases the importance of social protection and training programs to ensure that displaced workers find new employment in more competitive sectors as fast and as painlessly as possible.

Security. ICTs have a major role in reducing vulnerability, especially to natural disasters (see box 24.2), and to powerlessness. One of the reasons for this is the part that ICTs can play in amplifying the voices of the poor. ICTs bridge the distance between remote communities and service providers: markets, government departments, and aid agencies. They can allow the opinions of the poor and the needs of the poor to be heard. For example, in India, the women's rights organization Sakashi had faced difficulties in lobbying for legislation against sexual harassment. With help from international women's networks provided over the Internet, Sakashi received advice and technical assistance on legal issues surrounding sexual harassment. As a result, the group succeeded in persuading the Supreme Court to establish sexual harassment guidelines in workplaces and brought the issue within the purview of human rights violations.

24.2.2 Governance

There are four main types of formal information areas for which ICTs are relevant to governance (Heeks 1998):

Box 24.2. ICTs and Security

ICTs can have a major role in reducing the impact of natural disasters on the poor in low-income countries. Between June and December 1996, a total of 1,689 people died in Andhra Pradesh, India, in heavy rains, floods, and cyclones. The total economic loss caused by these disasters in the province is estimated at US\$2 billion. The following year, a World Bank-backed project was implemented, designed to help set up a hazard management program in high-risk areas and improve warning capacity. Both elements involved a significant ICT component—especially in cyclone warning, communication and response, awareness raising, and education and community involvement in hazard reduction activities.

Source: Internal World Bank memorandum.

- information to support internal management, including staffing and budgeting accounts;
- information to support policy and regulatory decisionmaking, including population, economic, financial, and other data;
- information made publicly available, including laws, statistics, health information; and
- information to support public services such as education, health, and transport.

Public financial management (PFM) is one of government's most important responsibilities, with functions that cover all four of these areas. For many years, an important part of PFM programs has been developing and implementing un-networked computerized information systems to support associated business processes (see box 24.3 and chapter 6).

In several developing cities and regions, networked computers are also being used to improve governance systems that have a particularly significant effect on the lives of the poor—for example, through speeding delivery and reducing corruption in the issuing of permits or improving the operation of welfare systems. In Andhra Pradesh, India, for example, networked computers have been used in the reform of processes to register deeds and stamp duties. Using traditional methods, this took 13 cumbersome steps in a highly opaque process that invited bureaucratic delay and corruption. It took from 3 to as many as 15 days, and the process involved the registration of over 120 million documents a year. Using a new networked system, the same task can be accomplished far more rapidly, with far less opportunity for graft. Again in Andhra Pradesh, a program to computerize the issuance of caste certificates, essential for obtaining government services and access to educational scholarships, managed to decrease the time for certificate issuance from 20 or 30 days to only 10 minutes (Grace and others 2000).

However, there are also risks. Not least is the complexity of introducing both stand-alone and networked ICTs into local government systems. RPWeb, an initiative to provide Internet connection to the more than 8,000 government offices in the Philippines, shows some of this complexity in action. It has faced problems such as lack of funding and lack of interest from involved parties. Although the RPWeb initiative had been a mandated priority since 1997, most government agencies apparently do not see the advantages of being electronically linked to other agencies. Plans were scaled back to linking one-third of offices by 2000.³

And the record of ICT introduction in government is patchy worldwide. More than 80 percent of information system projects in South Africa are not delivered on time, or within budget, or are not fully implemented (Khan and Swanborough 1999), and there are many stories of failed ICT projects in India, failures due to factors including misuse, user opposition, and inappropriate design (Heeks 1999). For example, a program established by the Indian National Informatics Center to provide ICT rollout and support to local governments for the storage of land records and monitoring of Ministry of Agriculture programs found that, after 15 years, the program had only marginal impacts because the task of changing administrative cultures made necessary by the introduction of new technology had never been properly tackled. The lessons of experience suggest, then, that ICTs have to be introduced within the context of a broader reform program. They cannot act as a substitute for that reform.⁴

There are a range of potential obstacles to carrying out reform by means of ICTs. One mentioned above is bureaucratic resistance, which is often caused by lack of incentives to cooperate or ignorance of potential gains. Another common problem is poor design—frequently, technically sound systems are completely unusable in the real world. A third is a lack of resources, including technically skilled

Box 24.3. Computers to Improve Governance

In Morocco, the government is using information and communications technology to enhance intermediary coordination, tax administration, auditing, public investment planning and monitoring, and spending management. These tools have cut in half the time required to prepare the budget (World Bank 1998). Other countries, such as China, Lebanon, and the Philippines, have successfully launched projects, with the support of the World Bank, to reform their tax or computerized customs systems (Forestier 1998).

ICTs can improve the efficiency of government through public finance processes by reducing opportunities for graft. The Automated Systems for Customs Data (Asycuda), developed by the United Nations Conference on Trade and Development, is now used by over 70 developing countries to manage tariff collection and reduce frontier corruption. The system speeds up the movement of goods, reduces transport expenses, and costs only US\$2 million to install.

ICTs can also increase the efficiency and equity of taxation. In Mirzapur, India, the local government computerized property assessment and tax records as well as tax billing and collection. The results have been impressive: a 44 percent increase in properties registered, a systematic and more equitable property tax analysis system, the issuing of property tax bills for the first time in 17 years, and a 42 percent increase in total tax revenues (Gibbons 1999).

operators and appropriate hardware. As a result of these problems, applications fail to meet the needs of agencies and resources are wasted.

Perhaps most serious, ICT-based reforms backfire if some of those who need services are excluded by the technology. For example, Singapore and New York City have begun providing government services directly to customers online. If this type of service provision became a substitute rather than a complement to more traditional methods of receiving government support, those without access to the Internet would be excluded. Again, reforms of this type require more than physical access to ICTs. The introduction of an intranet system providing information on property to staff and clients of the Johannesburg Metropolitan Council remained unused because its introduction had been technology focused, rather than needs focused, and training was inadequate (Africa Internet Forum 1999). This suggests that training and acceptance are as vital as access.

Furthermore, the potential audience and the usability of Internet-based information is low if the information is packaged in complicated graphic formats requiring powerful computers and fast connections. Web design for public access should (but frequently does not) involve specific requirements for technology and contents to enable access with old browser versions, less efficient CPUs, slow connections, as well as the use of different aids for the disabled including screen readers, voice output, and Braille displays.⁵

The issue of complementarities between government departments and services adds greater complexity to the introduction of the Internet. Normally, a wide variety of computer-based systems support different government activities. However, these systems are usually implemented as components of separate projects responding to specific needs, with little appreciation of requirements in other areas, and with little thought given to critical interrelationships. As a result, the information systems are often disparate and segmented, with little or no capacity for sharing data. They have overlapping and sometimes conflicting functionality and provide incomplete coverage, particularly for managerial information requirements that normally span several functional areas.

Finally, networking government is very expensive. A recent World Bank-supported project in the Indian state of Andhra Pradesh, designed to computerize revenue offices, involves training 5,000 staff members and installing 4,500 computers in 1,124 sites over an area of 250,000 square miles to handle a database containing over 80 million records. Multiplying this up to the national level in a country as large as India and across a wider range of functions, the scale of the process becomes clear. All of this suggests that although a range of high-return investments is possible in low-income countries to improve government performance through advanced ICTs, programs to use them should be carefully evaluated (see section 25.4.3).

24.2.3 Education

At the primary and secondary levels of education, radio and television are an increasingly important means of reaching the rural poor. In Mexico, over 700,000 secondary school students in remote villages now have access to the *Telesecundaria* program, which provides televised classes and a comprehensive curriculum through closed-circuit television, satellite transmissions, and teleconferencing between

students and teachers. Studies have found that the program is only 16 percent more expensive per pupil served than normal urban secondary schools, while students benefit from much smaller student-to-teacher ratios. Rural students enter the program with substantially lower mathematics and language test scores than their counterparts at traditional urban schools, but by graduation, they have equaled the urban students' math scores and cut the language score deficit in half. (de Moura and others 1999).

Educational radio has been utilized in:

- ⊃ Mexico and Mali, for literacy training;
- ⊃ Thailand, to teach mathematics to schoolchildren, and for teacher training and other curricula; and
- ⊃ The Dominion Republic and Paraguay, in support of primary education.

Programs can be broadcast in a range of local languages, and they can be part of a multimedia campaign, designed with classroom activities linked to the topics raised (Nwaerandu and Thompson 1987). Adkins' (1999) survey of seven educational intervention-cost-effectiveness studies suggests that, in terms of incremental improvement, the impact of a dollar spent on interactive radio instruction is nearly 70 percent greater than a dollar spent on purchasing textbooks, and over 11 times greater than a dollar spent on teacher training.⁶ In part because of its cost-effectiveness, radio is by far the most widely used electronic media in developing world distance learning programs.⁷

Studies from industrial countries also find that the Internet can be a valuable pedagogical tool (CAST 1997, p. 4). E-mail allows students with similar interests and ideas to share knowledge and collaborate with other students around the globe. Online databases maintained by governments, private companies, and universities contain enormous amounts of readily accessible information. This also allows ICTs to play an important role in cultural preservation (see box 24.4). Network technologies have the potential to transform the nature and reach of education.

This impact of the Internet is not limited to higher education or wealthy students, however. In Brazil's urban slums, the Committee to Democratize Information Technology (CDI) has created 110 sustainable, self-managed community-based "Computer Science and Citizenship Schools" using recycled technology, volunteer assistance, and limited funds. CDI schools train more than 25,000 young students per year in ICT skills that give them better opportunities for jobs, education, and life changes. CDI also provides social education on human rights, nonviolence, environmental issues, health, and sexuality. CDI cites many cases in which participants have developed renewed interest in formal schooling, resisted the lure to join drug gangs, and greatly increased their self-esteem. Also, many of the program's graduates are putting their computer skills to work in various community activities, including health education and AIDS awareness campaigns. Most teachers in CDI's schools are themselves graduates of the program who have embraced technology and want to continue CDI's good work in their own communities.⁸

Advanced ICT-enabled education has a particularly important role in empowering poor people with disabilities. Disabled people have, on average, lower enrollment and educational attainment levels than the rest of the population. Even standard ICTs can make it possible for disabled people to take advantage of mainstream educational opportunities, provided that they are designed to be more accessible to people with functional limitations. Furthermore, assistive devices can revolutionize the learning opportunities for people with visual, hearing, or dexterity impairments.

Further, the judicious use of advanced ICTs, complementing the role of broadcast technologies, can help alleviate shortages in teachers and physical materials and can be cost-effective when compared to

Box 24.4. ICTs and Cultural Preservation

Advanced ICTs can play an important role in preserving and providing access to cultural resources. The Egyptian Ministry of Tourism, for example, hosts the Egyptian Antiquities Information site (<http://www.touregypt.net/antiquities.htm>). Visitors can access pictures of archaeological artifacts, read articles on Egyptian history and mythology, and access information ranging from how the pyramids were constructed to the complete contents of the "Book of the Dead" in several languages. ICTs have also played an important role in preserving and identifying threatened or marginalized cultural artifacts and traditions. Visitors to <http://maori.culture.co.nz> can read histories of the Maori people, view images of cultural artifacts and the unique tattoo patterns common among Maori men, obtain Maori recipes, and order cultural products from an online shop.

building new physical infrastructures. In Taiwan, for example, one study found that the distance-based National Open University was able to reach 30 percent more students than the National Taiwan University while spending less than a third of the National Taiwan University's budget (UNESCO 1999). The African Virtual University (<http://www.avu.org>) hopes to emulate or surpass such efficiencies while providing more equitable access to tertiary education on the continent. To date, courses have been offered on computer technology, economics, language, and remedial coursework (Diagne 2000).

Finally, providing skills to develop a technologically competent work force will facilitate a country's ability to compete in the global economy. In the presence of a basic education system that provides the vital tools of literacy and numeracy, access to ICTs at an early age can ensure that populations—and especially the poorest—are able to adapt to new technologies and remain competitive (Blurton 1999).

As is true in the use of other government services, ICT use presents several potential problems in education. First, neither the radio nor the Internet can substitute for good teachers, nor can the Internet in particular operate in an environment where school buildings are unsafe or inadequate, or there is no electricity, or there is inadequate technical support to ensure sustainability. As one observer notes, "Care should be taken to avoid allowing the novelty of technology to drive decisions regarding the most appropriate delivery mode...If a country's conventional education or teacher training program is not effective, using a new technology to deliver that education or training will not make it any more effective." (Potashnik and Capper 1998, p. 45) Second, unlike radio instruction, the Internet is a comparatively expensive tool. To get an idea of the cost, the government of Singapore is spending US\$1.2 billion over five years to bring computers and broadband access into all schools.⁹ Singapore has a population of about three million. If spending per capita on connecting schools in China were the same, the cost would be about US\$491 billion—or a little over 50 percent of the country's GDP. To justify equipping schools with computers, it is important to ensure that the benefits outweigh those of spending the same money on textbooks, more teachers, building repair, or more basic ICT-based education such as interactive radio instruction.

While there are cases from wealthier developing countries where ICTs are in fact the most cost-efficient delivery tool for certain educational programs, it is likely that these cases will be rarer in poorer low-income countries. Section 24.4 discusses methods to ensure the maximum return to needed ICT investments in education.

24.2.4 Health

Information technology also has a role in improving the quality of health services. Radio has been used in:

- Nicaragua and Swaziland, for general public health education;
- South Korea and Sri Lanka, to support family planning initiatives;
- Trinidad and Tobago, to promote knowledge about breastfeeding; and
- The Philippines, for nutrition education (Nwaerendu and Thompson 1987).¹⁰

A significant percentage of health workers in Uganda (54 percent) and Kenya (20 percent/year) have taken part in radio-backed training courses, and reports and surveys consistently suggest that these result in improved knowledge, attitudes, and practices (Dodds 1999).

Networked computers have played a vital role in controlling *Onchocerciasis*, or river blindness, in West Africa. Data collected by sensors along 50,000 km of rivers were fed into computers by local inhabitants. From the computers the information was beamed to a network of entomologists by satellite radio, and used to calculate the optimum time to spray against disease-carrying blackfly. River blindness has now been eliminated in seven countries, protecting 30 million rural people from the disease and opening up 25 million hectares of land to settlement and cultivation (World Bank 1998). Networked computers have a range of other roles in the health sector, including administration and management, storage and transmission of data and publications, and dissemination of medical findings.

Again, and as with education, a serious problem thwarting continued growth in the use of the Internet in health is cost. These costs include telecommunication infrastructure rollout, computers and digital

imaging equipment, salaries for training of practitioners and laboratory staff, and the development of related support infrastructure. Governments and donors must weigh the varying needs of national systems in relation to available resources. Many health problems can be addressed through basic infrastructure improvements such as clean water and sanitation facilities rather than expensive technical solutions. As one study notes, “although information and education can raise people's awareness of the problems...information in itself is an insufficient remedy if people lack the means to implement what they learn” (Uimonen 1997). Further, and again as with education, low-cost ICTs such as radio frequently provide a suitable alternative to advanced ICTs.

24.2.5 Environment

Environmental monitoring is data-intensive. Identifying and monitoring the enormously complex web of inputs and relationships within an ecosystem requires the capacity to track large volumes of data and build databases that can analyze and sort information. Geographic Information Systems, which use computer applications to store, integrate, and analyze data collected from remote imaging and other sources, are increasingly powerful tools in designing sustainable management plans and forecasting environmental threats.¹¹

But environmental management requires more than the analysis of environmental threats. Communication among governments, business, and citizens is vital if environmental remediation programs are to meet their objectives in an efficient and equitable way. ICTs can benefit this process by encouraging communication and knowledge sharing between the public and private sectors and between concerned citizens and scientific experts. Used in this way, ICTs can help to include people in the decisionmaking process, ensure that traditional forms of environmental knowledge are communicated to a broader audience, and allow citizen monitoring and enforcement of environmental threats.

In Indonesia, for example, government officials discouraged by the weak enforcement of water pollution standards developed a public access information database rating the degree of firm compliance with pollution discharges. Even before the information was made public, firms hurried to improve their ratings. Regulators, meanwhile, could focus their limited enforcement resources on the worst offenders. In the first 15 months of the program, roughly a third of the unsatisfactory performers came into compliance with the regulations (World Bank 1998, p.13).

24.2.6 The Threat of Exclusion

The mere existence of a gap in levels of ICT services between rich and poor across and within countries does not imply that ICTs are a priority; after all, poor countries also have fewer factories, fewer cars, fewer doctors and nurses, and lower calorie intakes per capita than wealthy countries. That said, the previous discussion suggests a number of reasons why a *growing* gap in the provision of advanced ICTs *should* be of concern:

- *The gap in provision is already large*, and for advanced ICTs it is much larger than income disparities. This represents a majority of people around the world—and especially the poor—having no access to modern networking technologies. And the gap is growing at a time when the trends in other determinants of development, such as levels of education, health, and access to transport, are converging.¹²
- *Threshold effects are at work*. Two linked economic features suggest that low provision could force people and countries into poverty traps—network externalities, where there are increasing benefits to a connection the more that others are connected, and bottlenecks caused by limited use of networked technologies impairing the broader economic competitiveness of a country or region. In the same way that a weak port infrastructure reduces the attractiveness of all merchandise trade with a country, it might be that a weak information infrastructure will reduce the competitiveness of an even wider range of goods and services. Weak information infrastructure might then act as a bottleneck to trade-led development. Evidence is growing that a range of ICTs is vital for taking part in trading, and the lack of such technology really does act as a bottleneck. For ex-

ample, surveys in Botswana and Zimbabwe suggest that areas lacking telephone access see significantly less entrepreneurial activity than those with access.

- *Within-country gaps in service provision worsen existing inequities.* If the opportunities for improved income generation and access to services provided by the new ICTs are limited to the wealthy, this will perpetuate and strengthen a number of disparities, including gender inequality (see box 24.5) and the inequalities faced by the disabled.

The risks of economic exclusion presented by a lack of ICTs suggest that countries *should* be concerned with the level of ICT provision—and with enabling access for the poor. The challenge is to maximize the returns to spending and investment in the sector by ensuring access to appropriate ICTs. For most low-income countries, this will mean moving toward a well-regulated competitive environment for ICT services. It will mean a focus not only on telephony and the Internet, but on broadcast and postal services as well. It will mean a program of universal access provision (a public phone within walking distance) rather than universal service (a phone in every household). It will mean government use of ICTs in priority “back office” functions, such as tax records, rather than attempts to put the entire gamut of government services online. It will mean selective use of the Internet in schools and hospitals, along with training and a focus on technical literacy. The rest of this chapter discusses methods and guidelines such as these to maximize the benefit to the poor of investments in ICTs.

24.3 Barriers to Access

To enhance the potential poverty impact of ICT investments, it is important to understand the current market and government failures that are limiting access to the poor and reducing the quality of service provision that they should be able to expect. Section 24.3 discusses these barriers, while section 24.4 explores remedies.

24.3.1 Supply constraints

Policy failures. The advantages of liberalization—privatization and competition—will be discussed later, in turn demonstrating the disadvantages of monopoly public provision. By and large, monopoly provision has been found to be an inefficient tool with which to increase access to and improve the quality of services around the world. Investment by public companies has been too low to expand access rapidly, and management and organizational structures have been inefficient, reducing both rollout and quality of services.

Appropriate regulation after the introduction of private competition is also critical. A lack of an independent regulator can have particularly damaging effects on the poor. In the northwest region of Ghana, for example, one study found that political criteria had dictated the placement of lines and pay phones, resulting in lower telephone use and revenues than had been initially predicted (Richardson 1998). This also emphasizes the importance of local participation in designing and managing rural telephone systems. A vibrant broadcasting sector also requires private and community access to the radio spectrum and regulatory institutions to ensure that signals can be received.

Box 24.5. Gender and ICTs

A range of ICTs has been used to support the empowerment of women around the world. In Africa, groups such as the African Women’s Network of the Association for Progressive Communications (APC) have conducted training workshops to support electronic networking among women’s groups. In Uganda, the Forum for Women in Democracy uses the Internet and e-mail to research issues for the country’s female MPs, and Women’s Net is a similar initiative in South Africa.

At the same time, as mentioned earlier, the great majority of users in low-income countries, especially users of advanced ICTs, are men. Even with radios, men tend to control access—requently by taking possession of radio batteries. This raises the fear that ICTs could be one more element in the exclusion of women from opportunities. This in turn suggests the need for programs that specifically target women. Wind-up radios increase women’s access to radio programming. Grameen Phone targets women’s access to telephony, and perhaps a similar model could be used for the Internet. Access points should also be made available near places where women work. The fact that women make up the majority of farm labor in poorer countries suggests that rural access is particularly important. Education programs should also ensure at least a gender balance in their classes.

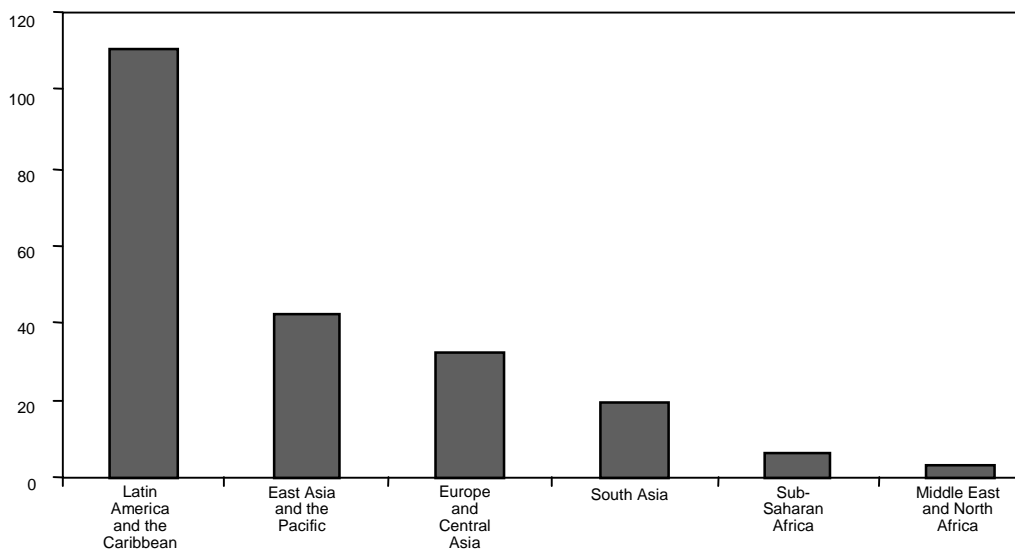
Population density and geography. While policy failures undoubtedly constrain supply, there are a number of other constraints to public access as well. Geography is still a key determinant of communications costs and functionality. A user in an area of low demand density because of sparse population will still tend to have proportionately higher communications costs and lower available functionality. This phenomenon is firmly rooted in the economics of networks. For example, telephones in rural areas, which require smaller exchanges, cost significantly more per line, not only because each connection is farther from the next, but also because economies of scale in switching cannot be achieved.

Lack of private financing. The distribution of foreign direct investment in ICTs is skewed, and flows to the rural areas of poorer economies are very limited. For example, 81 percent of telecommunications investments in projects with private participation went to just ten developing countries in 1998; 52 percent of the investments were in Latin America, while less than 3 percent were in Sub-Saharan Africa during 1990–98 (see figure 24.4). These figures in part reflect the relative economic weight and degree of liberalization of different markets, but they also reflect broader market and government failures in developing countries and the fact that few international ICT companies know about the opportunities present in low-income economies.

Less developed countries also have the problem of finding the financing to support “lumpy” investments, such as satellites. Indeed, for two decades the only satellite services in the developing world were supplied by treaty organizations such as Intelsat. Such information and credit constraints also apply at the local level—the poor have limited access to credit, and the institutions are not always in place to assist in the aggregation of demand for lumpy investments such as a computer or the first telephone line into a village.

Poverty traps, including the undersupply of pro-poor local content. The development of the Internet has been associated with a range of network and scale economies of its own. For example, a larger online community makes the development of Internet content a more attractive commercial and social proposition, while the development of more attractive Internet content encourages the growth of a larger Internet community. But while scale economies suggest the opportunity for substantial growth, they also suggest the risk of poverty traps. A consistent finding of surveys of Internet users and providers in developing countries is that the lack of local language and locally relevant content is a major barrier to increased use. Unless there is a concerted effort to overcome these constraints, Internet growth in many developing countries could be stuck in a low-use equilibrium.

Figure 24.4. Telecommunications Projects with Private Participation in Developing Countries (1998, US\$ billions)



Source: PPI Database, the World Bank

24.3.2 Demand constraints

Poverty and aggregation problems. Income alone explains 78 percent of the variation in the number of telephone lines and a similar percentage in the variation of access to the Internet per capita across countries (see figure 3.3.). Income remains by far the best predictor of the comparative level of ICT rollout across and within countries. Even with further reform and technological advance, this suggests that the cost of services means that most of the people in developing countries could not afford a telephone in their home, let alone an Internet connection.

The solution to this problem is not complex. It is to provide public access that allows multiple individuals to share the fixed cost of ICT provision. Basic sector reform alone, however, is not enough to ensure access to public call centers, let alone the Internet. Figure 24.6 suggests that competitive market environments alone do not necessarily support a much higher level of demand aggregation than unreformed sectors. In some reformed markets, such as in the Dominican Republic, there are fewer public pay phones than would be expected based on the income level. This is not to say that basic reform is not supportive of universal access goals, but that basic reform must be complemented by regulatory and other policy initiatives if those goals are to be achieved.

Education and training. A second demand constraint that limits access to the Internet in particular is the level of digital literacy. Most advanced ICT users in developing countries come from an educated elite. This is not surprising. Illiterate adults face significant—often insurmountable—barriers to computer and Internet use. E-commerce in particular is computer- and network-intensive, requiring skilled programmers and applications development personnel. Furthermore, as most Internet content and programming languages are English-based, absent intensive language training the utility of the Internet is reduced.

Government use. Finally, while there are many areas of government activities that could benefit from greater use of ICTs, lack of knowledge about opportunities, lack of credit, and a range of institutional barriers can stand in the way of efficient use. Again, incorporating ICTs into government operations is a difficult task.

24.4 Strategies to Enhance the Impact of ICTs in Reducing Poverty

The previous section outlined barriers to ICT rollout to benefit the poor. This section offers potential responses. Overcoming demand constraints, as already mentioned, is partly a function of income, training and education, but it will also take a regulatory environment that encourages demand aggregation. Supply constraints can be overcome in part through policy reform to open up the sector, regulation

Figure 24.5. Telephones per 100 People against GDP per Capita

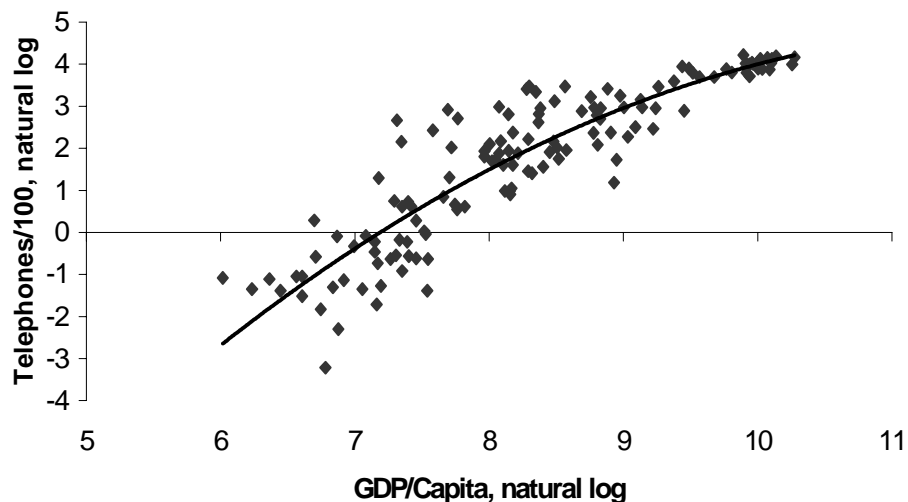
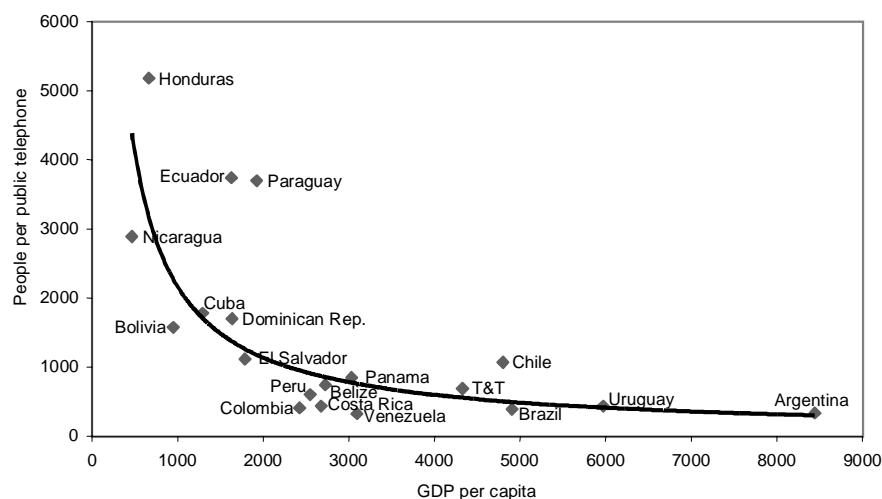


Figure 24.6. People per Public Phone against GDP per Capita

that encourages rollout, and support for universal access goals. But to know which ICTs are demanded, it is vital to start the process of pro-poor ICT reform with a significant effort to listen to the needs of the poor themselves.

24.4.1 Overcoming supply constraints to service provision

The first step to begin fulfilling the communications needs of the poor is to leverage the full potential of market mechanisms in reaching out to poor communities, by allowing the establishment of a competitive, private sector-led market. A range of studies suggests that there can be dramatic increases in access to telephone and Internet services through a telecommunications-sector reform program based on three pillars: privatization, competition, and independent regulation.

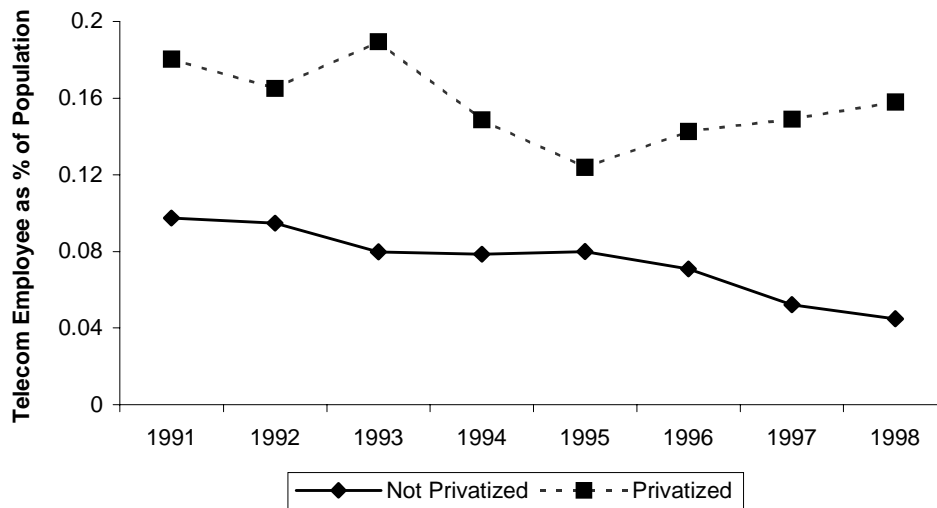
Privatization in the telecommunications sector improves teledensity and revenue generation. Countries with private provision also see a higher level of employment in the sector, despite a widespread belief that privatization may trigger significant unemployment. For the 100 countries analyzed to create Figure 24.7, the main findings were as follows:

- Countries with privatized incumbents have a higher share of employment in the telecom sector than those not yet privatized.
- Compared with levels at the beginning of the 1990s, the share of employment in telecom sectors with and without privatization was lower in 1998. However, since 1996, the trend has been upward in privatized markets, while it has continued to fall where the incumbent is not privatized.

Similarly, in the postal sector, the benefits of greater private involvement can be impressive. In Trinidad and Tobago, the postal system has undergone an ambitious modernization process, transforming itself from a government department into a new postal corporation. A management contract granted to a private operator selected by an internationally competitive process, has had a major positive impact on quality of service: mail delivery at or near private homes has reached 62 percent of households within one year, with plans for 96 percent coverage by 2004.

Major beneficiaries of the postal modernization process are rural and low-income communities that used to have hardly any access to communication and delivery networks. Along with letter and parcel mail, money orders can also be provided to more areas in a more dependable way. Wider coverage of the country with more reliable services has also helped those residents, often elderly, who depend on remittances from family members abroad. These services also support local small businesses that are in need of more secure and rapid means of communication, financial payment, and order fulfillment.

Figure 24.7. Telecom Employment



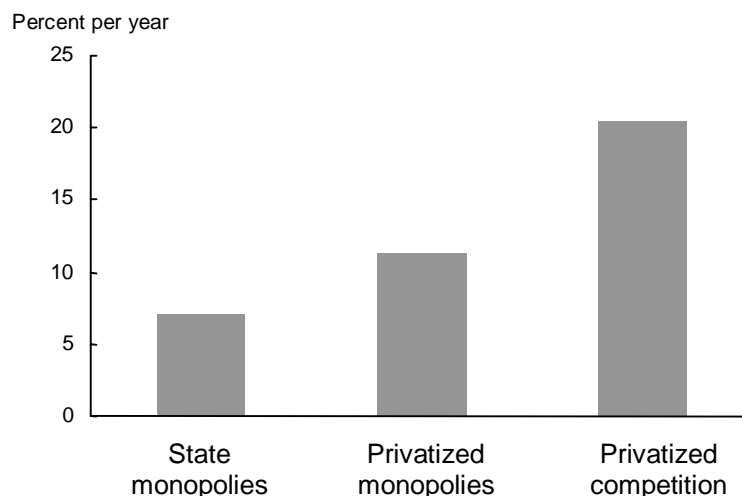
Source: Grace and others (2000).

Competition further improves performance. Figure 4.2, based on evidence from a set of Latin American countries, shows that privatized open telecommunications markets in that region saw basic line rollout approximately three times as fast as countries with a state monopoly and twice as fast than those with private monopolies.¹³ A liberalized telecommunications sector is also vital to make access to advanced information technology more affordable, because a large part of the costs of Internet access is accounted for by telecommunications. A recent study of African Internet service providers suggests that countries with a highly liberalized telecommunications network had costs of Internet access eight times lower than those with a completely closed market. Countries with more open telecommunications sectors also had more host sites, lower monthly Internet charges, a greater number of providers, and higher rates of Internet penetration (Africa Internet Forum 1999).

Opening the broadcast sector to independent operators can also have a dramatic impact on the range and quality of programming. In Columbia, for example, more than 1,000 new licenses were issued to community stations in 1995. This should be part of a broader move to issue spectrum licenses to local and national stations, which can dramatically increase listener choice and information flow. (This process is ongoing worldwide. For example, in 1999, the FCC introduced new low-power FM radio licenses (100 watts) and requested comment on introducing a microradio class at 1-10 watts.)¹⁴

Regulation. Gaining full benefit from private-sector participation and liberalization requires the regulatory environment of the communications industry to be conducive to a well-functioning competitive market. In the telecommunications sector, this can be achieved through legal and regulatory mechanisms that promote, among other things: fair interconnection and revenue-sharing arrangements between telecommunications operators; moving toward cost-oriented tariffs and the elimination of internal cross-subsidies, with the limited exception of carefully designed subsidies to ensure access and use for the poor; as well as recourse to a strong and truly independent regulatory agency, capable of enforcing rules.

But gaining full benefit in rollout, revenues, and employment from ICT liberalization requires going beyond the boundaries of the sector itself. It is important that the country be attractive to foreign investment in its rules and regulations on such issues as repatriation of profits. It is also important that education systems and labor laws enable recruitment of skilled local staff as well as the opportunity to bring in specialists where none are available locally.

Figure 24.8. Basic Line Growth in Different Regulatory Environments in Latin America

Source: Wellenius (1997a).

24.4.2 Overcoming demand constraints: Pro-poor access policies

Despite the clear advantages of well-regulated private competition over government monopoly provision, the experience of Eastern Europe suggests that liberalization does not always increase household access to telephones (see box 24.6). And the example of access to public phone boxes in Latin America suggests that basic reform alone is not sufficient to guarantee public access. To guarantee significant and equitable returns to the basic reform program, a wider policy approach is needed along two dimensions—first, pro-poor regulation and policy within the sector and, second, complementary reforms outside the sector in areas including investment policy and education.

Telecommunications sector reforms can promote economic efficiency, but governments may need to employ additional complementary mechanisms to close the “access gap” in challenging, uneconomic areas or to reach uneconomic customers. These mechanisms include adopting programs that focus on public access through use of service requirements, access funds, and low-interest loans—along with supporting pro-poor applications and content and a broader reform agenda.

Focusing on Access. Policies and institutions to promote public access to telecommunications services are a central part of what has come to be known as “universal service” or “universal access” policies. These have different meaning in different countries, as shown in box 24.7. But by focusing on providing public access, be it to a telephone line, a radio, a TV screen, or an Internet terminal, countries can aggregate demand so that a large number of people benefit from one or a few connections. This allows sustainable provision of ICT services even where incomes are low. In Senegal, for example, more than 6,000 privately operated and highly profitable telecenters have come into existence since the early 1990s.¹⁵

Box 24.6. Eastern European Telecoms Reform and the Cost of Access

Basic service provision has been traditionally subsidized in East Europe and Central Asia (ECA). For example, monthly subscription charges in Turkmenistan, in 1995, were just US\$0.50. This compares to a world average of US\$7.10 per month. Cheap connectivity has stirred large demand for lines. But the low cost of connection makes installing a telephone a severe drain on income for the region's telephone companies, one which they have become increasingly unable to afford, leading to very long waiting lists. To recoup losses made on connection, and to cover the expenses of broader inefficiencies, telecommunications companies in the region have set very high rates for calling charges, limiting usage and resulting in very low revenues per line in the region. Latvia, with the highest revenues per line in the region, manages to earn a little under US\$180 per line per year. In contrast, the world average is US\$859 per main line and the African average is US\$718 per line.

Reform in the region is causing a painful rebalancing of prices toward the actual cost of service provision. While this is necessary to increase telephone use and to make the region's companies financially viable, one result is an increase in rental charges, putting a private line out of the reach of many people. The challenge in the region is to move from an unsustainable and unreachable goal of universal service—with high call pricing and long waiting lists for service—to a model of ensuring universal access through the rollout of public telephone and Internet terminals.

Public access to a telephone has more than doubled. India, Peru, South Africa, and Thailand have also seen dramatic growth in privately owned and operated telecenters providing rural inhabitants with new information sources and opportunities (Ernberg 1998).

Public access policies do not have to limit themselves to improving access to telephones. Indeed, many countries are using similar principles to support the provision of more advanced ICTs, ranging from fax to Internet access. A model that is receiving increasing attention is the multipurpose community telecenter (MCT). An MCT is a facility that provides public access to a variety of information and communication technologies and services. These centers may vary from single rooms with a telephone or two-way radio to facilities with full Internet access and other value-added services. MCTs can also provide indirect access to technologies through an intermediary such as a telecenter worker who understands the equipment and can read and write. This can expand the possibilities of Internet access beyond an educated and skilled minority.

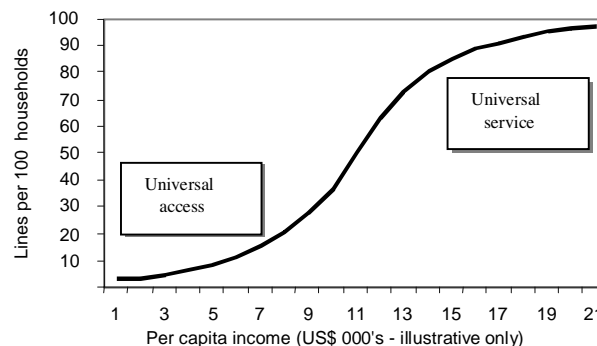
An increasing number of MCT services are commercial. South Africa, for example, has shown that for-profit public Internet access can work outside the Internet cafes present in many African capitals. Zokode Distributors, a multipurpose information center owned by a local entrepreneur in Daveyton township, Gauteng Province, serves between 16,500 and 18,000 people per month (CSIR 1998).

A reformed telecommunications sector is a key determinant of the sustainability of any mode of public access to ICTs. Indeed, the liberalization of at least the retail segment of the market and nonprohibition of reseller activity is a precondition for the emergence of entrepreneurs willing to establish payphone operations or MCTs. But it is still likely that more advanced ICT provision in rural areas will usually require some form of public support. Methods of efficient provision of such support are discussed later. Many successful models have relied on some level of external support, at least to cover initial costs, and on collaborative and participatory assessment programs before and during the creation of MCTs. In South Africa, for example, the Universal Service Agency is test-piloting a project to bring about 80 MCTs online within the next few years. The program relies on local input and management to ensure that services rendered are appropriate to community needs.

Box 24.7. Universal Service and Universal Access

Figure 24.9 offers an approximate view of typical household telephone penetration from low- to high-income countries. Similar diagrams can be produced for other services, such as Internet access. The diagram also introduces the concepts of “universal service” and “universal access.” Broadly speaking, in high-income countries, with residential telephone penetration typically above 75 percent, households without a telephone are considered to be disadvantaged. Advanced country governments and regulators, then, are concerned with policy instruments for achieving universal telephone service—meaning service to every home.

Figure 24.9. Household Telephone Penetration



In low-income countries, however, the focus should be on providing public access to services. The only realistic objective in the short term is, therefore, to achieve “universal access,” where everyone will be able to access a public booth in every town, village, or vicinity or within “reasonable” distance. What reasonable distance actually means, what services are to be provided at every public booth (telephone, e-mail, real-time Internet), and which of these services are appropriate at what level in the hierarchy of towns and villages, will vary considerably from one country to another, depending on potential demand and ability to pay for these services. The scale at present runs from access to 2 mbps high-speed Internet lines for every home in Korea to a telephone within walking distance in some African countries.

The MCT movement is still in its early stages in low-income countries, and it has faced some setbacks. One study of a pilot program of the Ministry of Environment, Natural Resources, and Fisheries in Mexico, for example, found that of 23 telecenters set up in rural areas around the country, only 5 remained functional after two years. Problems encountered included insufficient maintenance funding, inadequate political interest and will, and cultural constraints that hampered community interest in the projects (Robinson 2000). Again, this suggests the importance of participatory design and continued government support. Further, given the cost and skills demands of Internet access, it is likely that direct access by the poor in developing countries will remain limited. Through the intermediary of the radio, however, some of the benefits of Internet access can be provided to those without direct access (see box 24.8).

Use of service requirements. Service requirements are a simple method used by regulatory agencies to assure a certain minimum level or distribution of telecommunications development within a country. They are primarily written as conditions into the license of an operator. They can involve teledensity or rollout targets for public and private lines, along with conditions on the quality and speed of service. Regulations can also support access by the disabled, supporting enhanced accessibility features to allow use by the visually and hearing-impaired. Service requirements should be set bearing in mind their commercial feasibility: requirements that are unrealistically ambitious may jeopardize financial performance and thus operators' ability to meet the targets and improve access.

In license-tendering processes, build-out targets are increasingly used as an important, sometimes primary, bid evaluation criterion, alongside the bid price. This approach, if preceded by careful analysis of the target users' capacity to pay, ensures that the rollout targets are indeed feasible. For example, in both Uganda and India, bid evaluations included rollout or coverage criteria.

If license conditions are to be met, enforcement procedures to follow up on the accomplishment of committed targets and a plan of sanctions for failure are essential. To make licenses with rollout conditions more attractive, a range of options is available, including bundling, packaging areas, and free choice of technology (see table 24.1).

Rural and universal access funds. In a competitive environment, the costs of providing universal access, including rural expansion, can be financed through special funds. These funds are set up as a transitory mechanism to help defray in part the initial investment costs of network expansion in rural and poor areas.

A prime regulatory objective in setting up universal access funds is to maximize the impact of the subsidies awarded, which is why the funds should be allocated to operators in a competitive way. The introduction of competition through a bidding process for the use of funds encourages operators to look for the best technology and other cost-savings practices. This tends to minimize or eliminate the need for subsidies. The choice of a funding strategy can also support a level playing field among operators so that none of the operators is overcompensated or unfairly burdened by the funding mechanism.

Box 24.8. Rural Radio as an Internet Intermediary

Rural radio as a method of information delivery has several advantages. First, both the radio unit and programming and delivery mechanisms are among the cheapest forms of mass media. Second, radio signals can penetrate remote geographic regions, and any individual with access to a radio set can receive information, regardless of literacy or educational level. Finally, rural radio provides region-specific information, easily incorporates local concerns and feedback, and can operate in local languages. Radio programs have been used widely in education, but also to support gender training, as part of drought mitigation programs, and to promote a range of health issues and practices.

Rural radio can also benefit from the presence of the Internet. In Kothmale, Sri Lanka, a joint project among UNESCO, the Ministry of Posts, Telecommunications and the Media, the Sri Lanka Broadcasting Corporation, and the Sri Lanka Telecommunication Regulatory Commission uses radio as an interface between rural people and the Internet. A daily one-hour live radio program, in which an announcer and a panel of resource persons browse the Internet at the requests of listeners, has proven to be capable of overcoming linguistic barriers in using the Internet by non-English speakers. The radio station adds value to the information by interpreting it in a local context, by broadcasting it in vernacular languages, and by providing a platform for feedback through local discussion and networks of local correspondents. In addition to the radio program, the Kothmale Community radio station is developing a rural database (<http://www.kirana.lk>), primarily by packaging public domain information often requested by listeners for off-line use.

In such a competitive bidding process, the fund administrator determines the target areas to be served, normally based on socioeconomic studies and on consultation with the local authorities and population. New entrants and sometimes existing operators compete for subsidies for network build-out in these areas. The subsidy is then awarded to the operator with the lowest required subsidy or the highest service rollout commitment, or a combination.

In Chile, for example, just over US\$2 million in public funds leveraged US\$40 million in private investment to install telephones in 1,000 localities, at about 10 percent of the costs of direct public provision (Wellenius 1997). Very few areas received no bids and thus remained unserved, although underbidding for subsidies has caused financial problems for some operators, affecting rollout schedules and causing service delays. To avoid this problem, since 1999 the regulatory agency has started to evaluate bids based on delivery time as well as on the bid price.

Although the initial focus of these types of universal access funds was to support the provision of public telephones by telecommunications operators, some countries are using this approach to support the establishment of public Internet access points, notably through telecenters. This has been the approach followed in South Africa, where the Universal Service Agency has used the fund to franchise telecenters around the country. Peru has recently started using a similar mechanism to support the public provision of telecenters and Internet terminals in poor city neighborhoods. Table 24.2 lays out various options for financing mechanisms for universal access programs.

Low-interest loans and microcredit. Other financing mechanisms to speed rollout include low-interest operator loans to encourage operators' network build-out in less profitable regions. High-cost areas typically involve large up-front costs for the operators. Loans to help finance the initial capital investment costs can be useful, especially as domestic capital markets in developing countries tend to be weak. Loans can be provided by governments or bilateral and multilateral aid agencies.

In Bangladesh, Grameen Phone, an operator offering traditional cellular services in urban areas, gives loans to low-income women entrepreneurs in rural areas to provide payphone services based on cellular technology. Building on its experience in providing microcredit loans to the rural poor, Grameen Bank has provided more than 1,100 telephones to rural poor women through loans averaging US\$350 to cover equipment and start-up costs. The operators make a profit by reselling airtime to others in the village. Villagers report that introduction of the service has allowed rural farmers to check livestock prices and coordinate medical needs, and has challenged the traditional power that wealthy landowners and intermediaries have held over rural economies and politics. Also, the phones themselves have

Table 24.1. Lessons Learned from Rural and Regional Licensing Processes

Approach	Process	Good/Bad Practices
Multiple concessions and bundling of services	Multiple services bundled under one license, or the license provides an opportunity to expand operations to other areas in return for enhancing coverage.	In Venezuela, the rural licenses allow mobile and multimedia services in addition to fixed access, long distance, and international services. In Uganda, the second national operator license allows the operator to offer mobile services, and it is meeting the rollout commitments using GSM rather than fixed lines.
Packaging lucrative areas with higher-cost areas	Packaging lucrative areas with less profitable ones within the same license area as a way to ensure balanced network expansion between regions.	Tanzania was divided into four zones, with plans to issue two mobile licenses for each area. Currently, only the Coastal Zone has attracted operators. The other regions are seen as unprofitable, as there are no large urban centers in them. A packaging of the Coastal Zone with other areas might have expanded access more rapidly.
Freedom to choose technology in rural concessions	Rural operator licenses may include permission to install wireless local loop (WLL) lines and to offer other services in addition to the pure fixed network.	Ghana has licensed a WLL operator to provide coverage in rural areas.

Source: Dymond and others (2000).

Table 24.2. Possible Sources of Revenues for Universal Access Funds

Source of Revenues		Definition/Description	Characteristics/Examples
Interconnect levies		Access levies can be raised as incremental interconnection charges by the incumbent operator, so that operators providing universal access are compensated directly through the use of their network by competitors.	The interconnection surcharge is opaque, and the operator has no incentive to reduce its costs. Both these factors reduce competitive pressures on universal access costs. Especially in the least developed countries where the incumbent is far from providing universal access services, open auction subsidies supported by license fees, transparent levies on all telecom companies, or government budgets are preferable.
“Virtual fund” transfers	Incumbent operator carries a universal service or access obligation	“Virtual funds” support universal access providers on the basis of a regulator-prescribed costing methodology, with the money being provided by other operators.	
Operator revenue contribution	All operators charged a percentage of revenue	Most funds to date have been created using this model—a levy on telecommunications operators.	The levy generally varies between 1 and 2 percent, as illustrated by Peru and the Dominican Republic, for instance. In Guatemala, 70 percent of the revenues from spectrum auctions go to the fund.
Government budget	Funds for UA provided by treasury	In poorer low-income countries in particular, funding universal access purely from a revenue or spectrum levy alone is unlikely to be practical in the short run, and the use of government budgetary resources may become necessary.	This was the approach used in Chile; see details in text.
Seed finance by development bank or agency	Funds for UA come from international organizations	Sometimes, especially in the poorer developing countries, a development bank or agency can play a crucial role in financing the government rollout.	The World Bank’s recent telecommunications project in Nicaragua includes a small portion of seed financing for the rural development fund. Similar schemes are under discussion in Nepal and Nigeria.

become an important new business sector in the villages, generating jobs and income where none previously existed¹⁶. The average income per village telephone operator has been estimated at US\$700 per annum.

Microloans for phone shops or other retailers can also support retail services extension. The traditional approach is to franchise a telephone line to private individuals or small businesses and to pay a certain percentage of commission to the franchisee. This way, operators can often secure higher revenues than from a public phone because the private incentive tends to keep lines working well.

Microloans can also be used to help phone shop and small telecenter operators to expand from basic telephone and fax into the Internet and ICT arenas, as the market potential permits. In Delhi, India, the state government has taken this broad approach by starting a program to offer subsidized loans, at a 13.5 percent interest rate, to upgrade existing public call offices to cyber-café providing Internet access. Microloans or grants could also be used to support start-up costs for rural radio stations and to provide those stations with access to the Internet. Again, community radio stations can benefit greatly from Internet access—it can provide news, information and programming resources. There might be a role for community radio in replicating the RadioNet project, supported by International Development Research Centre (IDRC), which hopes to bring the Internet to some 30 regional stations within the next two years, opening up communication channels and facilitating the exchange of programs.¹⁷

Pro-poor applications and content. Provision of infrastructure is only the first step in exploiting ICTs for development. Without appropriate content, for example, the Internet will not be relevant to the poor in developing countries. There is also a large role for government to play in supporting the creation of appropriate content in broadcasting media. Same-language subtitling for television broadcasts supports language and literacy goals, and radio-based educational programming across a range of subjects and topics (math, language, health, agriculture) have been found to be highly cost-effective.

Governments often can and do assist the private sector in overcoming initial barriers to creating software for local use and for export. Support of “incubators” would be one way to help overcome such barriers with Internet applications in particular. There are a range of private sector Internet incubators emerging in industrial countries; examples include CMGI, Inc. of Boston, Garage.com in Silicon Valley, Idealab.com in Pasadena, and Incubasia in Hong Kong. These incubators provide a full range of resources to infuse start-up companies with the development strategies and financial support needed to introduce innovative products and services rapidly. Resources include office space and the accompanying network infrastructure; consulting and other services relating to development and technology; graphic design; marketing; competitive research; and legal, accounting, and business development support and services. Incubators also provide advice on strategy, branding, and corporate structure. Social applications incubators, subsidized by the government, might be able to support the development of Internet firms and projects that promised a high social return for the poor, for the excluded, or for the environment. Such sites or projects might include local language and content sites, portals with exchanges or information on income generation for the excluded, or environmental monitoring sites. Assuming a throughput of 10 incubates per year, initial costs might be as low as US\$500,000. A similar approach could be used for the development of local radio content.

Listening to the Poor. Central to any effort to expand useful ICT access to the poor is knowledge of their needs and current degree of access. This is especially true for publicly supported subsidy programs designed specifically to assist the poor. Examples of information resources required include the following:

- ⊃ data on users and their needs, including comprehensive information on excluded areas and groups, along with nationwide user surveys on needs and priorities;
- ⊃ an audit of infrastructure in place, including physical, educational, and institutional resources; and
- ⊃ a survey of business services and electronic commerce experience and practices, including existing electronic commerce and banking initiatives.

Household or community surveys are key, either stand-alone surveys or surveys that “piggy-back” on other poverty research efforts. Unfortunately, household use of and access to infrastructure services have not been primary topics of interest in Living Standards Measurement Surveys (see chapter 4, “Development Targets and Costs”). As a result, most surveys collect only basic information about how households supply themselves with communication services. The surveys rarely contain information about the communications resources available to households or about the quality of the service they receive.

For the ICT sector, useful additional information might include:

- ⊃ whether the household has a radio, telephone, Internet-enabled computer, and if so, what type);
- ⊃ if not, why not;
- ⊃ whether the household has *access* to a radio, public phone, telecenter, or post office;
- ⊃ distance to public communications services;
- ⊃ what the household spends on radio, telephone, and Internet per month; and
- ⊃ what the household spends in total on communication.

A good example is the Guatemalan LSMS survey, conducted in 2000.

Rapid market appraisal, using a package of participatory, community-based approaches to measure demand for information and community technologies, should be the second step in any publicly supported ICT rollout effort. The technique uses a detailed survey carried out in the area where expansion of ICT services is planned. The survey covers:

- ⊃ demographic and economic data to measure vital indicators such as approximate income, literacy, and population density;
- ⊃ potential business and government establishment users; these are likely early adopters; and

⊃ geographic and other factors that might affect the technical complexity of providing services.

In addition to data collection through surveys and demand studies, local communities need to be involved in the design of universal access programs by participating in decisions about particular information access outlets. Indeed, most studies find that the most effective way of assuring the economic success of ICTs in rural areas is to encourage local participation and create social institutions in support of the new technologies (Richardson 1999; Hudson 1995; see also chapter 9, “Community-Driven Development”). This can be achieved through a participatory approach, to complement technical and economic calculations of telephone placement.

24.4.3 Governance and provision of services to the poor

Governments can use ICTs to improve the quality and efficiency of public services, to strengthen government information flows internally, to promote accountability and transparency, to procure goods and services fairly and efficiently, and to raise quality standards for information technology suppliers. At the same time, there are significant risks: institutional failure, expense, poor design, and low levels of consumer access. A number of lessons should be kept in mind:

Incorporating ICTs must be seen as secondary to a broader governance reform agenda. The latter needs to be considered on its own merits (see chapter 8, “Governance”). This suggests a four-stage process in introducing ICTs (Heeks 1998):

1. acceptance by key stakeholders of the need to reform;
2. identification of the agenda for reform;
3. identification of the information systems requirements of the reform; and
4. identification of the role of ICTs, if any, in meeting these requirements.

Evolutionary approaches should be preferred over revolutionary reforms. Introduction is complex and expensive—training and support costs, such as operations and maintenance, for computers can add up to as much as five times the cost of equipment, and this does not allow for the wider institutional reforms that are a necessary part of computer introduction (see below). Demands on scarce technical capacity are high. The costs of failure are also very high—and the risk and cost of failure grow with the increasingly radical nature of reform.

Prioritization is vital, given the difficulty, cost, and time taken to introduce new systems. Priority should be given to the government sectors where better information processing has the highest return and the risks of exclusion are lowest. This is likely to be in back office functions such as the processing of tax and land records rather than in functions requiring direct contact with service consumers who might not yet have access or the knowledge to use that access (see tables 25.3 and 25.4).

Widespread consultation and participation of users and stakeholders is necessary during design. While a senior champion is undoubtedly vital to the process as well, if the everyday system users are not involved in reform efforts and ICT rollout, they are far less likely to accept new methods of service provision.

Access should precede service rollout. This is especially important as governments begin to move toward providing services directly to citizens online, and suggests an ambitious program of MCT rollout. It also suggests implementing the technologically most simple and robust systems that will not become immediately obsolete. Microdesign issues become important here—for example, using Word 6.0 rather than Word 2000, and avoiding large graphics in Web sites.

Low-technology solutions should be examined before high-technology ones. Because the complexity, cost, and access difficulties of introducing ICTs tend to increase with their advanced nature, the simplest radio- or telephone-based solutions should be examined for cost-effectiveness before more radical and expensive reforms involving newer technologies such as the Internet are tried.

Following such lessons, and allowing for the peculiarities of different sectors (see box 24.9), the benefits of ICT introduction in government services can far outweigh the costs.

Table 24.3. Priority Areas for Advanced ICT Use in Pro-Poor Government Services

<i>Government Sector</i>	<i>High Priority</i>	<i>Lower Priority</i>
Education	Tertiary and technical ICT training, teacher support, education sector administration, distance education, selected use in secondary education	Direct and widespread use across school curriculum
Health	Epidemiological data collection and processing, administration, electronic health care data	Real-time online consultations
Tax, fines, and fees	Records, instructions, databases	Online payment systems
Finance	Debt management systems, regulatory data	
Environment	Data collection, processing, and monitoring	Support for telecommuting
Governance	Records dissemination, consultation	Online voting
Welfare	Records, databases, information	Electronic payment systems

24.4.4 A broader reform agenda

Outside the field of ICT itself, there may be a need for reforms in investment policies and trade controls to encourage investment in and use of basic infrastructure and of advanced services. Infrastructure rollout and Internet commerce are affected by policies on taxation, tariffs, currency convertibility, dispute resolution/jurisdiction, intellectual property rights (particularly for informational goods), and privacy and consumer protection. The political climate and security are also important.

Box 24.9. Issues with ICTs in Education and Health

While the benefits of moving to computer-based learning and universal student access to the Internet are clear, the cost-effectiveness and sustainability of these programs have yet to be fully judged. As with use in government services more generally, broad-based ICT use in education should accompany reform designed to maximize the technology's benefits, its rollout should be carefully weighted against other needs in the education sector, and introduction should be phased. The maximum benefit available from cheaper and more widespread ICTs, such as radio, should also be fully leveraged in conjunction with, or before, mass rollout of more advanced technologies.

This said, it is important to ensure that the next generation of graduates includes enough students with the skills to use ICTs effectively, and more broadly, in the economy. Computer use, at least in a limited way, should be expanded through the secondary education system. Argentina provides one model for the method of maximizing returns on this expenditure. The country rolled out an initially very small number of computers to each school. These first computers should have had the maximum marginal benefit for schools, allowing for managerial data monitoring and transfer, for example. The ministry then monitored computer use. Where the equipment was fully leveraged, suggesting the presence of a receptive staff, the ministry rolled out a second set of computers—concentrating investment where the returns were likely to be greatest. While such a program raises equity issues, and so should be accompanied with an active support program for schools in rural and disadvantaged areas, it does allow for the maximum return to be garnered from a significant investment.

Similar lessons apply to health, with a need to balance priorities carefully and integrate with wider reform programs. Health use of the Internet also raises a number of important privacy and safety issues, as described below.

First, it is difficult to know from whom services are being bought over the Internet. One possible model is the Malaysian Telemedicine Act of 1997, which restricts the practice of telemedicine to either certified local practitioners or to outside practitioners who register and are granted a certificate to practice telemedicine.¹⁸

Second, the electronic transmission of patient data leads to an increased potential for breaches in the confidentiality of doctor-patient relationships. This is particularly problematic where information crosses national borders with differing regulatory requirements and capacities. Multilateral rules and agreements have yet to address this issue, but as the use of telemedicine grows, problems in this area can be expected to increase.

Third, as current medical technologies tend to be proprietary, they use a variety of different formats, technologies, and input languages. As telemedicine increasingly reaches across national borders, attention will need to be focused on the standardization of platforms to reduce medical errors and wasted resources.

ers and physical materials—cost-effective	schools	other needs in the education sector	based education
<ul style="list-style-type: none"> ⊃ Expands distance learning opportunities ⊃ Enhances ICT skills and ensures that population is able to adapt to new technologies ⊃ Links teachers and students across countries 	<ul style="list-style-type: none"> ⊃ No trained employees to handle software or networking problems ⊃ Sustainability not yet fully judged—recurrent costs, cost of updating equipment 	<ul style="list-style-type: none"> ⊃ Pilot rollout as a method of selecting targeted rollout ⊃ Increase funding for teacher training in Internet and information technology ⊃ Leverage benefits from cheaper and more widespread ICTs, such as radio 	<ul style="list-style-type: none"> ⊃ No. of new teachers trained every year ⊃ No. of training seminars delivered ⊃ Regions and areas covered ⊃ Test scores, pupils trained ⊃ Cost-effectiveness analysis results

Health

<ul style="list-style-type: none"> ⊃ Administration and management ⊃ Storage and transmission of data ⊃ Surveillance and monitoring ⊃ Publication and dissemination of medical findings ⊃ Doctor-patient consultation ⊃ Physician collaborations, especially in remote areas 	<ul style="list-style-type: none"> ⊃ Patient protection and privacy ⊃ Medical errors and wasted resources ⊃ Payment and reimbursement mechanisms for online medical services ⊃ Misleading or fraudulent product information, lack of individual counseling for patients ⊃ Long-term sustainability of telehealth projects—recurrent costs 	<ul style="list-style-type: none"> ⊃ Participatory assessments of local needs ⊃ Pilot program rollout ⊃ Standards and criteria for licensing and certification of medical practitioners and products ⊃ Standardization of platforms ⊃ Authorization before marketing medical products ⊃ Vocabulary and terminology work 	<ul style="list-style-type: none"> ⊃ Percent of clinics, hospitals with ICT access ⊃ Percent of registered or certified practitioners to practice telemedicine
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Environment

<ul style="list-style-type: none"> ⊃ Compile data and build public access databases that can analyze and sort ⊃ Environmental information ⊃ Encourage communication and knowledge sharing between public and private sectors to meet environmental objectives efficiently ⊃ Gain environmental benefits through the reduction in factor and resource inputs 	<ul style="list-style-type: none"> ⊃ Technical staff not available ⊃ Users not familiar with, not able to access, or unaware of environmental information ⊃ ICT use not encouraged over commuting 	<ul style="list-style-type: none"> ⊃ Build a core of effective users ⊃ Provide continual training for data providers and users ⊃ Develop guidelines and policies for management of geographic information ⊃ Advertise available information ⊃ Support telecommuting with education and transfer benefits 	<ul style="list-style-type: none"> ⊃ Public involvement in environmental monitoring—no. of violations reported ⊃ Extent of environmental information available online ⊃ Percent of workers telecommuting
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Welfare

<ul style="list-style-type: none"> ⊃ Decentralization of welfare services 	<ul style="list-style-type: none"> ⊃ Interoperability of welfare informa- 	<ul style="list-style-type: none"> ⊃ Provide public access terminals at 	<ul style="list-style-type: none"> ⊃ Documented standards and classi-
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A number of countries have embarked on creating national “knowledge economy strategies” to respond to the challenge of the new networked economy—examples include Thailand, China, the Republic of Korea, and Ireland. Such strategies, if they are not viewed as fixed five-year plans, and if they are designed with a clear focus on consultation, participation, and poverty reduction, can play an important role in prioritizing pro-poor reforms to ensure equitable advantage from the new ICTs. Such strategies should focus on the areas described below.

A preliminary assessment of the knowledge economy. This should include a comparative review of the educational and infrastructural underpinnings of ICT use (who has access to which ICTs, and where? What is the skill base for using and maintaining ICTs?). It should also study broader educational resources, such as language skills, and the legal environment for investment, labor, and e-commerce. Finally, the assessment should review current uses of ICT in the private and government sectors. The assessment should help policymakers determine where the country could learn from global best practices, and what opportunities are available to the country from the networking revolution.

Improving access to the tools of the knowledge economy. There is a need to roll out the physical and intellectual requirements for ICT use. This includes a reform agenda to widen access to the range of ICTs, from community radio and posts to broadband Internet. It suggests regulatory and subsidy programs to assure access to the poorest. It also includes a widespread program of reform in education to focus on training in literacy, language, and technical skills, especially for the excluded.

Identifying priority areas for broad-based economic and institutional reform to increase competitiveness. The effective use of ICTs is dependent on a raft of policies and institutions outside the sector. A broad strategy would cover areas such as opening up the economy and promoting competition and e-commerce, developing and deepening financial markets—and, especially, improving access for the poor, enhancing flexibility in the labor market, and strengthening social safety nets.

Expanding e-government. It is important to set priorities in the use of ICTs in government. These are needed in areas such as tax, education, health, and the improvement of governance transparency. Access of officials to ICTs that will have the greatest marginal impact, including in online government contract bidding, needs to be ensured. Further, the bureaucratic framework to ensure maximum returns needs to be put in place.

E-commerce in particular requires a supportive legal framework in the banking and industrial sectors, as well as legal and judicial changes in response to challenges that have emerged in tandem with the new technologies. These include standards and protection of digital signatures, the liability of value-added networks, regulation of certification authority, protection of intellectual property, and computer crime and data protection. The complexity of these issues is a major obstacle for countries that lack the technical capacity to design and implement needed reforms. In response, the United Nations Commission on International Trade Law (UNCITRAL) has developed a standardized e-commerce “model law” designed to be easily integrated into most country’s legal systems. The law is based on developing equivalencies for paper-based concepts such as writing, signature, and original. Also, the model law provides specific guidance for the design of laws regulating legal coverage of electronic communication and the transmission of goods and services through the Internet.¹⁹

The financial systems in many countries also require significant upgrading and regulatory changes to meet the demands of e-commerce. Business and consumer trust in electronic forms of payment needs to be enhanced through effective supervision and technical capacity. In particular, national banking systems will need to upgrade their infrastructure to accommodate electronic payments and settlements. The postal network is also central to e-commerce as a major delivery tool for purchased items. This reconfirms the importance of following a broad-based ICT reform program involving posts. The goal of widespread access to postal services provides an opportunity to leverage linkages. In South Africa, for example, Winterveld Post Office is being used to host a rural telecenter. Combining the functions of a rural post office, which frequently offers services such as banking, with that of a telecenter might engender significant savings compared to providing the two separately.

Technical expertise is also a central requirement in rolling out access to ICTs. These skills are needed not just in cities or exchanges, but in every telecenter. This technical expertise is frequently rare in low-

income countries, and therefore expensive. If costs are to be reduced and necessary skills made available, the government should support a significant expansion in technical training for the use and support of telecommunications and the Internet.

24.4.5 Monitoring and evaluation

As detailed in chapter 3, “Monitoring and Evaluation,” both monitoring and evaluation are important activities in measuring performance, identifying and correcting potential problems early on, and improving the understanding of the relationship between different poverty outcomes and ICT policies. However, these are two different activities: monitoring involves tracking the progress in achieving goals (that is, comparing the level achieved with a predetermined target) while impact evaluation involves assessing the changes in individuals' well-being that can be attributed to a particular program or policy. Although many of the concepts and some methodologies are the same, there are important differences between monitoring and evaluation, at both the project level and at the level of a national strategy.

Monitoring issues in ICT

Selecting indicators

There is no general rule about the optimal number of indicators that need to be selected for monitoring as long as they are relevant to goals agreed to in the poverty reduction strategy. However, as time and resources are limited, there is a trade-off between the number and the quality of indicators that can be measured well on a timely basis and provide useful information for decisionmaking. As discussed in chapter 3, “Monitoring and Evaluation,” the selection process would generally consider three broad types of complementary indicators: impact, outcome, and intermediate (input/output) indicators.

Impact indicators measure the final effect of ICT interventions on different poverty dimensions. In particular, they are used to track progress on achieving goals related to improving economic opportunities for the population, promoting private sector development, and improving services in social sectors, especially for the poor.

Outcome indicators are intended to capture “midway” effects that are generally considered as necessary but not sufficient conditions to achieve final impacts. Ideally, the monitoring system should include a combination of measures of use/access, quality, and user satisfaction with ICT services.

Ideal indicators may not be good indicators, if they are too difficult or costly to measure well. It may be better to use a proxy, such as a measure of access to ICTs, rather than the use of ICTs. In fact, most countries experience large variations in access to ICT across rural and urban areas. Monitoring indicators—particularly outcome indicators—should be disaggregated at least at the rural and urban level to allow tracking progress in closing the digital divide.

Variables measured by impact and outcome indicators depend on a multitude of cross-sectoral factors. Many, such as household behavioral responses, are outside government control. Moreover, changes in these variables may occur only in the medium to long run. Thus, it is important to complement impact and outcome indicators with intermediate indicators.

Intermediate (input/output) indicators provide information on actions taken and their efficiency level in improving the coverage and quality of ICT services. They measure things that reflect policy changes and are relevant inputs to achieving the agreed-on goals. Since it is difficult to find all these attributes in just one indicator, generally the monitoring system would include a combination of measures of investment or expenditure levels in ICT that are pro-poor, some measure of the services generated, and the efficiency of their production as intermediate indicators.

Data sources

Monitoring requires a combination of data sources, including household surveys and survey data from operators and other agents engaged in the provision of services. Qualitative data from participatory

poverty assessments or other similar studies may also be required. The main sources of data relevant for ICT monitoring are summarized in table 24.5.

The lack of household data on access to ICT has prompted a number of initiatives to:

- ensure that national surveys include questions about telephone/Internet/postal access, cost, quality in the next three years;
- support the compilation of international data on access, cost, quality to Internet/telephone/postal/broadcast; and
- undertake collection on qualitative information such as postal sector reform, broadcast technology reform, and universal access, and so forth.

Table 24.5. Main Data Sources for Monitoring ICT Interventions

Data source	Relevant data for ICT monitoring	Remarks
International Telecommunication Union (ITU)	ITU data are compiled through annual questionnaires sent to telecommunications authorities and operating companies and are supplemented by annual reports and statistical yearbooks of telecommunications ministries, regulators, operators, and industry associations. The quality of data varies among reporting countries as a result of differences in regulatory obligations for the provision of data.	<ul style="list-style-type: none"> ➤ Nationally representative data on ICTs (both outcome and intermediate indicators). ➤ Covering most countries. ➤ No consumption or detailed income information (thus difficult for microeconomic-level analysis).
Pyramid Information Infrastructure (II) Indicators Database	<p>Very detailed data on II performance indicators:</p> <ul style="list-style-type: none"> ➤ circuit and packet switching and transmission; ➤ wired access; ➤ wireless access; and ➤ customer premises equipment. <p>On II investments and revenues. Pyramid Research, the telecom division of the Economist Intelligence Unit, created this database.</p>	<ul style="list-style-type: none"> ➤ A comprehensive set of indicators (mainly outcome indicators). ➤ Updated annually. ➤ Covering only 60 countries.
World Development Indicators (WDI)	Drawing on ITU, Telegraphy, UNESCO, Internet Software Consortium, Netcraft, Digital Planet, and WITSA, WDI includes indicators that measure the penetration of the information economy and some common performance indicators for telecom, including measures of supply and demand, service performance, and tariffs.	<ul style="list-style-type: none"> ➤ A good summary of data from various sources. ➤ Updated annually. ➤ Indicators covered are limited: do not capture elements of the information disseminated, such as its quality.
LSMS/Household Surveys	Record detailed data on household expenditures to measure people's access, utilization, and satisfaction with selected social and economic services. For ICT use, they generally ask how much the household has spent on ICT services; whether there is an Internet connection and the average number of hours a day spent on Internet, and so forth.	<ul style="list-style-type: none"> ➤ Comprehensive, nationally representative household survey; allows measurement and analysis of various poverty dimensions. ➤ Collection and analysis of information is time-consuming and expensive. ➤ In the older LSMS surveys the ICT coverage was very limited. In the Guatemala 2000 LSMS, the information was collected through an expanded module that will also be used for later LSMS surveys.
Qualitative (Case) Studies	Can provide information on user satisfaction with ICT services.	<ul style="list-style-type: none"> ➤ Sample size generally too small and/or not representative.

Monitoring indicators at a glance

Table 24.6 provides some guidance and examples on the choice of indicators. However, the final selection of indicators should be driven by the specific poverty reduction goals, policy choices, monitoring capacity, and the views expressed in the participatory processes of each country.

Assessing ICT policies, programs and projects

Regular monitoring can be complemented with more in-depth assessments of particular policies and programs. Depending on the methodology applied, these studies can answer different questions of

Table 24.6. Indicators for Monitoring ICT-Related PRSP Goals

Goal: To improve economic opportunities of the population	
Impact indicators	
Indicator	Definition
Macroeconomic stability	⊃ Percentage of contribution by ICTs to GDP
Job creation	⊃ No. of ICT-related jobs created
Private sector development	⊃ Percentage of private sector companies with access to affordable ICTs (notably SMEs)
Governance	⊃ Percentage of government agencies online – central government – local government ⊃ Percentage of government services that can be delivered through ICTs (phone, e-mail, and Web sites)
Goal: To improve social services	
<i>(See Table 24.4 for more detailed ICT impacts on major social sectors)</i>	
Outcome indicators	
Indicator	Definition
Access/Connectivity	⊃ No. and percentage of households with access to radio, telephone (fixed/mobile), PC, fax machine, TV, Internet, post office – public – private ⊃ No. and percentage of households with service coverage in rural areas/among the poorest
Quality of services	⊃ Percentage of successful calls ⊃ Percentage of households reporting satisfaction with the services
Intermediate (input/output) indicators	
Enabling environment	⊃ privatization: whether the incumbent is privatized ⊃ regulation: independent regulator and its responsibilities (qualitative) ⊃ liberalization: competition rating
Efficiency in the provision of services	⊃ Waiting list for mainlines (No. of people on the waiting list and /or waiting period) ⊃ Telecom staff per 1000 connections
Expenditures/ Investment level	⊃ US\$m /Percentage of GDP invested in ICT infrastructure ⊃ US\$m in financing mobilized ⊃ Profitability of investments
Goods/Services generated	⊃ No. of lines/users/subscribers added
Training/Human capacity building	⊃ US\$m invested in training ⊃ US\$m invested in R&D ⊃ No. of IT specialists trained annually

interest such as which social groups are benefiting most from investments in ICTs and to what extent changes in well-being indicators can be attributed to a particular ICT policy or program.

In the ICT context, evaluations have focused mostly on establishing the causality between changes in ICT performance indicators and improvements in economic growth. Recent econometric studies have confirmed evidence of high returns on investment in the telecommunications sector. The privatization of infrastructure services, in particular, has had a strong effect on the decisionmaking process of foreign investors. For each dollar a country raises through the privatization of infrastructure, an additional US\$2.42 is attracted in FDI (Sader 1995, p. 31).

Other studies have extended these correlations to other indicators, such as social development, cost savings for industry, and increased transport efficiency.²⁰ These studies are useful and have reasonable costs as they piggy-backed on existing or ongoing large household surveys, saving much of the costs of creating and implementing a whole new data collection instrument.

For some projects, quantitative measures of sector progress should be complemented with qualitative estimates.

- *Status of reform.* Movement toward a well-regulated competitive environment in the sector with strong provision for universal access.
- *E-readiness.* Passage of electronic signature laws, financial reforms for Internet-based transactions, improvements in service delivery.
- *Improvements in entrepreneurial environment.* More businesspeople ready to take advantage of opportunities presented by the new technology.
- *Quality of content.* Content sites that overcome market barriers and are suitable for developing nations.
- *Improvements in knowledge.* Well-disseminated studies and reports, with focus on developing economies, on best practices in telecommunications/Internet/postal/broadcast areas.

For projects expected to involve large transactions (such as privatization of the state monopoly), macrotargets need to be set. For others aimed at improving rural access to ICT services, income and nonincome impacts of that access should be measured. However, it is difficult to establish clearly the link between project outcome and development impact. Therefore, macroeconomic, income, or quality-of-life indicators should be chosen (a) on a case-by-case basis (b) only in large projects where the impact is expected to be significant, and (c) only where resources have been planned and dedicated at the outset to carry out such an evaluation.

Some of the monitoring indicators above (percentage of population with postal access for example) are not easily available at the country level. For the indicators to have contextual meaning for individual projects, this would need to change. It requires at the least a project-specific approach to collecting data both in the project host country and a range of comparator countries at the time of project implementation. This will involve including in project agreements support for gathering suitable project monitoring data not already available. Given the rapidly changing and expanding nature of the sector, the priority of evaluations of ICT projects is increased.

Notes

1. The statistics in this paragraph are drawn from Africa Internet Forum (1999), ITU (1999), and Wilson and Rodriguez (1999).
2. See Analysis (2000) for a review.
3. See Metropolitan Computer Times 07/07/99
4. Bhatnagar, 2000, p.1.
5. The WAI guidelines (<http://www.w3.org/WAI/>) have been adopted in the European Union member states to guarantee accessible design of websites.

6. Adkins, D. (1999) Cost and Finance in A. Dock and J. Helwig (eds.) *Interactive Radio Instruction: Impact, Sustainability and Future Directions*. Washington, DC: The World Bank.
7. Tony Dodds' 1996 50-country survey and 1999 update found that 55 percent of distance education programs surveyed used radio compared to 37 percent using audiocassette, 15 percent video, 7 percent TV and less than 3 percent using computers (Dodds, T. (1999) *Non-Formal and Adult Basic Education through Open and Distance Learning in Africa* mimeo, Centre for External Studies, University of Namibia).
8. Information from the infoDev stories project—see www.infodev.org.
9. Forbes January 11, 1999.
10. Nwaerodu, Ndubuisi Goodluck, and Gordon Thompson. 1987. "The Use of Educational Radio in Developing Countries: Lessons from the Past." *Journal of Distance Education* 2(2):43-54.
11. GIS systems in environmental management generally refer to three distinct technologies used in combination. The Global Positioning System (GPS) is a satellite-based navigation system that can identify longitudinal and latitudinal coordinates and altitude measurements. Remote sensing is generated by satellite or aerial advanced resolution photography, and monitoring can depict ecosystem diversity, vegetation density, and plant chemistry. GIS is a separate application that often incorporates the use of the previous two applications through computer applications and database management (Brodnig and Mayer-Schonberger, 1998). The discussion above uses GIS as a generic term incorporating some or all of these applications.
12. See Easterly (1996).
13. A recent study (Wallsten, 1999) also suggests that privatization, good regulation, and a competitive mobile market (with, say, three mobile companies) could double the number of lines per capita in some of the poorer markets in Africa.
14. <http://commons.somewhere.com/rre/2000/RRE.Radio.and.the.Intern.html>
15. For more information on telecenters in Senegal, see http://www.idrc.ca/acacia/engine/eng_6.htm; <http://www.telecom-plus.sn/observatoire/Obtcp.htm>; and <http://www.sonatel.sn/c-telece.htm>.
16. More of information can be found on GrameenPhone at <http://newciv.org//GIB/crespec/CS-162.html>; http://infoasis.com/people/stevetwt/heroes/muhammed_Yunnus.html; and <http://www.rdc.com.au/grameen/impact.html>.
17. <http://www.idrc.ca/telecentre/evaluation/html/main.html>
18. An unlicensed practitioner faces a sentence of imprisonment of up to five years and a fine of up to RM 500,000. Telemedicine is defined as "the practice of medicine using audio, visual, and data communications." (Siddiqi 1999)
19. The model law covers legal recognition of data messages, digital signatures, originality, admissibility and evidential weight of data messages, the formation and validity of contracts, recognition by parties of data messages, attribution of data messages, acknowledgment of receipt, and time and place of dispatch and receipt of data messages. See <http://www.uncitral.org/en-index.htm> for the complete text.
20. See Analysis 2000 for a review.

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Chapter 25

Mining

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25.1 Introduction

This chapter provides instruments for policymakers in countries where mining has the potential either to contribute significantly to poverty reduction or to heighten risks to the lives of the very poorest of society. Policymakers will find that, to a large extent, depending on how well mining policies and frameworks are developed, the mining sector will be biased toward either exerting a positive or a negative influence on development in these countries. Mining is a unique industry whose impact extends to national and local economic development, environment, and sociocultural profiles, often specific to a few large mining areas in a particular region or country.

There are approximately 60 developing and transition countries where mining is or could become an important economic activity. These include (a) countries that are important mineral producers in the international marketplace, (b) countries that are modest producers by international standards but where mining makes an important contribution to the regional or national economy, and (c) countries where small-scale or artisanal mining provide significant employment in rural or remote communities. Table 25.1 lists countries in these categories.

This chapter discusses the four dimensions of poverty—economic opportunity, capability, security, and empowerment—in the context of two generically different forms of mining: (1) large-scale mining and (2) small-scale and artisanal mining.¹ Both create very different contexts for opportunities and risks that may evolve from the use of natural resources. We recommend referring to dedicated chapters of this book for specific information on such issues as macroeconomics, environment, water, health, transport, private sector development, energy, and participation.

Table 25.1. Countries Where the Mineral Sector Does or Could Have an Impact on Poverty Based on Existing Mineral Resources

<i>Latin America and the Caribbean</i>	<i>Sub-Saharan and North Africa</i>	<i>Europe, Middle East, and Asia</i>
Argentina	Angola	Bhutan
Bolivia	Botswana	Bosnia
Brazil	Burkina Faso	China
Chile	Central African Republic	Fiji
Colombia	Congo	India
Ecuador	Eritrea	Indonesia
Guyana	Ethiopia	Jordan
Jamaica	Ghana	Kazakhstan
Mexico	Liberia	Kyrgyz Republic
Peru	Madagascar	Malaysia
Venezuela	Mali	Mongolia
	Mauritania	Pakistan
	Morocco	Papua New Guinea
	Mozambique	Philippines
	Namibia	Poland
	Niger	Romania
	Sierra Leone	Russia
	South Africa	Solomon Islands
	Tanzania	Sri Lanka
	Tunisia	Thailand
	Zambia	Turkey
	Zimbabwe	Ukraine
		Uzbekistan
		Vietnam
		Yugoslavia

Large-scale mining. Large mines generate about 85 percent of the world’s nonfuel minerals and more than 95 percent of the world’s total mineral production. The industry employs an estimated 2.5 million people worldwide and is dominated by some 50 major mining and metals companies, each with an average of approximately US\$4.3 billion in revenue. These companies operate globally and are by origin concentrated in four countries: the United States, South Africa, Australia, and Canada. They invest annually about US\$25–US\$30 billion worldwide.

Small-scale mining. Artisanal and small-scale mining generate about 15 percent of the world’s nonfuel minerals yet are a major source of income—in about 30 countries around the world—for at least an estimated 13 million people, a significant proportion of whom are women and children. Between 80 million and 100 million people are estimated to depend on small-scale mining for their livelihood. While the definition of small-scale mining varies widely, levels of employment are considered to be typically less than 50 workers per operation. Production is labor intensive with little and quite basic mechanization.

25.1.1 Who should use this chapter?

This chapter is designed to be helpful to policymakers in countries in which mining has the potential to significantly influence regional and national poverty profiles—either optimally, by contributing to poverty reduction or, if not managed well, by creating risks to which the poor are particularly exposed. It also can be useful for other stakeholders, such as investors, communities, and nongovernmental organizations concerned with the mining sector and its local and national impact.

Mining issues are not relevant to all countries. Worldwide, there are approximately 60 countries—which collectively contain about three-quarters of the population of developing and transitional economies—in which the mining sector can factor into poverty reduction strategies. (For a full list see table 25.1.) These include “mining countries,” often well known for the sector’s contribution to economic growth through exports, such as Chile, Mexico, Peru, Botswana, Ghana, South Africa, Jordan, Indonesia, and Papua New Guinea, in addition to less well-known mining countries such as Argentina, Mali, and Tanzania. In some countries, the sector also serves large domestic markets and employs millions of workers: China, India, Brazil, Indonesia, and the Russian Federation (Weber-Fahr 2002).

In some countries, the contraction of the mining industry has resulted in mine closures and consequent severe poverty increases. The tin industry collapse had this effect in Bolivia, while Peru, Zambia, and Romania were affected by base metal mine closures; and the Russian Federation, Poland, Romania, Ukraine, and China have felt the impact of coal mine closures.

Finally, mining wealth has been squandered in some countries that today are no better-off—and in some cases have seen poverty levels worsen—in the wake of mismanaged mining development and plundered mineral wealth. Examples include the Democratic Republic of the Congo, Angola, and Sierra Leone

A country’s mining sector can play an important role in poverty reduction strategies if the approximate share of the mining sector is one or all of the following: (a) > 5–10 percent of fiscal revenue; (b) > 10–25 percent of export earnings; (c) > 3–5 percent of the gross domestic product (GDP); or (d) > 10–15 percent of the industrial workforce. Where any of these indicators apply to a region or federal state, the impact of the mining sector on poverty reduction can have similar significance on a regional scale.

Mining can provide the government with budgetary resources that would be necessary for poverty reduction programs and that can have the potential to be significant catalysts for further private sector development in the region or country, as has occurred in Chile, Botswana, and South Africa. The histories of mining in these countries contrast markedly with that of the Democratic Republic of the Congo, which as noted above illustrates the potential for negative consequences due to sector mismanagement.

At the same time, policymakers need to remain mindful of the social and environmental consequences of mine sector restructuring and mine closure to ensure that these are mitigated and do not ultimately cause significant harm to the poor or increase regional poverty profiles, as has occurred in Poland, Ukraine, Romania, and the Russian Federation.

Separate consideration must be given to countries that to date have had no large mining sector but in which development of natural resources appears to be the only option, or a key option, for generating growth and economic development. An example is Mali, which in 1990 had no operating mine; after 10 years and significant policy and sector reform, there are two mines in operation and a third under development. Mineral exports have become its largest single export commodity and have strongly contributed to Mali's income and economic performance. Indicators for this situation would be geological data that would show the potential for a mining sector to become significant for a country's economy in the future.

Yet another set of circumstances arises in countries with clusters of small-scale miners, people living on relatively large surface areas and often generating below-subsistence incomes, largely without environmental or social protection or governance structures. When these clusters cumulatively comprise tens of thousands of individuals or more, the government should consider active implementation of a poverty reduction strategy that takes into consideration potentially explosive environmental and social consequences and cultural and political conflicts that can arise in the context of small-scale mining. Examples of such countries include, among others, Brazil, China, India, Indonesia, Sierra Leone, and the Democratic Republic of the Congo.

25.1.2 How to develop a section on mining for a Poverty Reduction Strategy Paper

In developing a section on mining for a Poverty Reduction Strategy Paper (PRSP), policymakers will want to focus on (a) gathering relevant data to understand actual and potential poverty-related impacts, risks, and opportunities of the mining sector in their country (see also section 25.3 of this chapter); (b) setting clear objectives and identifying priorities for intervention in a consultative process regarding poverty impacts and the mining sector; (c) identifying the mechanisms to achieve the objectives, including needed changes to policies, laws, and regulations; and (d) establishing the necessary institutional arrangements, including authorities, responsibilities, and capabilities, to implement the mechanisms. Depending on a country's civil society, the consultation and priority setting should include local community representatives and community-based organizations (CBOs), local government representatives from respective mining regions, industry associations, trade unions, nongovernmental organizations (NGOs), and other relevant parties. In most cases, it would be useful if the process were led by the country's mining ministry or agency. Typically, these have harnessed the country's mining expertise and will be ready to contribute to formulating policy for poverty reduction. A constructive partnership can almost always be created with the medium-scale and large-scale mining private sector, so that all data and expertise available can be leveraged to create sustainable development opportunities for a vibrant mining sector that contributes to poverty reduction (see chapter 7, "Participation").

Potential positive impacts on the poor

Mining can contribute to poverty reduction in a variety of ways; most linkages work directly by generating income and creating opportunities for growth for lateral or downstream businesses. There are also indirect linkages through investments, which, in turn, enable better social services and catalyze improvements in physical infrastructure.

- ***Fiscal impact and foreign exchange income.*** Commercial-scale mining can be an important source of foreign exchange and fiscal receipts for governments. When managed well, the net foreign exchange and taxes generated by mining can be used by governments as an engine for overall economic growth and as a funding source for social sector and poverty reduction programs. In countries such as Chile, Mexico, Botswana, Ghana, and South Africa, substantial positive fiscal impact from mining has contributed to economic and social development (see chapter 12, "Macroeconomic Issues").
- ***Income generation.*** Small-scale mining provides a livelihood for approximately 13 million workers and their families worldwide, particularly in countries such as Bolivia, Brazil, Burkina Faso, China, Colombia, the Democratic Republic of the Congo, Ghana, Ecuador, India, Indonesia, Madagascar, Tanzania, and Thailand. Large-scale mining provides direct employment and eco-

conomic self-sufficiency for some 2–3 million workers and their families worldwide. In addition, for every job created directly by large mines, between 2 and 25 jobs are created with suppliers, vendors, and contractors to the mine and to miners and their families, typically provided in the context of small and microenterprise activity (Remy and others 2002).

- **Local economic development.** Large mining operations often invest substantially in local economic development through training, social services, and public goods such as clean water, transport, energy, and other infrastructure. They can also be a catalyst for improvements in local government capacity as they work with local governments and communities to avoid the creation of a culture of dependency on the mine. There are various mechanisms to ensure that mining operations are not “islands of prosperity” in a “sea of poverty” but rather have a sustainable positive impact on local economic development, ranging from enhancement of supply-chain linkages, to establishment of local foundations, to equity share arrangements.
- **Improved land-use planning.** Geoscience and mapping data collected for mining purposes can contribute to improved land-use planning. This can benefit the poor by helping identify and address issues related to competing land uses, which in turn helps to avert negative impacts on agricultural production and food security.
- **Source of energy.** In countries with significant coal resources, such as China, India, and South Africa, coal is an important source of energy contributing to economic growth. In countries with severe winters, such as the Russian Federation, Poland, Ukraine, Mongolia, and Kazakhstan, coal is essential, particularly for poor households, since it provides accessible and affordable heating (see chapter 21, “Energy”).

Potential negative impacts on the poor

Mining, and the cessation of mining where it has become economically untenable, can also be a cause of poverty. It can become a drain on a government’s budget and can, directly or indirectly, adversely affect the living conditions of the poor and other vulnerable groups. Areas of concern that require monitoring include:

- **Governance, corruption, and macroeconomics.** If poorly managed, a large and profitable mining sector can have negative consequences on governance and macroeconomic development. The often substantial fiscal incomes derived from mining can create a cycle of corruption and inefficient governance in mineral-dependent economies. Mining incomes can get diverted for personal or political gain, eventually draining rather than supporting state budgets. At the same time, a dominant mining sector can lead to a positive shock (boom), with consequent Dutch disease² effects on the nonmining economy, endangering the development of other sectors. In some cases, state-owned industries incur heavy losses, requiring large subsidies. In all cases, inappropriate management of the situation will incur high opportunity costs for the economy, considering that revenue and opportunities for economic development are based on a nonrenewable natural resource (see the toolkit section in chapter 12, “Macroeconomic Issues”).
- **Environment.** Food security can be threatened or compromised by mining-related factors such as loss of agricultural land; water pollution; water supply (which can be affected when the demands of mining operations divert excessive amounts of water from the local supply); tailings management of mineral and stone waste; noise; dust; and land disturbance often associated with mining activities. Each of these therefore presents a potential threat to the health and livelihood of the poor and vulnerable groups who have little mobility or means of alleviating negative impacts. Such environmental damage can be caused by small-scale mining as well as by large-scale mining, if no appropriate precautions are taken or deemed affordable.
- **Health and human development.** Small-scale and large-scale miners are often migrant workers who live without their families and within disrupted social contexts. This situation can encourage a high prevalence of HIV/AIDS and other communicable diseases in and around mining communities. Indeed, several mines in southern Africa report infection rates of more than 30 percent among their workforces, well above national averages. Work-related injuries and health risks—for

example, lung cancer associated with coal mining—also reduce miners’ life expectancy and often put families in precarious situations.

- 3) **Sociocultural issues.** Mining projects frequently are located in remote areas where indigenous communities are members of a distinct cultural group, often a minority within a community of minorities. Here mining activities can have a negative impact on the livelihood of indigenous people, especially with regard to issues concerning land tenure, often causing sociocultural conflicts within and among communities. At the same time, the lure of new opportunities can create in-migration that may cause new tensions in the community between existing residents and newcomers.
- 3) **Negative impacts on nonmining sectors.** Large mining operations can inadvertently have an adverse effect on the ability of the local nonmining population to achieve and sustain economic self-sufficiency. The ability of this population to earn a living can be threatened or impaired by the mine’s use of natural resources, such as land and water, on which the poor depend. In remote areas, the demands of mining operations on infrastructure services, for example, may put those services beyond the reach of the poor, either because their prices have become prohibitively high or because of simple usage limits. Overall, mining also can drive regional price levels to a point that leaves the poor unable to afford basic goods and services
- 3) **Barriers to economic restructuring and mine closure.** Large losses by state-owned mining industries have been a significant barrier to economic restructuring and recovery, for example in the coal mining industries in Eastern Europe and the former Soviet Union. Closure of unprofitable mines has added to poverty, especially in mono-industry communities and mineral-dependent regions. In addition to the loss of jobs among the local population, essential public goods and services originally provided by the mining company—transport, energy, and water, for example—ceased to be delivered, with particularly harmful effects on the poor and other vulnerable groups. Mine closures have also affected countries such as Zambia, Bolivia, Peru, Namibia, and the Philippines.

Maximizing the benefits of mining for poverty reduction

Countries can take the following steps to obtain the greatest benefits from mining for poverty reduction (details on maximizing benefits to the poor are given in section 25.4 below).

Collect data and information on the poverty-related impacts of the mining sector and the associated opportunities and risks. This needs to be done by all countries with commercial-scale, artisanal, and small-scale mining. Some countries, such as Chile, Brazil, Mexico, and Peru, have very good data on their mining industries. For these countries the data are often comprehensive from a technical and financial standpoint but may not reflect environmental and social impacts. Any such gaps should be identified and addressed.

Other countries with an established mining industry often do not have good data on the industry and its impacts, or the data exist but are held tightly by the industry and not made available to decision-makers and affected communities. This is often the case in countries of Eastern Europe and the former Soviet Union. For such countries, reforms are needed both to ensure that there is a fully comprehensive database and that it is available to all branches of government and other appropriate parties on an unrestricted basis. There are also many smaller countries that are unfamiliar with the mining sector and, therefore, are poorly prepared when development takes place. Lack of geological data, however, can inhibit private investment in a country’s mining sector, and thus prevent developing opportunities for growth and poverty reduction.

For countries that do not have good data on the technical characteristics, geological resources, and fiscal, economic, social, and environmental impacts of the mining industry, it will be important to collect and organize accurate data for commercial-scale as well as for artisanal or small-scale mining. Data can include macroeconomic information regarding mining (GDP contribution, exports, taxes, and similar issues), geological and technical data related to mining regions and specific operations, economic and financial data regarding specific operations, employment and environmental data, as well as information regarding social and environmental impacts, throughout the mining operation’s full life cycle. This

includes mine closure and post-mine closure, since it is the poor who bear the brunt of any negative legacy that might be left behind (see section 25.3).

Consultations. Many socioeconomic and environmental issues with a potentially strong impact on the poor can be unknown to administrative authorities and the mining company alike. Well-designed consultation processes are an effective measure for understanding these impacts, both for the company and for the government. Topics for this can be health (risks regarding communicable diseases as a consequence of particular migratory patterns), environment (specific local conditions that affect the handling of hazardous materials, including weather conditions), and local patterns of opportunity and income (location of farming, fishery, and hunting areas). By *not* insisting on incorporation of the voices of the poor in the mine's plans and activities, governments are forgoing the opportunity to substantially increase the services and infrastructure available to the poor. At the same time, they risk introducing mining activities that may cause harm to the most vulnerable groups in the society.

Establish clear objectives and a sound policy environment. This involves the following six steps:

1. Establish clear objectives for the mining sector with a mining policy paper, approved by the cabinet, that provides the framework for developing sound mineral legislation and sound macroeconomic policies. The objectives must take into consideration the minerals sector, effective measures to attract private investors, early planning for mine closures, and effective mitigation of economic, environmental, and sociocultural risks.
2. Establish a sound mineral regulation and licensing system for large-scale mining. This involves ensuring uniform and transparent treatment of investors, with ease of entry and responsible exit; sound tax and fiscal policy; and avoidance of subsidized, state-owned mining enterprises (SOEs), or, if they already exist, the privatization of SOEs.
3. Ensure sound macroeconomic policies so that mineral-rich countries benefit from the developmental impact that mining can have instead of experiencing obstructed nonmining sectors, wasted opportunities, and increased poverty.
4. Attract responsible private sector investment and encourage private sector development through appropriate laws and regulations. Within reliable regulatory frameworks, substantial potential exists for developing downstream and lateral economic activity for suppliers and refiners, particularly for small- and medium-size enterprises. This, in turn, generates employment opportunities for nonminers in the surrounding area.
5. Encourage early planning for mine closure by requiring a conceptual closure plan before mining begins, supporting the buildup of local administrative and management capacity, and designing and implementing appropriate regulation and oversight for mine closure and post-closure monitoring and supervision.
6. Mitigate economic, environmental, and sociocultural risks, including specific attention to poverty-related impacts. This involves establishing a regulatory regime for environmentally and socially sustainable mining; addressing questions of ownership; land; water use; social and environmental standards; procedures for public consultation and information; occupational health and safety standards; and ensuring that responsibilities are clarified, implementation is monitored, and information and education are provided.

On the basis of the three points above (collect data, consult, establish objectives and policy) policy-makers can prepare and present the mining section of their PRSP. In doing so, governments can take a proactive role in facilitating partnerships between mining companies and mining communities and NGOs, in particular, where this can empower communities to actively participate in the monitoring of social and environmental impacts. This can also contribute to mitigating unintended negative effects on nonminers' income-generation opportunities. Where mining companies are to invest in mining communities it is important to establish a public-private partnership arrangement that makes use of the mining companies' abilities to invest while not taking over government's role in providing these services.

25.2 Mining and Poverty Reduction: Key Linkages

This section explores the linkages between mining operations and the four dimensions of poverty—economic opportunity, capability, security, and empowerment—in the context of two generically different forms of mining: (1) large-scale mining and (2) artisanal and small-scale mining. The opportunities and the risks begin at the exploration stage and continue through mine construction, operation, closure, or cessation of mining activity, as well as during post-closure years. The linkages between large- and small-scale mining and poverty are summarized in figures 25.1 and 25.2. The chapters pertaining to macroeconomic, environment, water, health, transport, private sector development, energy issues, and participation provide detailed information and recommendations in each of those areas.

25.2.1 Mining and economic opportunities

Large-scale mining: Positive impact on opportunities

At the national level, fiscal income generated through taxes collected from the mining operation—for some countries a substantial part of the government’s revenue base—can be used for means-tested or otherwise targeted policy interventions for poverty reduction. Tax receipts from a single mining company can amount to 30–50 percent of a country’s fiscal income.

However, this potential may not always be used as efficiently as possible, particularly if governance is poor, corruption issues are prevalent, or in cases of state ownership or control of the mining operation. The reform and privatization of state-owned mining companies is therefore often the first step toward realizing the potential for a positive fiscal impact by substantially increasing efficiency in operation and management as well as in accountability. When governments choose to get out of the business of running mines, there are significant and positive budgetary implications: the reduction or abolition of subsidies for the mining sector can free substantive resources that then become available for focused poverty reduction interventions; taxes and royalties from privatized mining operations tend to be higher than those from state-owned or quasi-state-owned firms; and privatization of previously state-run mining operations often opens the sector for further exploration activities by the private sector, which in turn will contribute to economic growth and increased fiscal income.

At the regional and local level, any large-scale mining operation has the potential to significantly and positively affect economic opportunities for the poor. In the region where the mining operation is located, it can provide substantial additional employment opportunities, with higher income-generation potential than most, if not all, other employment in the area. It can also stimulate investments in basic public infrastructure, goods, and services with universal access, such as transport, water, and power. Aside from a mining operation’s direct employment effect, it may present the potential for developing substantial downstream and lateral economic activity with suppliers and refiners, particularly for small- and medium-size enterprises, which in turn will generate employment opportunities for nonminers in the surrounding area. Studies have found that every dollar spent by a mine on operations generates an average of 2.8 dollars in the local economy in terms of induced economic activities (Remy and McMahon 2002).

A successful mining operation can also be a catalyst for further private sector investment in a country or region if the mining takes place within a supportive policy context characterized by reliable regulatory frameworks. After an economic or political crisis, the natural resource sector is often the first to attract foreign investors’ attention because of its potential for foreign-currency-denominated export earnings and close links to local energy sectors. Other investors tend to closely observe the performance of mining operations as they make decisions about their own risk assessment and consequent investment strategies.

Coal mining can help countries with significant coal resources (for example, China, India, and South Africa) to access cheap energy. This can fuel economic growth and creates further opportunities for those not involved in the mining sector.

Figure 25.1. Linkages between Large-Scale Mining and Poverty

<i>Poverty dimensions</i>	<i>Potential key positive effects</i>	<i>Potential key negative effects</i>
Economic opportunity	<ul style="list-style-type: none"> ⊃ Significant fiscal income and foreign exchange ⊃ Employment generation—directly and indirectly ⊃ Investment in local infrastructure—transport, power, water—as a basis for future economic development ⊃ Private sector development: downstream and lateral business activity—suppliers and refiners (microenterprises) ⊃ If coal mining: source of energy important for economic growth (see chapter 21, “Energy”) 	<ul style="list-style-type: none"> ⊃ Macroeconomy: Dutch disease effect on nonmining sectors with downward shifts in employment and wage levels ⊃ Poor governance of SOEs: Cycle of inefficiencies, subsidies, corruption ⊃ Fewer opportunities for nonmining sectors who compete for use of natural resources (land, water) and infrastructure (transport) ⊃ Potential for corruption: Benefits of mining diverted for personal and political gain, even to military conflict
Capability	<ul style="list-style-type: none"> ⊃ Training and education within the company, with spillover to community ⊃ Training for suppliers (small- and medium-size enterprises) in quality and reliability management ⊃ Investment in local government capacity ⊃ Investment in health and education with universal access 	<ul style="list-style-type: none"> ⊃ Health risks (see “Security,” below) impact negatively on the poor’s capabilities ⊃ Culture of dependency: Government tendency to leave service delivery to mining company, creating a vacuum during mine closure and post-closure periods
Security	<ul style="list-style-type: none"> ⊃ If coal: Lifeline for heating in severe climates (see chapter 21, “Energy”) 	<ul style="list-style-type: none"> ⊃ Environmental risks, and related impact on health, <i>during</i> and <i>after</i> mine operation (tailing and waste management, water, dust, land disturbance) ⊃ Work-related health risks, widespread HIV/AIDS, alcoholism, and related gender issues ⊃ Income security of nonminers at risk, resulting from sharp local price increases following premium incomes for miners, or due to competing use of resources (land and water for agriculture, fishery, and hunting) ⊃ Sudden end of economic opportunities and employment in the context of mine closure ⊃ Threats to indigenous people’s land ownership and use in absence of legal frameworks ⊃ Risks to political stability and peace (use of revenue for political gain, “conflict diamonds”)
Empowerment	<ul style="list-style-type: none"> ⊃ Public consultation and disclosure of information can lead to incorporation of the poor’s needs into the mine’s activities ⊃ Potential for capacity building through consultation; partnerships with NGOs and the mining company 	<ul style="list-style-type: none"> ⊃ Local communities often kept without access to information and denied participation in key decisionmaking processes ⊃ High levels of corruption can further exclude the poor from decisionmaking processes

Large-scale mining:
Linkages to the situation of the poor

Figure 25.2. Linkages between Small-Scale Mining and Poverty

Small-scale mining: Linkages to the situation of the poor

<i>Poverty dimensions</i>	<i>Potential key positive effects</i>	<i>Potential key negative effects</i>
Economic opportunity	<ul style="list-style-type: none"> ⊃ Employment generation ⊃ Potentially higher incomes than from alternative activities ⊃ Can be a source of cash income on a seasonal basis, often very important for women ⊃ Private sector development and related employment: downstream and lateral business activity—suppliers and refiners—microenterprises 	<ul style="list-style-type: none"> ⊃ Some of the poor might find themselves with significantly fewer opportunities for income generation and subsistence than previously as they compete for the use of natural resources (land and water) and infrastructure (transport) with incoming groups of small-scale miners
Capability		<ul style="list-style-type: none"> ⊃ Lack of health care and education facilities for small-scale miners in the context of an unregulated environment ⊃ Significant use of child labor with negative effects on health and education
Security	<ul style="list-style-type: none"> ⊃ If coal: Lifeline for heating in severe climates 	<ul style="list-style-type: none"> ⊃ Work-related health risks as well as widespread increase in infectious diseases (for example, HIV/AIDS), alcoholism, and consequent gender issues. ⊃ Environmental and resulting health risks for miners, their families, and surrounding communities, particularly from water pollution and use ⊃ Risk of losing property and income where mining rights are not regulated or protected ⊃ Invasion of lands of indigenous or tribal people by miners ⊃ Risk of severe cultural conflicts between miners and local or indigenous population ⊃ If diamonds: risk of illegitimate diamond trading to finance regional conflicts
Empowerment		<ul style="list-style-type: none"> ⊃ Often little access for miners and their families to any public decisionmaking process because of absence of local government structures ⊃ Indigenous groups at risk of remaining without access to decisionmaking regarding their land and property rights

Large-scale mining: Negative impact on opportunities

For the poor, mining represents dual risks: that they will be excluded from participating in the economic opportunities it offers and, at the same time, that they will bear many of the costs and risks that result from the introduction of a mine in an undeveloped area. A large-scale mining operation requires major capital investment in infrastructure, technology, services, and employment. The ability of the poor to participate in this investment may be limited by their education and work skills. Even worse, their income-sustaining opportunities and livelihood might be reduced because of the presence of a mine. This can happen in several ways: (a) the mine might use natural resources such as land and water on which the poor may particularly depend for incomes from agriculture, fishing, or hunting; (b) the mining operation might use regional infrastructure services to the extent that the poor will entirely lose access,

either as a result of increased prices of services or due to simple capacity limits (for example, construction of a new mine on an island in Papua New Guinea created an unanticipated, overwhelming demand for ferry and other boat services that effectively excluded the poor from using them and drove up the cost of goods because of rapid increases in ferry and boat prices); (c) higher incomes of mine workers can lead to rising local prices for key goods (food, fuel, land, and housing) and services—with others in the area not only left behind but with significantly reduced real incomes. These risks and ways to alleviate them are discussed in sections 25.2.3 and 25.4.1.

Furthermore, environmental damage incurred during a mining operation, or left behind after mine closure, can range from water pollution or restrained water quantity to tailings and subsidence and can seriously limit people’s current and future income opportunities, particularly when dependent on agriculture, fishery, forestry, or hunting.

Corruption and macroeconomic mismanagement can severely limit the positive impact of mining’s ability to create opportunities at the national level. Countries such as the Democratic Republic of the Congo and Zambia where state ownership and mismanagement have long characterized the sector, have shown little overall development benefit from the copper production of the past decades. Large state mining industries can become a state within a state, which tends to result in operational inefficiencies, lost income for the state, and large subsidies to these state-owned entities that come at the expense of investments in other sectors. The income of state mining companies can be diverted for personal gain by political leaders or provide “off balance sheet” financing for political campaigns or military expenditures (see sections 25.2.3 and 25.4.1).

Other sectors in the economy might be impeded in their development in a situation in which large mining investments lead to a positive shock (boom), with consequent Dutch disease effects on the nonmining economy endangering the promotion of other sectors. Production, employment, and wage levels in these other sectors (agriculture, for instance) would contract, and those least able to move to the growing, mining-related sectors would be affected most adversely.

Artisanal and small-scale mining

Small-scale and artisanal mining can be important sources of employment and income for workers, families, and communities. The income they generate can be substantial and critical for further economic development, giving rise to the growth of microeconomic enterprises that supply miners and their families. In some cases, artisanal mining has been well established for many decades, taking place in an orderly manner, and providing reliable cash incomes. However, more often than not, small-scale mining is a default option chosen as a direct result of economic contraction in other sectors or geographic areas. In that case, miners and their families often expose themselves to harsh working conditions for minimal income in a high-risk context, endangering their health and often the surrounding environment. The local structure of small-scale mining activities determines whether poverty among miners and their families is drastic enough to require outside intervention or whether mining is an activity that makes them better-off economically than other community members. The following discusses these local structures:

- ***Permanent artisanal and small-scale mining.*** Many small-scale miners are involved in the activity year round for most of their productive careers. Sometimes they spend all of their lives working in the same region; other times they move to other areas as new opportunities arise—at times giving the appearance of gold rush miners. While it is difficult to categorize these miners, they often have substantially higher incomes than they would in other activities. In such cases, they can use their above-subsistence incomes for entrepreneurial development and for the education of their children. In Indonesia, for example, artisanal and small-scale mining is, in many areas, very well established and mining incomes are reported to be many times higher than in the miners’ previous occupations; there are even strong multiplier effects to the rest of the area. Communities interviewed during the course of a recent study (McMahon and others 2000) affirm that the increased incomes they received as a direct and indirect result of the mining more than compensated for the problems associated with the activities.
- ***Seasonal artisanal and small-scale mining.*** This type of mining work can be a regular, often lifelong source of income. Agricultural labor moves to the mining areas during the off-season,

generally to mine relatively high-value minerals, notably gold and precious stones. This practice is common in, among other regions, the Sahel countries of West Africa. In addition to the incomes directly generated, this type of mining may lead to significant entrepreneurial development among the miners, traders, and shops that supply the mining communities. The resulting savings generated by those who earn above-subsistence incomes can be an important source of funds for developing other businesses. For example, in East Kalimantan, Indonesia, with the abatement of the timber boom in the late 1960s, the majority of Dayaks in the Middle Mahakam area alternated their incomes by mining the river beds and turning to agriculture during the time of the rice planting season. When gold prices dropped, they would work full time on agriculture, but during periods of drought or harvest failure, they would once again go down to the rivers to supplement their incomes.

- ⊃ *Poverty-driven mining.* This type of mining is practiced by a largely itinerant, poorly educated populace with few employment alternatives, typically as a consequence of recent loss of employment in other sectors or other regions. In South Africa, for example, the droughts in 1973–74 and 1984–85 destroyed many farmers' crops and drove large numbers of the rural population into the small-scale mining sector as a source of survival. In Bolivia, the collapse of the tin industry in the 1980s drove many workers out of the commercial industry into artisanal and small-scale tin mining. However, the small-scale mining sector's actual economic potential is lost most often as a result of (a) the absence of a legal or fiscal framework; (b) rudimentary production and processing techniques (unprotected handling of mercury in small-scale gold mining) that also cause serious health risks for miners and their families; and (c) the weak position of the typically poorly educated small-scale miner in purchase, sales, and marketing, resulting in extremely low pay and income. Many of the individuals in this sector have no other choice, and miners remain trapped in a low-revenue cycle. Since few of these miners pursue their activities with a long-term view, the mining methods employed often cause grievous environmental damage.
- ⊃ *"Gold rush" mining.* This type of mining often leads to a short-term concentration of small-scale and artisanal miners, consisting of both those normally operating in the sector and those temporarily leaving their regions and traditional occupations, such as farming and microeconomic entrepreneurial activities. Examples include gold rushes in Brazil, the Philippines, and Papua New Guinea. This concentration happens when mining promises, often falsely, to be far more lucrative than anything else in which people are currently engaged. As in poverty-driven mining, the lack of a long-term perspective frequently leads to the application of mining methods that cause serious environmental damage.

While some small-scale miners might enjoy new and significantly enhanced opportunities, their usage of natural resources and land has a potential direct and negative impact on indigenous people's opportunities. After the discovery of a mining prospect, the transitory nature of much small-scale mining may lead to a tendency by "outside" ethnic groups to simply "occupy" lands and water systems that traditionally belong to indigenous people. When this occurs, serious conflicts can arise that border on cultural warfare, as has happened, for example, in the Amazon region.

25.2.2 Mining and capabilities

Large-scale mining

Any large-scale mining operation has the potential to significantly and positively increase the capabilities of the poor as a group in the region where the mining operation is located. In the medium term, training provided for miners and other skilled employees is likely to have positive spillover effects on the surrounding workforce and community. Mining companies may also provide training for small enterprises that supply them with goods and services, bringing them up to international standards in terms of quality and reliability. In the course of granting exploration and mining rights, a government may negotiate agreements with the mining firm for public-private partnerships through which these and other goods and services can be provided. They can take the form of (a) investment in education and health, often provided initially for the mine's employees but then extended to the general public; (b) investment in local government capacity (planning for and management of services of mutual interest);

(c) investment in other community-related services or activities with universal access, best accomplished in conjunction with the local authority. However, in some cases company-led investments can have the negative effect that these investments actually replace government financing of basic services in the mining region and give an excuse for neglect by the central government. This may be an unintended consequence of well-intentioned and well-planned community development programs, but it needs to be monitored closely by responsible authorities as well as by the mining company.

Notwithstanding a mining operation's potential to positively increase the capabilities of the poor as a group, mining operations can negatively affect the poor's capabilities, as they entail risks to people's health and the environment (see sections 25.2.3 and 25.4.1).

Artisanal and small-scale mining

The permanent and seasonal types of artisanal and small-scale mining generally involve stable communities in which mining makes a positive contribution. In regions with long-established small-scale mining communities, the provision and private financing of primary health care and education are more feasible than otherwise, given the higher incomes and denser populations that these activities often bring. In the case of poverty-driven and gold rush artisanal and small-scale mining, however, public or private services rarely exist that would provide essential health care and education to small-scale miners, many of whom are women and children. Often such services do not even exist if they are fairly well developed in other areas of the country. Because of the often erratic nature of small-scale mining, local governance structures and financial systems needed to provide such services are not created before miners gather in particular areas to exploit the natural resources discovered. Within months, previously uninhabited areas can be populated by 50,000 to 100,000 miners and their families, without any water, transport, education, or health services. Typically, regional authorities are neither able nor feel they have the mandate to intervene in developments that are largely uncontrolled and difficult to monitor.

Small-scale mining more often than not involves significant numbers of women and children. Aside from the individual health risks that exist for all small-scale miners, exposure of women and children to these risks can have a significant negative impact on the capability profiles of poor communities at large, especially with regard to the women's reproductive health and the children's development.

25.2.3 Mining and security

Large-scale mining

Large-scale mining can contribute through higher incomes to improved nutrition, education, and health care in a community. However, a mining operation can also expose the local population, particularly the poor, to serious health risks and pose a threat to the natural environment as well as to local communities' stability of employment, income, and purchasing power. These risks, discussed below, are key areas of consideration for governments drawing up regulatory frameworks and social or environmental standards for mining investments.

Health and safety risks. Individual health risks of large-scale mining include work-related injuries, increased exposure to infectious diseases, and environmental hazards. The number of injuries and fatalities in mining varies greatly among countries, mostly depending on mining methods and technologies used and whether minerals are mined in open pits or underground. The level of other work-related health risks, such as respiratory diseases, may depend on what mineral resource is mined (coal versus metals). Investment in occupational safety technologies is often as much a result of government regulation as it is of trade union influence (see section 25.2.4). Health and safety issues can also arise beyond the mine, for example as a result of increased heavy vehicle traffic on roads built right through local communities. Risks extend to mineral processing facilities, ports, and transport routes that may run hundreds of miles from the site of a mine itself; thus, any accidents may be the shared responsibility of transport and mining companies. Furthermore, miners often are migrant workers, which means they live without their families and within disrupted social contexts often associated with a high prevalence of HIV/AIDS and other communicable diseases. Such negative health impacts from mining tend to affect women in particular because of their responsibilities, within the extended families, of caring for children

and the sick, elderly, or disabled. Moreover, higher incomes and the increased availability of alcohol may increase the potential for violence against women.

Environmental damage *during* a mining operation can lead to further health risks that may be caused by a variety of effects, including water pollution, reduced water quantity, waste dumps, tailings, impoundments, dust, noise, and subsidence. Environmental and health standards may not have been agreed on at the beginning of a mining operation, or they may not be easily monitored. Mine *closure* has its own consequences, as abandoned or orphaned mines can cause ongoing pollution that remains a danger to public health. Lack of preparation for mine closure at the time of a mining operation almost certainly increases negative effects on local environments and regional economies and affects both government budgets (cost of cleanup) and societal stability.

Risks to employment, income, and purchasing power. The positive economic development that often follows the establishment of a mining operation can also have negative effects on consumption levels of the poor. Higher incomes of mine workers, especially in relatively isolated areas, can lead to rising local prices for key products (food, fuel, transport), with the poor left behind. Mining can use significant amounts of land and water, which can affect the poor who depend on these resources for their livelihood and food. For example, in Irian Jaya, Indonesia, the indigenous Amungme people eventually filed a lawsuit against the mining company that sought, among other things, compensation for damage to native lands. In western Australia, for many years the aboriginal people did not share equitably with other groups in the benefits from the iron ore mining industries, nor did they feel they were adequately involved in decisions affecting their traditional lands, culture, and heritage. Steps taken to correct the situation included the establishment of an Aboriginal Training and Liaison Unit as a means of increasing aboriginal participation in the industry and supporting their traditions and culture through consultation and cooperation.

The sudden end of economic opportunities that results from an unanticipated mine closure tends to dramatically increase local poverty levels. In the late 1990s in Namibia, some foreign mining investors closed their operations and withdrew without notice, leaving the government and the local communities unprepared for the mine closure. In addition to the loss of employment and income, sudden mine closure can deprive the local population of the most basic social services and access to public goods, such as clean water, energy, or transport, if these services had been provided previously by the mining company. Lack of these services and goods affects vulnerable groups more drastically than others. The often remote location of mining operations increases the challenges for encouraging sustainable local economic development, with government resources typically hard to free up for these areas. The problematic social and environmental legacies left behind by mining operations can compromise the economic benefits they once yielded.

Risks to sociocultural stability. One of the significant effects of large-scale mining on the local community is a rapid change in the economic and social fabric of society. As disparities in income emerge, the lure of new opportunities creates in-migration. Different groups compete for access to public goods and social services and new tensions in the community abound. New types of poverty are created, with a mixture of original residents who have been unable to share in employment opportunities and newcomers who have migrated in the hope of finding employment but have been unsuccessful in doing so. Social ills such as alcohol abuse, prostitution, and child labor often increase.

Risks to political stability and peace. The wealth created by mining can lead to competition for the control of mineral resources, which some may want to use to finance political or military conflicts. “Conflict diamonds” are a prime example. They have helped to fuel civil wars in countries such as Sierra Leone and the Democratic Republic of the Congo and are used to finance ongoing military conflicts in countries such as Angola. Political stability, democracy, transparent revenue management processes, and a transparent legal regime for mineral rights and for appropriate revenue sharing can help avert such conflicts.

Small-scale mining

Health and safety risks. Depending on the situation, the benefits from small-scale mining can be overshadowed by its negative repercussions, primarily affecting the poor by exposing them to risks they experience as individuals and as part of the group. Individual risks from small-scale mining mostly relate

to health and property issues, work-related injuries, and the increased spread of communicable diseases in addition to the loss of land to groups of small-scale miners. In Latin America, for instance, the location of small-scale artisanal mining and the incidence of infectious disease appear to be highly correlated. In Zimbabwe there is a disproportionately higher number of deaths in mining, mainly caused by small-scale miners entering gold mines illegally to win gold from pillars and from alluvial miners burrowing into uncompacted river beds.

Environmental risks. Risks to groups mostly stem from environmental damage and sociocultural conflicts. Miners who lack a long-term perspective in relation to their small-scale mining activities pay little or no attention to environmental concerns. Water pollution is often widespread; it is the product of causes as varied as the dumping of waste mercury used in processing in waterways to heavy siltation caused by riverbed mining and dredging. This damage can have health and economic effects on the surrounding communities.

Risks to income and property. In particular, indigenous groups view small-scale miners as the group bringing environmental degradation and disease to previously balanced regions, competing for the use of, and simultaneously endangering, the very natural resources that provide their livelihood through agriculture, fishing, and hunting. Furthermore, in an unregulated environment indigenous people and small-scale miners risk losing their property and future revenue: where there is no system of establishing secure land tenure rights, both groups are exposed to all types of criminal or otherwise corrupt behavior that endangers their livelihood as well as their ability to benefit financially from their personal investment in using the land, be it for mining or other uses.

Risks to political stability and peace. As with large-scale mining, the revenue of small-scale mining can also finance local conflicts.

25.2.4 Mining and empowerment

Large-scale mining

Participatory rights of local communities. Local communities often find themselves disempowered during decisionmaking processes regarding mining operations concerning the land and resources that sustain them or to which they are otherwise connected. They are left without appropriate access to information and denied, implicitly or explicitly, participation in these decisionmaking processes. In many instances local communities hear about the acquisition of a mining license only after the fact, and subsequently often find themselves dependent on the goodwill of individual mining company officials, trying to understand the meaning of key documents frequently prepared in a technical language that far exceeds any layman's comprehension. Mining companies do not always have the skills, or the necessary persistence, to organize and sustain inclusive, well-managed, and trustworthy consultation processes. Although most governments now require some form of consultation with local communities, there is typically little guidance in terms of quality and level of the processes or the staffing of key liaison personnel. Such situations are exacerbated in the case of actual accidents or conflicts as tensions and fear on both sides lead to a de facto breakdown of communication, with national or international arbitration institutions unavailable.³ Even within an ideal regulatory framework, compliance with consultation and disclosure regulations requires regular monitoring. Yet governments who could play a key role in ensuring compliance are not always trusted by local communities, as the abundance of financial flows from mining, real or imagined, can create conflicts of interest as well as opportunities for corruption at the national, regional, and local levels. This, in turn, can decrease the poor's access to transparent and effective public decisionmaking processes.

Sustained efforts toward public consultation and disclosure of information at the onset of mining activities, during operation, and both prior to and following mine closure have been shown to effectively facilitate positive interactions between a mining company and the communities affected by its operation. Occupational health and safety and related issues are typically at the center of a long-established practice of mining companies to consult with trade unions, over and above typically regular wage negotiations. Large mining companies are also beginning to make it a part of their regular practice to consult the public about their upcoming and ongoing investment, and governments are incorporating related requirements

into their legal and regulatory frameworks (see section 25.3.2). Careful design of consultation processes is particularly critical if the mining operation involves issues that affect the poor's ability to participate in the choice and implementation of public actions in managing risks and opportunities from the mining operation. These issues include the following:

- ⊃ relocation and in-migration, with consequent changes in demography and settlement patterns, particularly where indigenous people are involved;
- ⊃ change and disorder in the existing social structures, hierarchy, and leadership, possibly due to a breakdown in traditional systems of rules and authority in which elders may no longer be considered by their communities to have the skills and education necessary to represent the changing needs of their constituencies;
- ⊃ weaknesses in the formal government systems and structures to deal with the changing social and economic situation, particularly where sudden increases in fiscal revenue have fostered opportunities for corruption and other governance malfunctions;
- ⊃ conflict and civil strife over the use and distribution of water and land resources, and access to infrastructure;
- ⊃ significant differences between international standards and legal and regulatory requirements in the country, especially with regard to environmental and labor issues (health and safety, trade union and freedom of organization, and so forth); and
- ⊃ changes in the existing value systems from traditional or customary systems of ownership to those of monetary transfers (land-use systems and natural resource utilization, whether terrestrial or aquatic).

Because of the typically remote location of mining operations, it may be the first time that local authorities and communities are involved in systematic processes of consultation. Here, knowledge transfer and local capacity building can be beneficial side effects for groups that are otherwise marginalized.

Corruption puts access to decisionmaking at risk. Mining involves the creation of economic resources and power; both can result in significant opportunities for corruption at the national and the local levels, disempowering the poor and those within the local communities who are outside the cycle of corruption. Mining companies are affected as officials require payoffs to release inputs for mining or to expedite local clearances for mining activities. Corruption that has penetrated public decisionmaking, government control, and monitoring functions, which in principle exist to protect and support local mining communities, can produce particularly disastrous consequences for these communities and, especially, for their poorest and most vulnerable members.

Small-scale mining

Local governance structures and institutions are typically underdeveloped or nonexistent in areas or regions with substantial small-scale mining, leaving miners and their families largely on their own with little opportunity to join in collective efforts to improve their situation. Cooperatives are often the only means for small-scale miners to improve their situation and to manage and reduce environmental, social, and cultural risks, or to improve their access to technologies or marketing structures that could enhance their economic opportunities.

Issues of empowerment also arise for indigenous populations that live in the area. When small-scale miners make increasing claims on their land, indigenous populations may find their culture and their livelihood endangered. These groups typically have little or no access to or experience in dealing with institutions or administrative structures that would enable them to participate in decisionmaking about the use of land and the protection of their rights.

25.3 Poverty Diagnostics for Managing Opportunities and Risks from Mining

Most countries with a mining sector will already have information relevant to a good understanding of the industry and its fiscal, economic, social, and environmental impacts. Mining ministries and agencies

often collect and organize relevant data for commercial-scale and artisanal or small-scale mining, such as size, location, production, revenue, investments, employment, exports, imports, sources of local supplies, and financial performance. It is important to note that a lack of geological data can inhibit private sector investments in a country's mining sector and thus prevent appropriate use of existing resources for economic development.

To formulate a mining strategy for a PRSP, available information would need to be organized from a poverty perspective, with a particular focus on vulnerable groups and their risks and opportunities in the context of mining. In particular, monitoring of the social and environmental impacts in communities and regions affected by mining or by mine closure may need to begin systematically. General poverty-related information to be provided would focus on (a) levels and trends in employment shares (large-scale versus small-scale mining, women, children); (b) levels and trends of poverty profiles, particularly in the mining regions; and (c) levels and trends in general health, education, and infrastructure indicators in the mining regions.

A typical diagnostic study may take up to six months and involve, at a minimum, the input of an economist, an engineer, an environmental or agricultural specialist, a lawyer, and a sociologist or anthropologist. While all sections outlined below are important for a good understanding of the mining sector impact on poverty, key sections for a successful diagnostic study have been marked "priority" with an arrow.

25.3.1 Large-scale mining

This section looks at diagnostics needed across multiple dimensions of poverty. The types of information needed to inform policy design are summarized in figure 25.3.

Figure 25.3. Key Information Needed to Design Policy Interventions for Large-Scale Mining

<i>Key aspects</i>	<i>Questions to be asked</i>
Economic opportunity	<ul style="list-style-type: none"> ➤ Are the income and cost of mining operations fully disentangled, properly measured, and understood? ➤ Is macroeconomic management sound? ➤ Are SOEs operating on a fully commercial and nonsubsidized basis? Are financial flows from the SOE to the government transparent and disclosed? ➤ Does the government have agreements with mining firms to support local and regional economic development? ➤ Has downstream or lateral economic activity developed around mining operations? ➤ Does a legal and regulatory environment exist that can attract private sector investment and development? Are mining rights and obligations clear, quantifiable, and secure? Are marketing and foreign exchange freedoms and fiscal structures competitive? ➤ Are processes for collection, management, and distribution of tax revenue from mining fully transparent and understood? What share of revenue is directed to the national, regional, or local levels? Do local government institutions have the capacity to manage revenues?
Capability	<ul style="list-style-type: none"> ➤ Are there any partnership arrangements with the mining company that result in investments in education and health with universal access? ➤ Is company-provided training designed such that capabilities are transferred to workers and their communities? ➤ Are resources and capabilities in place to continue social services and education in case of mine closure?
Security	<ul style="list-style-type: none"> ➤ What are the results of the direct environmental impact assessment? What do local communities have to say about the results? ➤ Are safeguards adequate, respected, and monitorable? Are safeguards used in order to market the sector internationally (reduction in risk, greater operational ease)? ➤ Is there a closure plan? Are resources adequate and responsibilities defined? What about abandoned sites? ➤ What are arrangements for post-closure monitoring, site stability, and environmental protection from any potential problems such as acid rock drainage? ➤ What is the dependency profile of the region? What are the risks for a collapsing local economy resulting from mine closure? ➤ Is regional development planning appropriate? ➤ Which labor market interventions are needed? What about vulnerable groups?
Empowerment	<ul style="list-style-type: none"> ➤ Are consultation and disclosure policies adequate, implemented, and respected? Is compliance monitored? ➤ Are all relevant stakeholders included? Do they have access to the information provided, in terms of language and analytical or presentational detail? ➤ Is there support for partnership organizations or arrangements that can support and empower the poor?

Economic opportunity

PRIORITY

- 3) **Fiscal impact.** While the fiscal impact from large-scale mining at the local, regional, and national levels can be substantial, especially in smaller economies, the measures for quantifying the impact often are not well understood. Governments need to be aware of the *net* impact, that is, costs, as well as direct revenue. This requires disentangling an often complex web of government and quasi-government provisions and special investments or exemptions. In the case of countries with state mining industries, it is especially important to identify any hidden subsidies, such as unpaid taxes or trade protection. It is also important to understand where, within a system of national and subnational governments, the revenue is directed. Questions that require particular attention include measures to manage volatility of income streams from mining, systems for ensuring that investment decisions are taken in a rational and transparent manner, and the extent to which fiscal revenue benefits the mining region directly, the extent to which benefits accrue to the poor and, if the impact on the poor is negligible, the reasons for this.
- 3) **Macroeconomic impact.** Is the impact of the mining sector's growth on the overall economy adequately managed and monitored? Are potential negative repercussions on other sectors managed, monitored, and addressed?

PRIORITY

- 3) **Legal and regulatory framework for the private sector.** To understand whether laws and regulations in a given country are designed to attract investment in mining and to maximize benefits from mining while minimizing risks, a number of areas need to be examined: Is the constitutional and statutory basis for private mining rights and obligations clearly defined and based on transparent rules? Is private sector access to mining rights granted? Are mining titles secure? How should statutory maintenance obligations be quantified? Are marketing and foreign exchange freedoms competitive and stable? Additional questions include the following: Does the existence of SOEs provide an obstacle to private investment as they may hold exploration rights or be subsidized? What, if any, are the legal or regulatory restrictions that impede investments? Which regulatory reforms or legal initiatives could most increase the country's attractiveness for the private sector? Are there international financial institutions or other organizations that can be partners in promoting the mining sector internationally? What lessons learned in attracting and dealing with private sector investors in mining can be transferred to other sectors or investors?
- 3) **Governance.** Are SOEs managed in a fully commercial, arm's length manner and subject to unrestricted competition from the private sector? Are opportunities for privatization explored and implemented? Are the earnings, as well as income flows to the government, appropriately documented, fully transparent, and disclosed?
- 3) **Local and regional economic impact.** Governments should investigate opportunities for arrangements with mining companies that can be mutually beneficial, particularly for local and regional economic development. This may include agreements about royalties, landowner and government compensation, employment priorities for local and national workers, infrastructure, and social service commitments, including tax credit schemes. What initiatives by mining companies that would generate direct opportunities for the poor could be encouraged or supported? In this context, the net employment impact would need to be estimated by taking into account whether large-scale mining enterprises have possibly destroyed jobs in the small-scale mining sector or elsewhere. Has substantial lateral or downstream economic activity developed? If not, why?

Capabilities

PRIORITY

- 3) **Direct impacts on the poor.** What initiatives by mining companies that benefit the capabilities of the poor directly could be encouraged or supported by governments? What would benefit the quality of life of the poor as well as of employees of the mining operation? Issues addressed would relate not only to health services, education, and infrastructure, but should also include local business development.

- **Training and education.** Do mining companies have training programs designed to transfer capabilities not only to workers but also to others in the communities?
- **Local government capacity.** Does the local government have the necessary finances and capacity to deliver needed services (especially in health and education)? Is there scope for public–private partnerships that could enhance local government capabilities? Is a culture of dependency developing or has it already developed?

Security

PRIORITY

- **Adequacy of environmental laws, regulations, policies, and relevant institutions.** When examining or redesigning laws, regulations, direct agreements with mining companies, and proactive policy interventions regarding environmental social issues, six types of direct environmental impacts need to be taken into account. These cover the entire cycle of a mining project (exploration, construction, operation, closure, and postmine closure): (1) land and water use; (2) waste management; (3) chemicals and pollutants; (4) tailings disposal; (5) air pollution; and (6) noise control and abatement. These impacts need to be addressed and managed in terms of potential human health and environmental risks along with the plans and actions necessary to mitigate these risks. If mining companies have agreed to follow voluntary codes of practice and management systems, do these have international acceptance? Do they go beyond legal requirements? If so, are there any enforcement mechanisms built into the voluntary agreement? Can the different types of safeguards (laws, regulations, policy interventions, voluntary agreements) be considered adequate, respected, and implemented, and can they be monitored? Is there independent monitoring by third parties or participatory monitoring with representatives of local communities? Can safeguard mechanisms, once established, be leveraged in a program of marketing the sector to potential investors and appealing to their interest in, for example, reduced investment risks and greater operational ease? If the system of laws and regulations is found to be inadequate, is a *process* for establishing such a system chosen that would balance national and regional priorities and circumstances with the need to ensure international best practice? (See also Weber-Fahr and others 2002.)

PRIORITY

- **Environmental aspects of mine closure.** Are environmental responsibilities defined for orphaned sites and for decontamination of the land? What is the definition of closure, reclamation, and cleanup? What is the definition of rehabilitation; for example, returning disturbed land to a predevelopment state or alternative uses of the land? What agreements can be reached on the use of land after mine closure, particularly for land rehabilitation? Are post-mine safety issues, such as tailings spills, addressed adequately in the mine closure plan? What are the arrangements for post-closure monitoring, site stability, and environmental protection?

PRIORITY

- **Dependency increases risks from mine closure.** What would be or are the impacts of mine closure on the poor? What share of local and regional economic activity depends on mining, directly or indirectly? Are there any industries or sectors with growth potential that do not depend on mining? What public goods or services are being provided for or maintained by the mining company? What are the opportunities for infrastructure built especially for the mine to become an engine of growth for future development? How can maintenance and operation of this infrastructure be sustained after mine closure? Are local and regional governments prepared for the transfer of certain public services and goods?
- **Health and human development risks.** Are workplace health and safety risks properly managed by the company? Are there any significant community-related health risks (HIV/AIDS, for instance) that need greater government attention or give scope for public–private partnerships?
- **Risks from sudden mine closure.** These can be assessed at the outset and during a mining operation by analyzing existing or negotiated mine closure plans, the structure of the local economy, and the capacity of local administration (see also Sheldon and others 2002). Good examples for early closure planning are the Rossing Mine (uranium) in Namibia, the Misima Mines (gold) in Papua New Guinea, and Kelian Equatorial Mining (gold) in Indonesia. Key issues to be taken into account during diagnostics on mine-closure planning include:

- **Timing and structure.** Can a closure plan be made a prerequisite to a mining concession? Are regular reviews and monitoring in place to update and reflect changing circumstances as well as compliance? Are post-closure management and monitoring mechanisms agreed on in advance and currently in place? Can standards and arrangements for mine closure be negotiated with existing mining operations at a later stage?
- **Social and economic aspects.** What social and economic responsibilities continue for the mine operator after mine closure? Are transfer arrangements for socioeconomic infrastructure in place in the event of mine closure? Are adequate resources committed by the mining company to ensure this process takes place? What different financial mechanisms exist to ensure that these resources are made available? Are other future risks taken into account, such as fluctuations in metal prices that may unexpectedly shorten the life of the mine? If the legal and regulatory systems, as well as the sets of agreements with mining companies, are found to be inadequate to ensure the social and economic sustainability of mining communities, is there any relevant experience from outside the country that could help improve systems and agreements?
- **Development planning to mitigate risks.** Do national, regional, and local authorities include the scenario of mine closure in their development planning? Are provisions established to ensure that benefits generated from mining activities will be used to support development initiatives geared to mine closure?
- **Labor market interventions.** What types of labor market interventions will be needed in the event of mine closure? Early planning can contribute to the sustainability of interventions.

Empowerment

PRIORITY

- **Consultation and cooperation.** Have any consultations about the mining operation, at the beginning of and during the operation, taken place? Is there a public disclosure plan? Which stakeholders should be included in the consultation and information activities? Is the mining company compliant with agreed-on processes, timing, and content for consultation and disclosure? Can the government support the flow of information from the company to the communities concerned? Is information packaged so that local communities can access it and understand the potential implications?

25.3.2 Small-scale mining

Overall, it is important to design interventions appropriate to each situation with regard to the different types of small-scale mining (“permanent,” “seasonal,” “poverty-driven,” or “gold rush” mining). However, the *information* needed for the design of a sector strategy and for related decisionmaking processes applies to all types of mining. Figure 25.4 presents a summary.

Figure 25.4. Key Information Needed to Design Policy for Small-Scale Mining

Key aspects	Questions to be asked
Economic opportunity	<ul style="list-style-type: none"> ➤ Are there alternative income sources? ➤ What is the small-scale miners’ position in the production chain? What share of the value added can they claim for themselves? If the share is disproportionately low, why? ➤ Are ownership rights protected? What is the relationship between indigenous people’s property and small-scale mining? What is the relationship between small-scale mining and large mines? ➤ What is the impact of small-scale mining on the local economy? Has downstream or lateral economic activity developed? If not, why? ➤ Is the legal and regulatory environment adequate, implemented, and respected? Are mining rights and obligations clear, quantifiable, and secure? What about land rights? Is compliance to requirements monitored?
Capability	<ul style="list-style-type: none"> ➤ Are basic health services and education available? Is education or information on health issues available? ➤ Does child labor exist, and to what extent? Do gender issues prevent small-scale miners from benefiting appropriately from their activities?
Security	<ul style="list-style-type: none"> ➤ What types of minerals are mined? What techniques are used (more versus less hazardous)? ➤ How many miners are involved? What is the relation to other local populations and communities? What is the origin of the miners? Are there any cultural or other tensions? ➤ What types of illnesses affect small-scale miners disproportionately, and in what severity? What are the causes of any systematic patterns? ➤ Are environmental laws and regulations adequate, implemented, and respected? Is compliance monitored?

Figure 25.4. Key Information Needed to Design Policy for Small-Scale Mining (continued)**Key aspects****Questions to be asked****Empowerment**

- ⊃ Do informal governance structures exist locally? Are there any well-defined communities? Are there special interest groups; for example, women's groups, regional groups?
- ⊃ What is the potential for supporting community-driven development? Who would be the relevant groups; for example, women, indigenous groups?
- ⊃ Does consultation take place when designing a government intervention? Are all stakeholders included?

Economic opportunity**PRIORITY**

- ⊃ **Supply and marketing methods and channels.** What is the miners' source of supplies? To whom do they sell their output? Are these competitive markets? What is the relative position of the miners in price negotiations for minerals, as well as in negotiations with suppliers of materials needed for mining? Are women particularly disadvantaged when involved in purchases of equipment and materials or in sales and marketing?

PRIORITY

- ⊃ **Structure and application of ownership rights.** Do the miners have legal title to their claims? Can they transfer them and use them as collateral? Are there different laws and regulations for small-scale versus large-scale mining? Does a lack of a legal title inhibit small-scale mining? Do the authorities monitor and implement regulations, particularly for environmental damage and invasion of the properties of other mines? Where there is a lack of government activity, is it due to a lack of will or a lack of funds?
- ⊃ **Alternative income sources of the miners and relative incomes from mining versus these sources.** What other options exist for the miners? Is mining so much more lucrative than other types of work that miners would give it up only if the government used force? Or is mining being taken up only as a last resort by people migrating from other economically contracting sectors or regions?
- ⊃ **Economic impact of the mining activities on local communities.** Do miners buy inputs or consumption items locally? Has there been a large increase in commerce because of mining? Do/can miners invest their savings locally?

Capabilities**PRIORITY**

- ⊃ **Education and health.** What is the local or regional governance functioning in the region of mining activities? Are there any schools and health care facilities? If not, which local or regional government level should be responsible for providing these? What needs to be done in order to encourage the provision of services?
- ⊃ **Human development.** To what extent are women and children involved in mining? Is child labor a problem? Are women benefiting economically from the mining activities? Is the system of property rights preventing women from benefiting economically? Are pregnant women involved in mining?

Security**PRIORITY**

- ⊃ **Types and severity of major health and occupational health and safety problems related to the mining activities.** Techniques used in mining are dictated by the minerals being mined, as well as the skills and technologies available. Each mineral and associated techniques carries its own implications and health risks (for example, handling of mercury). Universal health risks, including increased incidence of HIV/AIDS or other communicable diseases, are likely to be outcomes of the size of the miner population, the extent to which it is a migrant population, and the availability of critical infrastructure, such as access to clean water.
- ⊃ **Connection to large-scale mining.** What is the extent to which small-scale miners are working on the claims of large mining firms? Is claim invasion a major problem? Are large mining firms and small-scale miners working cooperatively toward solutions? What roles are government agencies and police taking in the matter?

- ⊃ **Types of minerals being mined and the number of miners.** Different minerals have different environmental and marketing implications. The scale of the problem will likely be highly related to the number of miners in a given location and the type of mining techniques being used.
- ⊃ **Excavation and processing techniques used by the miners and the related environmental damage.** As techniques differ, so do their implications for safety and pollution. Are more environmentally friendly technologies available? Are miners using them and, if not, why?
- ⊃ **Origins of different groups in the context of the mining activities.** Where are the home communities of the miners? Do they originate primarily from areas near the mines, or are they migrants from other regions or countries? Are conflicts likely to be the result of regional or cultural diversity among the miners themselves, or between (immigrant) miners and the local population?
- ⊃ **Relationships between groups in the context of the mining activities.** How are the relationships between the miners and local community members? Are there conflicts between different cultural groups? Is there an adversarial relationship between the miners and community members as a consequence of environmental, social, or other socioeconomic problems? Are there serious cultural problems between the miners and indigenous peoples?

Empowerment

- ⊃ **Public consultation.** To what degree are “regular” governance structures absent from the small-scale mining area? To what degree do alternative, informal mechanisms of self-determination and public decision-making exist?
- ⊃ **Community-driven development.** To what extent do community structures exist that have already taken over the provision of certain public goods, such as security and transport? To what extent could these groups be involved in designing cooperative types of interventions? Are there any women’s groups or other special interest groups? What is the profile of cultural and indigenous groups?

25.4 Managing the Impact of Mining for the Poor

25.4.1 Large-scale mining: Safer opportunities for the poor

This section covers policy instruments for managing the impact on poverty of large-scale mining. For a summary, see figure 25.5.

Government: Regulatory frameworks, institutional capacity, and direct intervention

Regulatory frameworks for mining operations are best developed in a collaborative manner, involving governments, the private sector, and civil society. Given the complexity of the consequences of mining on the socioeconomic situation and on the environment, interventions initiated by only one of these three parties are not likely to succeed in the long run.

Attracting investments. Laws and regulations for large-scale mining should aim to promote private sector investment in mining in an economically, socially, and environmentally sustainable manner. Strong competition exists for investment in mineral exploitation; therefore, laws and tax regimes must be internationally competitive to attract such investment while providing proper safeguards for the environment and for social concerns. Reform of mining laws has been shown to lead to a significant increase in investment. Increasingly, mining companies understand the relationship between an appropriate regulatory framework and the mitigation of their own long-term investment risk; indeed, reforming regulations and laws can be actively used for marketing the sector internationally. To ensure acceptance and functioning of laws and regulations on the local level, such a framework must include adequate consultation and inclusion of all stakeholders, including the local communities and the poor.

Distribution of benefits. Many of the major effects of a mining operation, whether beneficial or burdensome, occur at the local level. While the state generally owns minerals, local communities often have a strong sense of ownership or attachment to them or to the land. Many local communities,

Figure 25.5. Policy Instruments for Managing the Impact of Large-Scale Mining on Poverty

<i>Poverty dimensions</i>	<i>Key government actions</i>
Economic opportunity	<ul style="list-style-type: none"> ⊃ Follow sound macroeconomic management. ⊃ Strictly adhere to a noncorrupt code of conduct at national and local levels, including rules on transparency and publication of relevant materials on financial flows. ⊃ Introduce a sound mineral licensing regime. ⊃ Privatize state mining companies. ⊃ Promote private sector development. ⊃ Introduce regional planning that provides a framework for mining development. ⊃ Discuss and build consensus with various levels of government, companies, and communities about the best methods of managing benefits from mining (taxation, local economic development, infrastructure investments, small- and medium-size company development, and so on).
Capability	<ul style="list-style-type: none"> ⊃ Discuss and build consensus with various levels of government, companies, and communities on the best synergies for investments in health, education, and other social development areas of mutual interest. ⊃ Finance and support capacity building for local governments, particularly in the mining region, so as to allow for efficient service delivery and management. ⊃ Encourage public-private partnerships with mining companies, especially where service delivery (transport, water, and energy) would be in the mutual interests of all concerned.
Security	<ul style="list-style-type: none"> ⊃ Introduce a regulatory regime to ensure adequate <ul style="list-style-type: none"> – environmental protection, – disclosure and consultation, – monitoring and enforcement, and – early planning and financing for mine closure and post-closure monitoring and supervision. ⊃ Introduce mechanisms to protect the poor and those not involved in mining from unintended impacts of mining (steep increases in basic food staple prices, loss of access to natural resources needed to sustain livelihoods, and loss of access to basic infrastructure), possibly in partnership with the mining company.
Empowerment	<ul style="list-style-type: none"> ⊃ Ensure rules and regulations regarding consultation and participation are adhered to and implemented in a manner appropriate to the culture of local communities. ⊃ Show particular attention to issues of corruption in designing monitoring mechanisms regarding consultation and participation. ⊃ Introduce partnerships with local communities and NGOs for monitoring and enforcement of relevant rules and regulations.

therefore, believe they should also share in the wealth created by the mine. Investing parts of mining revenue in local communities can be important to broadening the impact of mineral development and to ensuring a constructive relationship with and inclusion of the poor. Revenue can be directed to local communities through cash transfers, equity shares, or other mechanisms. There are various types of revenue flows from mining, not just income taxes but also employee-related taxes, municipal taxes, land-use taxes, royalties, land compensation, and even equity. It is important that there be a framework to determine the split of revenue among the national government, regional government, local government, and community (landholders). One way of ensuring an appropriate split of all these inflows as well as their appropriate use, especially as far as the poor are concerned, is for government to establish a framework whereby “contracts” (involving national government, local government, civil society, and the mining company) regulate the provision of funds (from national government or the mining company to local government or the local community and landowners) and the use of those funds.

Environmental and social safeguards. These can be both prescriptive and nonprescriptive. From a regulatory viewpoint, in addition to general environmental and social legislation, environmental and social regulations specific to the mining sector are needed. These regulations should be designed to cover the different stages of a mining project: exploration, construction, operation, closure of mine operations, and post-closure periods. Although these laws and regulations do not exist in all countries, large companies often follow good international practices and voluntary agreements, described as self-regulatory or co-regulatory. However, governments would want to ensure that enforcement mechanisms are built into these voluntary agreements (see also Weber-Fahr and others 2002).

Regional and local economic development. By incorporating the needs and activities of mining operations into regional planning activities, governments can substantially increase the services and infrastructure available to the poor. Regional and local governments have proven to be the key players in sustaining the benefits brought by a mining operation into a particular location. Major activities to pursue early on include (a) building capacity at the local government and community levels to enable the region and the local community to plan and prepare for closure while avoiding a climate of dependency, (b) integrating mining projects into regional development plans at the earliest opportunity, and (c) planning ahead to sustain and finance social services after mine closure and encouraging local government to eventually take over systems for social protection through, for instance, fiscal decentralization.

Land rights and land titling. Governments have an important role to play in ensuring that land purchased by mining companies is transferred in a legally sound and fair manner. Mining companies' land purchases can take place in a variety of circumstances, mostly depending on whether or not current inhabitants have legal title to their lands, with clear demarcations and rules set for title transfer, and whether land is considered individual property or not. National cadastre agencies might be called upon to find unconventional solutions in areas where land is, by tradition, farmed communally, and communal decisionmaking might need external facilitation. Governments can greatly contribute by facilitating open and fair negotiations about property purchases between individuals and local communities on the one side and companies on the other, in particular in circumstances in which the concept of one-off cash payments might be inappropriate given the specific cultural context.

Preparation for mine closure. Government interventions may include (a) establishing a carefully developed licensing process, requiring an initial closure plan to be prepared as part of the mine design, to be updated regularly throughout the life of the mine; (b) including in mining legislation and regulations the necessary rules and procedures that will help to ensure good closure practices, including requirements for mine operators to progressively put aside the funds needed for sound closure; (c) defining the monitoring period for environmental and social impacts and ensuring that satisfactory monitoring and compliance include the post-closure period; and (d) determining who is ultimately responsible for the site and facilities after closure. (In the case of some mines in North America with severe acid rock drainage problems, companies have been required by environmental authorities to put in place post-closure monitoring and mitigation arrangements for periods as long as 50–100 years.) (Sheldon and others 2002)

Labor market interventions. These may involve (a) provision of retraining opportunities and employment services, (b) stimulation of enterprise development and income-generation opportunities in cooperation with the private sector, and (c) marketing the region to international investors.

Consultation and disclosure. Governments can insist that the mining company use appropriate and timely consultation and disclosure, systematically including the local community in these consultation efforts. The government and civil society groups, including community-based organizations and NGOs, have a crucial role in ensuring the poor are informed and consulted regarding mineral development in their areas so that they can also take a more active role in planning to alleviate poverty and determine their own future. This can include managing expectations of what benefits may come from mining and providing a realistic picture of the negative impacts that may occur. In the best cases, it will involve not only consultation but also participatory decisionmaking regarding key matters that directly impact the community and its poorest members. This will ensure that the poor will benefit from the mining operation while limiting the risks to which particularly vulnerable groups might otherwise be exposed.

Foster partnerships and solve conflicts. Governments can foster partnerships that, in the context of mineral development, provide opportunities for all parties involved, including civil society groups, to help alleviate poverty and address shared needs or concerns. Some possibilities include community-based monitoring of environmental impacts; public–private partnerships and shared responsibility and provision of health services, joint or shared water or electricity services, and extension of mine-related transportation infrastructure to address the needs of the poorest in the community. When conflicts occur, the poor are invariably the losers. Governments can help to prevent or resolve conflicts between the community and the mine or between the richest and poorest members of the community through appropriate sharing of revenue, proper informed consultation, and management of expectations. They can also ensure that the poor get a fair deal when such conflicts are resolved.

Government instruments and frameworks. Government can provide an enabling environment before and during mine operation and before and after mine closure. Governments should assess an existing or proposed mining operation not only based on what it contributes at the national level, but also based on its impact on the socioeconomic well-being and the environment of the communities in the area of its operation, considering whether or not improvements are sustainable in the longer term. Improvements may include areas such as infrastructure, health, education, and the stimulation of the local economy. Given that minerals as a natural resource are nonrenewable, the sustainability of any improvement must be emphasized, including the development of activities *not* depending on mining alongside the mining operations. This will be key to ensuring that people can sustain their livelihood after mine closure.

- ⊃ *On the national level*, the framework and instruments may include (a) a well-articulated and clearly stated government policy for sector development and oversight; (b) capacity building for the regulatory role, including environmental management and safety issues; (c) proper and transparent collection and equally transparent systems for the distribution of fiscal revenue; (d) in the context of licensing contracts, agreement with the mining company about local and regional socioeconomic and environmental responsibilities, especially for employment, training, provision of public goods and services, environmental and health standards (for example, water quantity and quality and other investments in community development); (e) review and reform of legal and regulatory frameworks to attract private sector investment in mining and other industries; (f) arrangements for monitoring industry performance in terms of not only compliance with regulatory requirements and good international practice but also impact on the poor; and (g) privatization of SOEs in the sector, if any, and disentangling public sector service provision from the activities of the mining companies to prevent or eradicate corruption and inefficiency in this sector and to increase accountability.
- ⊃ *On the regional level*, instruments may include (a) building capacity to manage regional infrastructure and fiscal revenue and (b) linking mine development to regional development planning.
- ⊃ *On the local level*, instruments may include (a) capacity building of local government and communities to manage local infrastructure, social services, and fiscal revenue, particularly in the context of strategic local development planning; (b) promotion of local business and employment opportunities; and (c) ensuring adequate representation and consultation of the local community in the mining project.

Mining companies, operators, and contractors

Mining companies, operators, and contractors can contribute, too, to the creation of a framework and to the buildup of capacity that will facilitate good cooperation with the local community, the region, and the country. Together with the local community, the following issues can be addressed:

Local capacity. Mining companies can help to avoid creating a culture of dependency by fostering or leveraging local capacity. This will ensure that communities are eventually better able to plan and manage themselves.

Data collection and monitoring. The mining operation's compliance with regulatory frameworks, in particular in the realm of environmental and social issues, typically involves a number of indicators that require regular collection of data for observation. Many of the issues involved are of great concern to the local community—for example, water quality, water quantity, or the number of jobs provided. Involving, where feasible, community representatives directly in the collection of data related to these issues, and integrating them in the task of monitoring these data, can contribute to the buildup of trust and, at the same time, compensate for institutional weaknesses that might exist among, for example, environmental agencies. The mining company may also get involved in measuring and monitoring social and economic impacts.

Planning for closure. This should start no later than at the initial development stages of a mining operation, as it will influence the design of the mine and associated infrastructure, the benefits package, and the company's community development programs. In particular, mine-generated benefits and

compensation packages should be designed with the long-term view of saving and investing for the post-closure period.

Consultation. Mining companies should consult local communities from the beginning of exploration, disclosing information to all stakeholders in a timely, accurate, and comprehensible manner. They may also help in facilitating participation of other development players, NGOs, and CBOs in the area.

Civil society: Communities and NGOs

Civil society organizations can consult and plan, together with the local community, in the following ways:

Developing leadership and community capacity. Civil society, in an effort to reduce reliance on handouts, will strive to become increasingly independent from the mine for services and economic activities. In the process, CBOs and NGOs can play an important role—often in concert with the mine or the government—for community development and for consultations with the mining company. Capacity building can be implemented using mining benefits to build community assets.

Monitoring impacts on the poor. Civil society organizations can also help identify the impact of mining activities on the poorest segments of the community (regarding not only economic impacts but also health, cultural issues, food security, and so forth) and propose solutions, both to government and to the mining companies, to mitigate such impacts.

Participating actively. To the extent possible, civil society will want to participate in all levels of the overall planning process of the area and region, in particular, where taking a long-term view of investing some of the mine-related revenue for a post-closure period is important.

Taking over responsibility. Wherever appropriate, and as early as possible, civil society might get involved in managing and maintaining specific site assets and infrastructure. This can enhance either the local administration's or community organization's capabilities and mission.

Remaining engaged. It will be key that various civil society organizations, both formal and informal, remain engaged with the government and the company, through the entire life cycle of a mining operation, so as to promote long-term regional planning in the mining area.

25.4.2 Small-scale mining: Safer opportunities for the poor

Appropriate government intervention in artisanal and small-scale mining will be country specific, depending significantly on the type of small-scale mining and on factors such as the types of technologies in use, the dominance of hard-rock or alluvial mining, accessibility to areas of small-scale mining, and cultural conflicts.

A generic type of intervention, however, is to regularize the activities of the small-scale mining sector within a legal framework. This would be the primary and single most important type of intervention, with the potential to reduce poverty, create opportunities for growth, and enhance social development. In many countries, small-scale mining is illegal or restricted. This means that miners often have no proper legal titles to their claims, resulting in "hit and run" mining with no environmental, health, or safety precautions. It also means that miners cannot use their claims or mines as collateral. Potential negative repercussions of the introduction of regulations should be expected, however, wherever small-scale mining is required to follow the same regulatory framework as large-scale mining. If not implemented in a simplified version, such regulations can be impractical for small-scale mining, especially in relation to environmental, occupational health, and safety standards. In this case regulations would simply be evaded, not enforced, or not taken seriously, furthering the potential for corruption. Nevertheless, regularization of the sector is a necessary but far from sufficient step.

Other key government interventions would need to be tailored to the situation as identified by the diagnostics discussed in section 25.3.2. Such interventions would typically include the following:

- ⊃ Monitoring environmental performance and promoting more environmentally friendly mining and processing technologies.
- ⊃ Providing information and education about communicable diseases, sanitation, and occupational health and safety.
- ⊃ Restricting or regulating child labor, combined with supportive health, nutrition, and educational interventions.
- ⊃ Supporting structures and initiatives for collective and cooperative actions, since these have been shown to be a key instrument for miners and their families to improve their own situation and their economic opportunities. This can be implemented by introducing more productive, practical, and affordable technologies.
- ⊃ Identifying potential cultural hotspots and taking quick actions to restrict small-scale mining in these areas.

Notes

1. There is no widely accepted definition of small-scale mining. For example, in Ghana, Zambia, and Zimbabwe, the criteria for defining small-scale mining is based on concession area; in Columbia, Senegal, and Ethiopia, it is based on depth of working; in Argentina, South Africa, Pakistan, Thailand, and Zimbabwe, it is based on capital investment; in Senegal, it is also based on crude production levels; in Ghana and Sri Lanka, it is based on the use of explosives. Common features in the different definitions are (a) stakeholders are usually limited to citizens of the country, (b) use of sophisticated equipment is restricted, and (c) there are set limits on the level of production, number of miners, and infusion of capital. For further reading, see Department for International Development (2000).
2. The Dutch disease hypothesis is that a positive shock (boom) to an important primary product causes an appreciation of the real exchange rate. This results in a movement of resources to the nontradable and the boom sectors and away from tradable manufacturing and agricultural products. The exchange rate shifts can cause problems in promoting competitive diversification into noncommodity sectors.
3. Since 1999, for mining operations financed with the assistance of the International Finance Corporation (IFC) or insured through the Multilateral Investment Guarantee Agency (MIGA), local communities and other affected groups have access to a compliance advisor/ombudsman. The Office of the Ombudsman attempts to resolve conflicts arising from IFC or MIGA projects by providing a context and process for parties to find mutually satisfactory solutions. It is focused on identifying problems and recommending actions, using conflict resolution and mediation approaches (see www.ifc.org/cao).

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Technical Notes and Case Studies

to

Volume 2

Annex K

Trade Policy: Technical Note

Technical Note K.1 Trade Reform and the Poor: A Simple Framework

In order to provide a schematic overview of the various possible effects of a trade policy reform on the poor, it is useful to distinguish between three types of sectors—those producing importable or import-substitute goods (M), exportable goods (X), and nontradable or home goods (H)—and between two factors of production: labor and capital. For the purposes of this note, the only asset of the poor is assumed to be labor, and the asset owned by the nonpoor, capital. The effects of trade policy reform on the poor depend on the consumption and production of the poor in the three sectors listed. The effects also differ in the short and long run. In the short run, it is assumed that the factors of production are immobile; in the long run, they are taken to be mobile.

Trade reform and relative prices

It is assumed that the country concerned is small (i.e., it has no power to affect world prices of traded goods) and that labor markets function well, in the sense that nominal and real wages are flexible. Domestic prices of M (P_m) and X (P_x) depend on their world price and on policy variables such as the exchange rate and import tariffs. The price of H (P_h) is determined fundamentally by domestic supply and demand. Allocation of resources depends on these three prices. In the long run, resource allocation depends on relative prices only, such as P_x/P_m and P_x/P_h .¹

Trade liberalization (a reduction in tariffs) raises P_x/P_m , giving labor and capital an incentive to move from M to X. Whether P_m falls or P_x rises makes an enormous difference in the short run, and is likely to determine the success of the reform. This is where complementary policies, including exchange rate policy, play a crucial role.

Suppose the nominal exchange rate (ER) remains unchanged following a tariff reduction. P_m falls while P_x remains unchanged, and labor and capital in sector M are hurt in the short run. The groups that are hurt are likely to lobby for a policy reversal. Also, while in the long run both imports and exports increase with a tariff reduction, imports tend to increase faster than exports, with a likely deficit in the balance of trade that may be unsustainable. Both the pressure from short-term losers and the balance of trade problem may result in a failure of the reform. This outcome can be avoided or its effects mitigated by depreciation of the domestic currency, which raises the price of importables relative to nontradables and helps dampen both the increase in import demand and the decline of labor and capital's nominal income in sector M. Labor and capital in sector X benefit from the devaluation, since P_x increases.²

A policy package of tariff reduction and currency depreciation should thus make it easier for the factors of production in sector M in the short run and during the transition period, and should dampen the resistance to the reform. In countries with a flexible or floating exchange rate policy, the lower tariff will raise the demand for imports and for foreign exchange. This will in turn raise the price of foreign exchange or lower the value of the domestic currency. In other words, the exchange rate will depreciate (more units of domestic currency per unit of foreign currency). This is similar to a devaluation except that it is determined by the market and not by the monetary authorities.³

The effect of trade reform on the poor also depends on the second relative price, P_x/P_h , which depends not only on policy but also on consumer reaction to the policy, since it is determined by supply and demand. P_x/P_h also rises following a tariff reduction, although less than P_x/P_m .

When the value of the nominal exchange rate cannot be changed, a tariff reduction has no impact on P_x but lowers P_m . This leads to a shift in consumption from H and X to M, and thus to a reduction in P_h (although less than the reduction in P_m). This implies an increase in P_x/P_h . With a full devaluation equivalent to the tariff reduction, P_m remains unchanged and P_x rises by the magnitude of the depreciation, shifting consumption from X to M and H, raising P_h . P_x/P_h rises by the same amount as in the absence of devaluation. Finally, with flexible exchange rates, the depreciation is less than the reduction in the tariff, so P_m falls, while P_x rises. Consumption shifts from X to H and M, and from H to M, so the net

effect on the demand for H is ambiguous, as is the effect on Ph. Note, however, that P_x/P_h rises exactly as in the other two cases.

Effects on real income in the short run

The impact of trade reform on the poor in the short run will critically depend on their patterns of consumption and production (income), and in particular on whether they are employed in tradable or nontradable activities. There are three cases to consider.

- 3) *The poor are employed in the exportable sector.* The relative price of sector X increases. Thus, in the short run, as factors are not mobile across sectors, the wage rate of labor employed in X increases. On the consumption side, labor (and the poor, by assumption) gain as long as they consume either some M or some H or both (since their prices fall). Labor’s real income must improve, and the higher the proportion of income of the poor spend on H and M, the larger the gains. (The real income of labor would remain unchanged, in the unlikely case that the poor spend their entire income on the exportable X.)
- 3) *The poor are employed in the importable sector.* Where the poor produce in the importable sector, a tariff reduction leads to a decline in the wage of the poor (labor) employed in the importable sector. How much they lose depends on the consumption effect: if they spend all their income on importables, the income and consumption effects cancel out and the net effect of trade liberalization on their real income is zero. However, if they also consume X and H, they will lose. The expected result is that the poor lose in the short run, but their loss is smaller than the decline in their wages because of the gains from the effect of trade liberalization on the prices of things they consume.
- 3) *The poor produce only in the non-tradable sector.* With the decline in the price of H, the wage rate in that sector also declines by about the same percentage. Labor in H also benefits from the lower cost of consuming M and H. It is possible that the impact on the real income of the poor rises because the cost of the consumption bundle falls more than their wages. In general, the impact on the real income of labor in H is ambiguous, and depends on the shares of M, X, and H in the consumption basket and on the response of the price of H to trade liberalization. The larger the share of M in the consumption basket of the poor, the greater the likelihood that they will gain. They must gain if they only consume M; they must lose if they only consume X; and they are unaffected if they only consume H.

These results are summarized in the matrix shown in table K.1. Each cell in the matrix represents the location of the poor in terms of production and consumption. The first sign represents the effect of trade liberalization on the labor income of the poor. The second sign represents the effect on their real income due to changes in the cost of their consumption basket. Thus a “+” after the “/” sign means that the cost of their consumption basket has fallen following trade liberalization. The sign in parentheses gives the net effect of changes in their nominal income and cost of their consumption baskets on their real-income in different locations. To summarize, the best outcome is when the poor are employed primarily in the exportable sector X and consume importable goods M. The worst outcome occurs if the poor are primarily employed in sector M and consume primarily exportable goods X.

The foregoing has focused on trade reform involving tariffs, in practice, however, reforms often involve the abolition of quantitative restrictions (QRs) such as import licenses. As explained in the chapter, a shift from QRs to tariffs could significantly help the poor.

Table K.1. Location of the Poor and Effects of Trade Liberalization in the Short Run

		Consumption			
		M	X	H	Total ^a
Production	M	-/(0)	-/(-)	-/(-)	-/(-)
	X	+/(+)	+/(0)	+/(+)	+/(+)
	H	-/(+)	-/(-)	-/(0)	-/(?)
	Total ^b	?/(+)	?/(-)	?/(?)	

^a This column gives the effects for the poor who receive their income from production in only one sector, but whose consumption basket includes products from the three sectors.

^b This row gives the effects for the poor who consume products from only one sector, but whom receive their income from the three sectors.

Effects in the long run

In the long run, labor and capital are mobile across sectors, such that trade liberalization results in a contraction of sector M and an expansion of sector X. If, as is likely for most low-income developing countries, M is on average capital-intensive and X labor-intensive, the new output configuration results in an increased demand for labor and a higher nominal wage rate. As the prices of M and H fall, labor's real income rises as well. Consequently, while in the short run, some labor employed in M loses from trade liberalization and the impact on labor in H is ambiguous, when factors are mobile, labor in both sectors gains. Of course, for this to apply to all the poor, labor markets need to be integrated. If they are segmented, then some poor could lose, especially if they are employed in the import-competing sector and are unable to move. In order to ensure that the poor are better off following trade liberalization, the conditions affecting the functioning of the labor market are therefore critical.

In the analysis presented above, it is assumed that all factors are fully employed and that changes in trade policy are reflected in changes in relative factor prices. In practice, and for many low income countries, there may be a large supply of unskilled labor in the subsistence sector that can be employed at a fixed real wage in the modern sector. Trade reform may have a positive impact in this case, not through increasing the wages of unskilled workers but rather by reducing the amount of unemployed or underemployed in the subsistence sector and inducing an expansion of the output of the modern sector. For example, following the Indian trade reform in 1991, manufacturing employment increased faster while wages increased slower than before the reform (Winters 2000). In most cases, a lasting trade policy reform can be expected to have both quantity and price effects in the labor market. In general, however, labor mobility is essential in order ensure movement of workers from the contracting and expanding sectors.

Sector-specific issues

The above framework is highly stylized and disregards many factors that are important in determining the impact of reform on the poor, like imperfect competition and intersectoral dependencies. For example, while the agricultural sector is generally made up of small and competitive farms, this is typically not the case for marketing and distribution services. In a number of low income countries, marketing is organized by public agencies or parastatals, which usually fix producer prices at levels below world prices and which do not always change them in response to changes in world prices or in exchange rates. For instance, in some of the countries where the devaluation from 50 to 100 CFA francs to the French franc took place, farm prices did not at first increase by the full amount of the devaluation while the prices of imported inputs often did—the prices of some of the products that farmers consume also rose. In the short run, this had a negative impact on the real income of farmers. Thus, although the framework described above is useful to help understand the likely first-order impacts of trade reform on the real income of the poor, the specifics of each case need to be taken into account.

Also in agriculture the degree to which farmers consume their own output matters. The greater the share of own consumption, the smaller the impact of the reform on the real income of farmers. If farmers consume all of what they produce, the real income effect of trade reform on them is nil. If farmers are net buyers, they could be expected to lose from an increase in the price of their output. However, in order to be net buyers, they need additional income sources. If this additional income is earned by working on other farms, the real income of these farmers need not necessarily decline given that nominal rural wages will tend to increase with the price of farm products (or will increase with trade reform, in the long run).

Notes

1. With three nominal prices, there are only two independent relative prices. For instance, choosing P_x/P_m and P_x/P_h , the third relative price (P_m/P_h) is obtained by dividing P_x/P_h by P_x/P_m .
2. A devaluation has no impact on the relative price P_x/P_m because both prices increase in the same proportion.
3. This section employs a stylized and simple framework that abstracts from the complexities that, in practice, are often important, such as the existence of unemployment or the presence of intermediate products.

Annex L

Rural Poverty: Technical Notes

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Rural poverty

- ⊃ Share in rural areas with <1\$US
- ⊃ Rural poverty rate
- ⊃ Severity and depth
- ⊃ Inequality: land/income Gini coefficient or share owned or cultivated by income level

Rural malnutrition indicators

- ⊃ Prevalence of underweight children (height/age) (weight for age)
- ⊃ Proportion of population below minimum level of dietary consumption

Agricultural production (for basic food/cash crops):

- ⊃ Yields (rain-fed/irrigated/region)
- ⊃ Production by region and season
- ⊃ Milk production trends
- ⊃ Livestock mortality rates

Farm profitability:

- ⊃ Marketing transaction costs by region
- ⊃ Output price trends by region and season
- ⊃ Input price trends by region and season
- ⊃ Basic food prices by region and season

Non-farm income:

- ⊃ Wage rate for laborer by region and income decile
- ⊃ Share of income from non-farm labor by income decile
- ⊃ Sector of employment by income decile

Household food security indicators:

- ⊃ Per capita household food production by income decile
- ⊃ Amount of dietary diversity (different items consumed) by income decile
- ⊃ # of missed meals reported/HH by income decile

[Education outcomes in rural areas]

[Rural health services outcomes in rural areas]

Increase agricultural production and reduce production risk, especially of poor farmers and women, by improving:

- ⊃ Land security, access to land and efficiency of land markets
- ⊃ Access to quality irrigation
- ⊃ Availability and use of inputs & extension
- ⊃ Availability of credit and savings
- ⊃ Soil conservation practices
- ⊃ Livestock health programs, including vaccinations
- ⊃ [Education and health outcomes]

Increase farm profitability particularly in poor areas by improving:

- ⊃ Access to paved roads and communications
- ⊃ Availability of transportation
- ⊃ Incentives for trade (trade liberalization)
- ⊃ Regulatory framework to promote local markets
- ⊃ Access to market information, as appropriate

Improve household food security through:

- ⊃ Targeted social protection programs in rural areas
- ⊃ Food stock management initiatives in rural areas
- ⊃ Child nutrition programs
- ⊃ Improved agricultural production and marketing

Develop non-farm income by improving/changing:

- ⊃ [Education and health outcomes]
- ⊃ Access to paved roads and transportation
- ⊃ Taxes/subsidies on capital inputs and purchases
- ⊃ Access to electricity and potable water

[Improve rural health/education outcomes by increasing access to and quality of health/education services in rural areas]

Universal coverage of primary education in rural areas	<ul style="list-style-type: none"> ⌘ Gross enrollment in rural areas ⌘ Net enrollment rates in rural areas ⌘ Gender-disaggregated enrollment rates 	<ul style="list-style-type: none"> ⌘ Number of primary school facilities per 10,000 rural households ⌘ Number of teachers per school age population in rural areas ⌘ Number of pupils per classroom ⌘ Classroom construction in rural areas ⌘ Rural adapted curriculum 	<ul style="list-style-type: none"> ⌘ Public expenditures allocated to construct and maintain rural schools ⌘ Public expenditures for incentives to teachers to serve in rural areas ⌘ Develop community committees to promote parental involvement in schools
Reduce child mortality	<ul style="list-style-type: none"> ⌘ Percentage of rural children immunized ⌘ Percentage of rural households with access to health care within 5-10 kms of home ⌘ Anthropometric indicators for boys and girls (stunting and wasting) 	<ul style="list-style-type: none"> ⌘ Doctors per 10,000 rural residents ⌘ Health extension workers per 10,000 rural residents by gender of health worker ⌘ Number of visits made by rural health workers per year per 10,000 ⌘ Access to potable water (see below) ⌘ Maternal health education programs 	<ul style="list-style-type: none"> ⌘ Disaggregated expenditures on urban and rural health to ensure adequate access to health care by rural households <p>(Priorities may be given to areas where child mortality rates are high.)</p>
Improve maternal health in rural areas	<ul style="list-style-type: none"> ⌘ Percentage of births in rural areas attended by health workers ⌘ Percentage of births in rural areas receiving pre- & post-natal care 	<ul style="list-style-type: none"> ⌘ Pre-natal health clinics per 10,000 rural households ⌘ Number of birth attendants in rural areas per 10,000 rural households 	<ul style="list-style-type: none"> ⌘ Expenditures on rural health services <p>(Priorities may be given to areas where maternal mortality is high.)</p>
Reduce HIV/AIDS, malaria and other diseases in rural areas	<ul style="list-style-type: none"> ⌘ Increase in use of condoms ⌘ Awareness of HIV transmission mechanisms among rural households ⌘ Percentage of sex workers tested and counseled by public health officials ⌘ Percentage of pregnant women screened for HIV infection ⌘ Percentage of infected rural individuals treated with HIV suppressant drugs ⌘ Awareness of malaria prevention mechanisms among rural households ⌘ Adoption of mosquito-nets by rural households 	<ul style="list-style-type: none"> ⌘ Number of rural health campaigns for high-risk populations in rural areas ⌘ Number of AIDS testing kits available at rural clinics and hospitals ⌘ Number of AIDS dosages available per rural clinic and hospital ⌘ Number of swamps drained ⌘ Improved access to potable water (see below) 	<ul style="list-style-type: none"> ⌘ Expenditures allocated to rural areas to increase AIDS awareness and prevention, to enable testing for presence of HIV infection, and to train health care professionals in HIV/AIDS issues ⌘ Expenditures to drain swamps and public health campaigns to prevent malaria and other diseases

(Table continues on the following page.)

Land tenure security	<ul style="list-style-type: none"> ⊃ Percentage of individual and collective land that is titled by region ⊃ Percentage of land disputes resolved ⊃ Percentage of beneficiaries of land dispute services satisfied with transparency of dispute resolution mechanisms 	<ul style="list-style-type: none"> ⊃ Implementation of land titling program: number of titles issued by region ⊃ Availability of maps, cadastral and registry information ⊃ Length of time to resolve disputes 	<ul style="list-style-type: none"> ⊃ Public expenditures on land titling, maintenance of cadastre and registry, and dispute resolution mechanisms
Access to land	<ul style="list-style-type: none"> ⊃ Average landholdings/cultivated by income level (irrigated/rain-fed) ⊃ Distribution of land by income decile/land Gini coefficient ⊃ Percentage of households by income level renting in/out land 	<ul style="list-style-type: none"> ⊃ Implementation of land reform program: number of parcels redistributed ⊃ Laws allowing for female inheritance of land 	<ul style="list-style-type: none"> ⊃ Public expenditures for land reform (e.g., market negotiated land reforms)
Market efficiency	<ul style="list-style-type: none"> ⊃ Percentage of registry users satisfied with services 	<ul style="list-style-type: none"> ⊃ Tax rates on farm land ⊃ Legal framework allows for land transactions 	<ul style="list-style-type: none"> ⊃ Public expenditures on registry, dissemination of legal framework
Improve access to quality irrigation for the poor			
Access to irrigation	<ul style="list-style-type: none"> ⊃ Percentage of smallholders (disaggregated by gender and region) with different types of irrigation (tubewells, hand pumps, irrigation canals, etc.) 	<ul style="list-style-type: none"> ⊃ Price charged for water use disaggregated by size of land holdings ⊃ Off-farm and on-farm irrigation infrastructure provided 	<ul style="list-style-type: none"> ⊃ Public expenditures to modernize existing irrigation, expand coverage and develop new irrigation
Improved pro-poor management of water resources	<ul style="list-style-type: none"> ⊃ Percentage of smallholders (disaggregated by gender) involved in water use and allocation decisions ⊃ Percentage of smallholders belonging to WUAs satisfied with the transparency and services provided by their group 	<ul style="list-style-type: none"> ⊃ Technical assistance for WUAs ⊃ Regulatory framework allowing for water markets and participatory water management 	<ul style="list-style-type: none"> ⊃ Expenditures to improve management of water resources at the national and local levels

Environmental sustainability	<ul style="list-style-type: none"> ⊃ Loss in soil fertility ⊃ Extent of soil erosion ⊃ Extent of deforestation 	<ul style="list-style-type: none"> ⊃ Percentage of households engaging in soil conservation techniques ⊃ Number of extension workers/farmer trained in soil conservation ⊃ Regulatory framework to protect forests ⊃ Technical assistance programs for community forestry 	<ul style="list-style-type: none"> ⊃ Expenditures for soil conservation programs ⊃ Expenditures for technical assistance programs
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Knowledge assets

Availability and use of inputs and extension

Expanded input use	<ul style="list-style-type: none"> ⊃ Percentage of households using fertilizer, pesticides, and improved seeds 	<ul style="list-style-type: none"> ⊃ Number of importers of agro-chemicals ⊃ Number of nationwide distributors of agro-chemicals 	<ul style="list-style-type: none"> ⊃ Expenditures to promote input use
Improved agricultural practices	<ul style="list-style-type: none"> ⊃ Rates of adoption of new practices and technologies disaggregated by gender, farm size, and region ⊃ Percent change in costs and labor requirements as a result of new technology practices ⊃ Percentage of households reporting satisfaction with extension service delivery, disaggregated by gender and farm size 	<ul style="list-style-type: none"> ⊃ Regulatory framework to promote seed development ⊃ Number of farmers trained, contacted, or visited, disaggregated by gender and farm size ⊃ Number of technical assistance vouchers distributed ⊃ Number of farm households/size in rural areas visited per extension agent ⊃ Number of new seed varieties released ⊃ Number of research grants distributed to farmers associations 	<ul style="list-style-type: none"> ⊃ Expenditures in extension and research programs (implemented either by public or private sector)
Access to price information	<ul style="list-style-type: none"> ⊃ Percentage of households with access to regular, reliable price information 	<ul style="list-style-type: none"> ⊃ National functioning market information system that collects price information at wholesale and consumer points 	<ul style="list-style-type: none"> ⊃ Expenditures on market information systems

(Table continues on the following page.)

<p>Availability of microfinance services</p> <p>Improve supply of and demand for microfinance services in rural areas</p>	<ul style="list-style-type: none"> ➤ Percentage of households in rural areas with credit, savings, and grants, disaggregated by gender and ethnicity ➤ Amount of credit and grants obtained by households in rural areas, disaggregated by gender and ethnicity 	<ul style="list-style-type: none"> ➤ Number and type of financial institutions offering credit and other financial services in rural areas ➤ Number and type of financial institutions offering income generating and community development grants in rural areas ➤ Number of microfinance institutions receiving technical assistance 	<ul style="list-style-type: none"> ➤ Expenditures to provide institutional strengthening to microfinance institutions
<p>Improve livestock production and access to sector products, particularly for the poor</p>			
<p>Increase access to livestock</p>	<ul style="list-style-type: none"> ➤ Livestock owned by rural households disaggregated by gender, ethnicity, region and land assets ➤ Livestock mortality rates (by species and region) ➤ Seasonal, regional and annual variation in livestock prices ➤ Share of livestock marketed seasonally by household 	<ul style="list-style-type: none"> ➤ Number of animals vaccinated in a rural area ➤ Number of livestock covered by veterinarian/paraprofessional in a rural area ➤ Early warning system for herders in drought prone regions ➤ Development of land access programs/laws that establish common grazing areas for herds 	<ul style="list-style-type: none"> ➤ Investments in early warning systems ➤ Investments in public health for livestock sector
<p>Physical assets</p>			
<p>Access to paved roads</p>	<ul style="list-style-type: none"> ➤ Percentage of households with access to paved roads ➤ Percentage of households within half day's transportation of rural market ➤ Percentage of households with all season motorized transportation access 	<ul style="list-style-type: none"> ➤ Operationalization of program for community based maintenance of rural roads ➤ Km of rural roads constructed ➤ Km of rural roads rehabilitated 	<ul style="list-style-type: none"> ➤ Expenditures for rural road construction and maintenance
<p>Access to communications</p>	<ul style="list-style-type: none"> ➤ Percentage of households in rural areas with public and private access to radio, telephone, and internet and post office ➤ Percentage of successful calls made in rural areas 	<ul style="list-style-type: none"> ➤ Number of rural lines/users/subscribers added in rural areas ➤ number of staff per 1000 connections in rural areas 	<ul style="list-style-type: none"> ➤ Expenditures on rural communications networks

Potable water and sewage	<ul style="list-style-type: none"> ⌘ Reduction in time spent collecting water ⌘ Reduction in incidence of water-borne diseases ⌘ Percentage of households reporting satisfaction with water and sanitation service delivery ⌘ Percentage of households with water shortages during the dry season ⌘ Percentage of rural households with private or public access to safe water within 30 meters of residence ⌘ Percentage of rural households with sewage hook-ups for dry season 	<ul style="list-style-type: none"> ⌘ Rural drinking water investment and maintenance strategy 	<ul style="list-style-type: none"> ⌘ Rural potable water program expenditures
Electricity	<ul style="list-style-type: none"> ⌘ Percentage of households in rural areas with electricity hook-up ⌘ Percentage of household expenditures on different forms of energy (electricity, LPG, kerosene, etc.) disaggregated by urban/rural and by income decile 	<ul style="list-style-type: none"> ⌘ Establishment of rural electrification fund 	<ul style="list-style-type: none"> ⌘ Expenditures allocated to rural electrification

Social capital assets

Improved access to government resources and programs and greater voice in local and national decision making	<ul style="list-style-type: none"> ⌘ Percentage of households reporting satisfaction with government in rural areas, disaggregated by gender and ethnicity ⌘ Percentage of households reporting satisfaction with local government in rural areas disaggregated by gender and ethnicity 	<ul style="list-style-type: none"> ⌘ Percentage of households participating in producers and marketing organizations ⌘ Percentage of households involved in secondary organizations ⌘ Number of community organizations receiving institutional strengthening grants and technical assistance 	<ul style="list-style-type: none"> ⌘ Expenditures on dissemination of legal framework, budgetary framework and expenditures, and institutional strengthening for local organizations
Risk management/food security Social protection programs in rural areas	<ul style="list-style-type: none"> ⌘ Number of jobs provided through public works programs (in person weeks) 	<ul style="list-style-type: none"> ⌘ Existence of rural safety net programs, rural cash transfers, public works 	<ul style="list-style-type: none"> ⌘ Public expenditures on public works, cash transfer and targeted food subsidy programs

Technical Note L.2 Policy Mechanisms for Improving Water Use Efficiency: Do the Poor Benefit?

Policies establish the environment within which irrigation and drainage is conducted. Three policy mechanisms commonly promoted as improving water use efficiency—namely water pricing, water markets, and water user associations—can have important implications for the well-being of the rural poor. This section evaluates the effect of these policies on poverty.

Water pricing and irrigation water allocation. The extent to which water pricing methods can affect income redistribution is rather limited (basically because of political opposition by powerful stakeholders). Farm income disparities stem primarily from such factors as farm size and location and soil quality, but not from water prices. When farm productivity/profitability is scale-neutral, the income distribution profile under most water pricing methods is proportional to the initial farm size distribution profile. Therefore, to affect income inequality, a water pricing method should include certain forms of water quantity restrictions (Tsur and Dinar 1995, 1997). Attention can be given to poor/small farmers by designing a block tariff that has its first payment level adjusted to poor/small farmers' farm size and ability to pay. This can work by either assigning a given water quota at a reduced price for certain farm sizes, or where a given quantity (subsistence) of water is sold at a reduced price.

Do water markets benefit the poor? Markets for water are expected to improve resource use efficiency by moving water from relatively less to more profitable uses. Does this benefit the poor? Experience suggests that the poverty reduction outcome depends on well established legal and institutional systems that can protect the poor and the small producers. Their ability to compete with large farmers in the market or to realize their water rights in the face of pressure on the part of big producers is limited. In many countries facing severe water stress, institutional capacity is often weak both in regulatory terms and in equity terms (Webb and Iskandarni 1998). The result—as in Yemen—is that wealthy farmers over-exploit the resource (in the Yemeni case, through groundwater extraction), which causes short-term inequities for the non-wealthy farmers and inter-generational inequities for all farmers. Informal water markets offer unreliable access to the poor, but do offer the potential to negotiate group purchases of water for the poor. In Pakistan, informal groundwater market systems prevail and more established farmers are likely to own tubewells and smaller farmers are likely to purchase water from water resellers at higher prices. The unreliability of access limits productivity of those who depend on others' wells, because the market consists of a small number of sellers holding monopolistic power (Meinzen-Dick 1998). However, analyzing data from informal water markets in India (Saleth 1998) suggests that buyers as a group (if they can organize and speak in one voice and strategy) gain many times more than sellers because of their cooperative negotiating power.

User participation through water user associations. Giving voice to the poor and local autonomy in resource management are two important dimensions of the Bank's new approach to poverty, which can be addressed through institutionalizing participatory management of irrigation systems. Experience from both Bank-funded projects and from the many bilateral and non-governmental organizations involved in irrigation development point to the potential benefits to the poor from introducing participatory management strategies. The typical approach entails fundamental restructuring of the public sector irrigation agency to allow institutional "space" for farmers to become involved in management. Establishing legally recognized water user associations (WUAs) with a mandate for operating, maintaining, modernizing, and expanding irrigation infrastructure is a long-term commitment by both government and the farmers themselves. These two dimensions of participation reforms—the agency level and the WUA level—are of equal importance and must be pursued simultaneously and synergistically.

The benefits to the poor from WUAs require continuous monitoring and re-assessment as circumstances change. Indeed, the challenges of establishing WUAs are just the beginning; the ensuing second-generation challenges can be expected to include financial sustainability, equity, and technical dimensions of operations and maintenance (see Groenfeldt and Svendsen 2000). Because of the close correlation of poverty and political marginalization, the status of poor farmers (as well as landless users of irrigation water for domestic and other purposes) needs to be closely monitored.

Technical Note L.3 Assessing and Monitoring Rural Financial Markets

Assessing

Developing a strategy and policy for the financial sector as part of a national poverty reduction strategy requires an understanding of macro-contextual factors, the institutional factors underpinning the financial sector and the client base for microfinance products. A major constraint to preparing sustainable rural microfinance strategies is the lack of information on the penetration of rural financial markets and on the quality of rural microfinance institutions.

- **Contextual factors.** Particularly relevant here are a sound understanding of the macroeconomic framework, financial sector policies, the legal and supervisory environment both for provision of financial services to the rural poor and for microenterprises, and the overall characteristics of the financial sector.
- **Institutional profile of the financial sector.** An understanding of the type of rural financial institutions, their financial health, their respective client base, and the deposit, loan, and other services they offer is essential to designing a financial sector strategy in support of poverty reduction. This could also include an assessment of the transaction costs of financial intermediation in rural areas and with poorer clients.
- **Clients and the poor.** To develop a rural microfinance strategy, it is important to understand the poor's current informal and formal access to financial services, the constraints to accessing these services, and the overall demand for financial services. Understanding the nature of how the poor are limited in opportunity or subject to insecurity also assists in tailoring interventions to assist them, which in some cases may be through public action in areas outside the financial sector, as discussed above.

Monitoring

The suggested output and outcome indicators are weighted towards the penetration of rural financial markets, while the indicators on RMFI outreach and sustainability are useful for evaluating specific institutions. Evaluating the impact of the activities of RMFIs on rural poverty is less straightforward, as indicated in box L.1.

Output indicators

- Number and type of financial institutions offering credit and other financial services in poor regions.
- Number and type of institutions offering income generating and community development grants in poor regions, and the breakdown by gender and ethnicity of the grants (if relevant).
- Number and type of institutions offering technical assistance programs in poor areas to develop basic skills of economic and social intermediation (if relevant).
- Number of financial providers with an average outstanding loan size of less than 50% of GDP/capita (or another more relevant percentage figure).
- Trends in the portfolio size and number of active clients of rural microfinance institutions.

Outcome indicators

- The share of households with access to credit, savings, and grants by region, poverty status, gender and ethnicity.
- Change in percentage of rural population in target areas below a certain income or poverty line.

Box L.1. Measuring Impact of Microfinance on Clients: The ImpAct program

“Improving the Impact of Microfinance on Poverty,” or ImpAct, is an action research program funded by the Ford Foundation and implemented by three UK universities, with CGAP participation. The aim is to improve the quality of microfinance services and their impact on poverty through strengthening the development of impact-assessment systems. The program seeks to promote impact-assessment systems that build on their priorities and agendas, provide the information needed for internal decision-making, and satisfy the demands of external stakeholders.

RMFI outreach

Breadth:

- Number of active clients (could differentiate by savers and borrowers).
- Outstanding loan portfolio (US\$).
- Total balance of voluntary savings accounts (US\$).

Depth:

- Does the RMFI offer products especially designed for poor clients?
- Percent of the RMFI clientele below the national poverty line, versus the percent of the national (or regional) population below the national poverty line.
- Average outstanding loan size as a percentage of GDP/capita.

RMFI sustainability

- Operational self-sufficiency (operating income divided by total operating expenses).
- Subsidy dependence index (increase in interest rate that would be required to offset the value of subsidies on costs and funds).
- Return on assets (operating profit divided by average total assets).
- Adjusted return on assets (same as for return on assets, but with expenses adjusted for inflation, subsidized cost of funds, and in-kind donations).
- Loan loss rate (amount written off that year divided by the approximate average outstanding loan portfolio for the year).
- Portfolio-at-risk delinquency rate (total value of loans with payments more than 30 days late divided by the total outstanding loan portfolio).

RMFI impact

Measuring client impact is costly, and for many RMFIs this is undertaken only as a subsidized activity in response to donor or government requests. More useful to an RMFI are client feedback on its financial services and information on client financial service needs, which facilitate adaptation of services to better fit the needs of the clientele. If RMFIs are required to provide client impact data, care should be taken that the RMFI staff is not diverted from its core activities to a degree that may harm the financial performance of the institution.

Moreover, unless an RMFI is using a recognized impact methodology together with reasonable baseline data, impact data may not be reliable. Proxy indicators include average loan size as a percentage of GDP/capita (for poverty impact), delinquency (productive use of loans), retention rates (to indicate that the loan was useful and suited to the client's needs), and growth in number of active clients (to indicate demand). These are imperfect, particularly if there is limited competition among RMFIs and a limited product range available to clients, but are more cost effective for RMFIs chasing sustainability.

Technical Note L.4 Assessing Social Capital

EXERCISE: Identifying Social Capital in Action

Briefly describe manifestations of social capital in your local context.

1. Give an example of social capital that has a positive impact on your community.
2. Give an example of social capital that has a negative impact on your community.

For each example, is this a case of “bonding,” “bridging” or “linking” social capital? Why?

EXERCISE: Social Capital in Your Community

Above we considered examples of the impact of social capital on economic development. Do any similar examples exist in your community? If so, please list two.

If not, might any of the examples considered be possible in your community? If yes, please list one and why it could work. If no, please explain why not.

EXERCISE: Based on the sample questions above, draft two questions you might ask people in your community to assess how well they cooperate.

Given the way you have worded each question, are these indicators intended to be used during quantitative or qualitative method assessments?

Sample questions from the forthcoming World Bank Integrated Questionnaire for the Measurement of Social Capital:

1. Of all the groups to which members of your household belong, which two are the most important to your household?
2. What are the main benefits of membership in these groups?
3. When there is a decision to be made in the group, how is it usually made?
4. Does this group interact much with other groups inside or outside the community?
5. Do you think that in this village or neighborhood people generally trust each other in matters of lending and borrowing?
6. If a community project benefits many in the community but not everyone, do you think all the neighbors would contribute time or money to the project?
7. Does this community undertake communal activities in which people come together to do some work for the benefit of the community?
8. Are there any activities in which certain groups are not allowed to participate? If so, please list the activity and the groups. Why are they not allowed to participate?
9. Is this neighborhood peaceful or is there violence? Has this changed over time compared with five years ago?
10. To what extent do local government and local leaders take into account concerns voiced by you and people like you when they make decisions that affect you?

Annex M

Urban Poverty: Technical Notes

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Technical Note M.1 Urban Observatory System

The Global Urban Observatory (GUO) of UNCHS (Habitat), which coordinates the network of local, national, and regional urban observatories, is working through partner institutions to provide training and other capacity-building expertise.

GUO supports the development of local urban observatories (LUOs), which will be test beds for urban poverty data gathering and management tools. An LUO can be a local government department, a university, an NGO, or any other capable organization in the public or private sector. Networks of LUOs will be facilitated by national urban observatories (NUOs) that are responsible for coordinating capacity-

building assistance and compiling and analyzing urban poverty indicators data for national policy development. The broad-based participatory process established in the indicators working groups organized by GUO's Urban Indicators Program may be institutionalized at the national or city level through the urban observatories. GUO is collaborating with the World Bank and other donors to provide guidelines, tools, and technical assistance to encourage capable institutions to become observatories with the mandate to develop and apply urban poverty indicators. The urban observatory system is funded by UNCHS, the World Bank, DFID, and various governments.

As part of its effort to establish a network of observatories to help national and local governments develop and use indicators, GUO held a one-month training of trainers in New Delhi, India, in November 1999. Trainers from six regions participated: Anglophone and Francophone Africa, Arab States, Asia and Pacific, Eastern and Central Europe, and Latin America and the Caribbean. The contractors have now begun to work with their key partners in these regions; 18 cities in Africa, 11 in Arab States, 26 in Asia and Pacific, 9 in Eastern and Central Europe, and 9 in Latin America and the Caribbean have been identified for the establishment of urban observatories. Decisionmakers and technicians from these urban observatories will receive training on indicators collection and management in and application of policy development, focusing on a set of about 25 key urban indicators and at least 10 more extensive indicators, selected specifically within each region.

For further information, contact the Coordinator, Global Urban Observatory, UNCHS (Habitat), P.O. Box 30030, Nairobi, Kenya. Tel: 254-2 623184; fax: 254-2 624263; email: guo@unchs.org

Technical Note M.2 Dimensions of Urban Poverty

This technical note is an illustration of an urban poverty matrix as presented in section 16.2.1 (table 16.1) of the main chapter text. The different dimensions of poverty—income, health, education, tenure insecurity, personal insecurity, and disempowerment—are discussed with reference to their visible and policy-related causes.

Income poverty

Dependence on cash for purchases. In cities, people have to rely on market exchanges to buy basic goods and services such as food, water, electricity, and transport. The ability to earn cash income thus becomes an important determinant of food security and other aspects of human well being. Food expenditures, for example, can account for as much as 60 to 80 percent of total income among low-income urban households. Transportation, water, and sanitation have also been reported to consume far higher shares of household income than planners have predicted.

The ability of the urban poor to earn cash income, however, is constrained by:

Employment insecurity and casual work. The urban poor are likely to be engaged in casual and informal-sector work, exposing them to the risks of employment insecurity and income irregularity (see box M.1).

Box M.1. Lack of Regular Jobs as a Cause of Urban Poverty

Urban poverty tends to be primarily not the result of lack of work but the lack of well-paying, steady jobs. Many of the urban poor sell food or cigarettes in the street, scavenge in garbage dumps, sweep streets, clean latrines, drive rickshaws, obtain day work in construction, or do piece-rate work, either in garment factories or at home.

Seasonality affects the earnings of the urban poor just as it does those of the rural poor. In Dhaka, Bangladesh, for example, incomes decrease among casual laborers such as rickshaw drivers and construction workers in the rainy season, primarily because, working outdoors, they suffer from an increased rate of illness.

Source: Ruel and others (1999).

Unskilled wage labor. Lack of skills is a common characteristic of the urban poor, implying an inability to get well-paid jobs.

Bad health. A family member's illness can impose huge costs on the rest of the household, both in terms of income loss, especially if the main income earner is sick, and in terms of treatment expenses. This is especially true when HIV—which is prevalent in many urban areas—invades a family.

Lack of access to job markets and opportunities. Geographical isolation—for example, for residents of periurban slums—and lack of access to information sources exacerbate poverty (see box M.2).

Box M.2. Lack of Access to Job Markets and Opportunities

In a participatory poverty assessment in Mombasa, Kenya, in 1997, lack of practical training and exposure to the world of work and business, inadequate access to credit, and insufficient information on employment or on markets for their products and services were identified as the major determinants of the high unemployment rate among young people.

Source: Rakodi and others (2000).

Macroeconomic crises. These not only reduce real incomes but increase prices of essential goods and services, while reducing the demand for the goods and services supplied by the poor. Such crises lead to job losses in both the formal and informal sectors (see box M.3).

Box M.3. Urban Populations Are Vulnerable to Macroeconomic Crises

A 1998 workshop of urban managers and central government officials from China, Indonesia, the Philippines, Thailand, and Vietnam reported that the region's financial and economic crisis was affecting the urban economy particularly strongly. Job losses in the formal sector were an early outcome, but more pervasive and devastating have been income losses due to reduced demand for manufactured goods, transport, and other services—the main sources of livelihood for urban residents; and price increases, especially for food, utilities, and essential imported goods, resulting from sharp exchange-rate depreciation.

Source: World Bank (2000a).

High costs and inadequate availability of essential public services. Efficient provision of public services can lower the income a household needs to have access to those services. Public services are largely available, especially in big cities, but often not to the poor. Regulatory and policy frameworks frequently constrain service provision to informal areas, and the urban poor in many countries therefore have to pay informal service providers more than they would pay for formal provision—or else connect themselves illegally and pay bribes to officials (see box M.4).

Box M.4. Spontaneous Settlements Are Not Addressed by Service Regulations in Turkey

In Turkey, no municipal or service-related laws address spontaneous settlement. Furthermore, regulations limit service providers to areas within structure plans—the Public Works Law, in fact, indicates that water, sewerage, and electricity connections should only be provided to formal areas. Spontaneous settlements generally have access to basic services, but those services have serious problems of affordability, quality, and quantity. For example, privately provided water is between 9 and 30 times more expensive per liter than public-network water. Water supply is sporadic; electricity cuts are frequent; solid waste is rarely picked up; and drains are nonexistent or not maintained. Illegal electricity connections can cause life-threatening accidents for users.

Source: Leitmann and Baharoglu (1999).

Lack of safety nets and labor protection. Because most of the urban poor are employed in informal sector jobs, few are protected by health and unemployment benefits or worker safety regulations. Furthermore, their low and irregular incomes prevent them from joining private insurance and pension schemes. This lack of protection exacerbates the vulnerability of the urban poor. Research carried out in Coimbatore, India, argues that “labor status is the single most important factor for explaining poverty, basically through the difference between protected and unprotected wage work and within the latter between regular and irregular workers” (Harriss 1989).

Regulatory constraints on small enterprises. These perpetuate the informality of the work available to the poor, discourage asset accumulation and access to credits, and increase the vulnerability of workers.

Health poverty

Inadequate cash incomes, and thus food insecurity and malnutrition; overcrowded and unhygienic living conditions; lack of sanitation and water; and the juxtaposition of residential and industrial functions are among the major causes of health poverty in cities (see also chapter 18 “Health, Nutrition, and Population”).

Inadequate cash incomes. This leads to food insecurity, especially when coupled with problems in the food distribution system, such as bad roads linking agricultural production areas with cities, inadequate storage facilities, and rundown and obsolete wholesale markets—all of which increase costs by causing high losses. Evidence indicates that malnutrition is increasing in cities (Ruel and others 1999). (See box M.5.)

Box M.5. Food Insecurity and Malnutrition in Cities

Poverty and malnutrition data in 16 countries show that for most of those countries, not only has the absolute number of the urban poor and undernourished increased in the last 15–20 years, but it has done so at a rate outpacing the corresponding changes in rural areas.

Nutrition data show that for 12 out of the 16 countries, the absolute number of underweight children in urban areas is increasing, and it is also growing at a faster rate than in rural areas. For 10 countries, both the absolute number of underweight children in urban areas and the share of underweight children in urban areas are increasing.

Source: Haddad (1999).

The urban poor are more exposed to environmental hazards than other groups, as they occupy the most polluted environments, such as those near factories, and risk-prone sites such as waste sites, riverbeds, and hillsides (see also chapter 11, “Environment”). For example, in a recent incident in Manila, the Philippines, a wall of refuse collapsed on squatters’ houses in the city’s biggest dump, Payatas. The bodies of at least 60 were recovered. Dozens more remain missing (*Washington Post*, July 11, 2000). Such sites often are the only ones available for housing for the poor, because they are unattractive to other potential users and because land-use policies make other locations unaffordable (see box M.6).

Box M.6. Juxtaposition of Residential and Industrial Functions

In the Dharavi slum of central Bombay, India, there are about 400 leather-processing units that are a major source of air and water pollution. A survey of a community that lives in the leather-processing area noted that waste water flowing in open drains contained hair, parasitic worms, and chemical and other effluents, including acids discharged after the cleaning of hides. In these environmental conditions, the storage of food is difficult and the possibility of contamination is high.

Noise pollution is also very high in certain parts of Dharavi. Doctors treating people who live close to the suburban railway tracks that run through the slum have observed cases of neurosis caused by the tremendous levels of noise.

Source: Swaminantham (1995).

Indoor pollution due to household-level energy sources is also a major cause of health poverty in cities.

Housing regulations that raise the costs of housing for the poor, and unsound policy and institutional frameworks for providing public services such as water, sewerage, and garbage collection, force the poor into unhygienic living conditions (see box M.7).

Box M.7. Multiple Impacts of Inadequate Water Supply on the Poor

In Kumasi, Ghana, although piped water is available in most parts of the city, poor households do not have individual connections and so must either purchase water from privately owned taps, at prices considerably higher than the cost of Ghana Water and Sewerage Corporation supplies, or obtain it from polluted streams. Water provision is especially inadequate on the urban periphery where there is rapid urban growth. Rules set by Ghana Water and Sewerage Corporation’s parent ministry forbid it to extend its network into unplanned settlements, effectively barring it from improving services to some of the city’s poorest inhabitants. Even areas with a piped network often suffer from feeble water pressure and intermittent service. These inadequacies particularly impinge on the poor, not just in terms of cost and time spent collecting water, but also because inferior services undermine informal-sector businesses, such as food processing, which depend on reliable supplies of potable water. The impact is greatest on women who operate such businesses and who may have to collect water at night, and on girls whose education may be curtailed by the time spent collecting water.

Source: Devas and Korboe (2000).

The urban poor are prone to job-related diseases and accidents. Poor children suffer from unhealthy workplace conditions. In carpet shops in Lahore, Pakistan, there are reports of children bonded to carpet masters at four years of age suffering from severe physical handicaps as a result of their working conditions (Drakakis-Smith 1996).

The people who are most prone to environmental hazards and job-related diseases are those least able to avoid them; moreover, the impact of such maladies hits them the hardest because they lack the income or assets (for example, insurance) to cope with illness and injury (Satterthwaite 1998). Taking time off work additionally can threaten the family’s economic survival. Poorer households lose a higher proportion of total income from being ill than do richer households (Pryer 1993).

Education poverty

The urban poor's access to education (see also chapter 19, "Education") is constrained by:

- *Crime and violence.* Insecurity due to crime and violence, especially when using public transport, deters school attendance among the urban poor (see box M.8).
- *Inability to afford school expenses,* including transport costs, is another constraint on school attendance in cities where the urban poor are heavily dependent on cash income. Because safety nets that would enable the poor to maintain their investment levels in education are often absent, withdrawing children from school is a common strategy during times of family economic hardship (see box M.8).
- *Insufficient school places.* In many cities, the number of school places has not kept up with the rapid pace of urban growth. Public authorities frequently fail to provide sufficient school places. That is especially true in the low-income settlements that burgeon on city peripheries—places that often fall outside existing municipal boundaries.

Box M.8. Constrained Access to Education

Impact of violence and crime on girls:

In a six-month period in 1992, one in five of all women in Cisne Dos, Ecuador, was robbed on a bus. One in two women witnessed such an attack. The lack of safe transport during off-peak hours has caused girls, generally from the poorest families, to drop out of night schools.

Inability to afford education:

Armando and Juan, aged 15 and 13, are the two older sons in a household of seven children in Cisne Dos. Their father, Santiago, a skilled construction worker, has been reduced by a decline in contract work to casual daily labor at irregular wages. With five young children, the boy's mother, Teresa, cannot get out to work. In 1991 the boys were forced to leave day school to help keep their younger siblings in school. Working as shoeshine boys in the city's bus terminal, they earn half the family's income. Although they registered for night classes at the local school, they are generally too tired to go.

Source: Moser (1996).

Tenure insecurity

Most of the urban poor do not have tenure security. Their dwellings may be built on public land; constructed on private property belonging to someone else; built on shared-title land; constructed without occupancy or construction permits; and/or rented in slums without formal renting contracts.

Many of the urban poor have to house themselves illegally because:

Land policies do not make sufficient developed land available. Urban planning tools, including master-planning, zoning, and plot-development regulations, are not appropriate to make land available in pace with rapid urbanization, resulting in insufficient land supply and increases in land prices. Master plans in many developing and transition countries are too centralized, take too long to prepare, and fail to address implementation issues or the linkages between spatial and financial planning. The resulting regulations are outdated and inappropriate.

Policies and/or regulations are not conducive to regularization of tenure or provision of other forms of tenure security. There are three main causes for resistance. First, there is a widespread assumption by authorities that regularization may encourage illegal practices. Second, issuing land documents (or use rights) can create considerable conflict, especially in places with multiple forms of property rights. Third, informal occupation provides sufficient grounds for eviction: the authorities may prefer to retain the informal status of some spontaneous settlements in case, some day, the land may be desired for other use (Durand-Lasserve and Clerc 1996; Payne 2000). Land and housing regulations may also make housing unaffordable. Unrealistically high standards for subdivision, project infrastructure, and construction make it impossible to build low-income housing legally. Finally, land and housing regulations make it difficult for the poor to follow cumbersome procedures. Procedures can be unduly cumbersome and difficult for poor people to follow (see box M.9). Observations from many developing countries show that the processes of obtaining construction and occupancy permits are complicated; not well understood by the poor, especially immigrants; time consuming; and costly. The result is invasions of state land or purchases of unplanned land from illegal agents.

Box M.9. Long Process of Land Adjudication in Peru

In Peru, state lands are adjudicated through a long and time-consuming process that takes about 43 months, consists of up to six stages, and even involves the president of the republic. An adjudication comprises 207 bureaucratic steps involving 48 different government offices. Even at the end of this process, title to the allocated land is not clear and holders are unable to exercise their full rights.

Source: Farvaque and McAuslan (1992).

Lack of access to credits. There is ample evidence from Africa, Asia, and Latin American and Caribbean countries that low-income and even moderate-income households do not have access to housing credits because:

- ⊃ They cannot afford the debt service required to finance the cost of a minimum unit. The major criterion financial institutions use to qualify households is the ratio of mortgage payment to income. Bolivia and Columbia provide typical illustrations. The ratio of mortgage payment to income for low-income households is 104 percent in Bolivia and 40 percent in Colombia—far exceeding the maximum 25 percent and 30 percent allowed by commercial financial institutions in those countries (Ferguson 1999).
- ⊃ Mortgages require payments every month for a long period of time. However, poor households may be unable to meet this steady obligation. Because their incomes can vary drastically due to the vagaries of self-employment and occasional crises such as sickness and injury that can absorb all their available resources (Ferguson 1999).
- ⊃ Commercial financial institutions usually have little interest in lending to low-income households, even those that can pass conditional hurdles, because the small loans required by these households are of low profitability (Payne 2000).

When housing loans are not available, households have to use their own savings, sweat equity, and/or loans from relatives to purchase a home. Estimates from various countries show that it would take from 15 to 30 years of saving at 30–50 percent of monthly income for low-income households to afford the outright purchase of a minimum-standard unit in authorized stock. We must note that in reality households in the lowest deciles of income distribution cannot save at these rates simply because such families' monthly incomes are already irregular and may be barely sufficient even for minimum food needs. Building in illegal areas, without construction and/or occupancy permits, remains their only option.

Lack of tenure security leads to:

Loss of physical capital, damage to social and informal networks for jobs and safety nets, and loss of sense of security (see box M.10). Several million urban dwellers are forcibly evicted from their homes each year, most without any form of compensation.

Box M.10. Evictions Degrade Physical and Human Capital

When evictions take place in Nairobi, Kenya, the results are destruction of property and of people's development initiatives. The consequences are far reaching: lives are lost, livelihoods are destroyed, homes are razed to the ground and children miss school and are forced onto the streets as parents ponder where and how to start life afresh. The ensuing lack of security has serious social consequences, as it degrades people's ability to organize themselves and to reinvest in their communities.

Source: Apiyo (1998).

Inability to use the house as a resource when other sources of income are reduced. For poor people, housing is an important productive asset that can cushion against severe poverty during times of economic hardship. Two common coping strategies are renting out a room or creating an extra space for income-generating activities (see box M.11). When the poor have secure ownership of their housing, they

Box M.11. Home as a Workplace

Research shows that the struggle to increase household income is closely linked to the process of gaining and improving shelter. Nilofar, who lives with her husband in a one-room dwelling in the squatter settlement of Jahangir Puri in Delhi, India, says, "There was no work, so what could we do? Things were so expensive and we had no income. First we took a room to rent through my husband's uncle, and then we managed to get a plot. We have now made this house ourselves." Nilofar's home is also a workplace, where she makes bangles Hindu and Muslim women wear on their wrists. Nilofar paints and sorts the bangles and her husband sells them on the streets.

Source: Kellett and Tipple (2000).

often use it with remarkable resourcefulness when other resources of income are reduced (Moser-Cisne Dos Study 1996).

Personal insecurity

Many things may jeopardize the personal security of the urban poor. These threats include family breakdown, often caused by drug and alcohol abuse; social diversity and visible income inequality in cities; evictions due to tenure insecurity; social and institutional exclusion; and lack of assets and opportunities. Often, these problems may lead to community and domestic violence. The victims of such violence are most often women and children (see box M.12).

Family breakdown often leads to reduced support for children and to youths becoming involved in drugs and gangs (a negative form of social capital network). Gang, drug, and gun violence involves youths not only as perpetrators but also as victims, and threatens the personal security of others in low-income areas. Lack of jobs, the inability to continue schooling, and a lack of opportunities for other constructive activities are the underlying factors behind violence and delinquency.

Social diversity, and especially visible income inequality, in cities increases tensions, and tempts the poor to commit crimes.

Evictions organized by public or private landlords also threaten personal security in low-income/slum settlements. The burning of settlements to make way for developers and threats to tenants by slum landlords have been reported by various studies (Apiyo 1998; Amis 1984).

Social and institutional exclusion also makes the poor vulnerable. When the poor lack the full rights and responsibilities of citizens, they become susceptible to the causes of insecurity.

Lack of assets, services, and opportunities, both communal and personal, stigmatize certain residential areas in cities as centers of crime and desolation (see box M.12).

Box M.12. Geographical Concentration of Violence and Stigmatized Areas in Jamaica

In Jamaica, violent crimes tend to be geographically concentrated in poor communities. Almost three-quarters of murders and more than 80 percent of shootings take place in poor neighborhoods. The victims and the perpetrators of violent crime tend to be young men, who account for 60 percent of all arrests for murder. Local police maintain that it is young children who suffer most from domestic violence. Increasingly, violence has involved women. At least 40 percent of murders are a result of domestic disputes, with women as the victims. Women are now not only the victims of crimes by men but also the perpetrators of violence against other women. More than one-third of adolescent girls have been involved in a fight themselves, and 30 percent report being afraid to go to school because of violence in their communities. Several discussion groups have perceived a breakdown of moral codes within their community, with specific reference made to sexual offenses against women and children. Rape is seen as a serious problem.

Residents of low-income areas in various towns in Jamaica feel that their lack of mobility adds to their difficulty in finding employment, and this in turn leads to increased violence. Others have said that the violence itself is a cause of the lack of mobility, due to what they call “area stigma.” One group of youths said everyone in their community is disrespected, by outsiders and the police alike, is branded either a criminal or an accomplice to one, and is therefore unable to secure a job or learn a trade. They said this area stigmatization has led to hunger, frustration, and idleness, encouraging gang warfare and gun violence, with death or imprisonment the ultimate price.

Source: Moser and Holland (1997).

Disempowerment

Participatory studies have shown that nonmaterial factors also contribute to poverty. Isolation, exclusion, and disempowerment are as threatening to the poor as are low incomes (see box M.13).

Box M.13. Disempowerment

The Uganda Participatory Poverty Assessment Project (UPPAP) described powerlessness as the inability to affect one’s surroundings, and showed that poor people suffer directly from being disempowered. The National Integrity Survey additionally found that 40 percent of the users of public services have to pay bribes. Such experiences are not only materially impoverishing, they are also demoralizing. More broadly, people become frustrated when they cannot perceive that they have any influence over public policy. UPPAP reported, for example, that poor people see no effective mechanisms to hold service deliverers accountable for their performance.

Source: Uganda Poverty Reduction Strategy Paper and Joint World Bank-IMF Staff Assessment of the PRSP (2000).

Social exclusion in a broad sense is a consequence of being deprived of citizens' rights. The poor are excluded from the right to participate in decision making; they are not given full civil protections; and they are not asked to take on the responsibilities of being citizens.

The urban poor are prone to social and institutional exclusion and are thus disempowered due to:

Illegitimacy of their residences and work. Most of the urban poor live in informal settlements and are likely to be engaged in casual and informal sector work. They are not addressed by the policy and regulatory frameworks regarding service provision, housing, land, labor rights, and safety nets. That is, they are institutionally and socially excluded in two of the most important areas of their life: work and residence (see box M.14).

Box M.14. Lack of Citizen Rights and Responsibilities

In Kumasi, Ghana, there is a widespread perception that the Kumasi Metropolitan Assembly Chief (the mayor) has been able to control the assembly by rewarding his supporters and penalizing those who oppose him—for example, by withdrawing services from their communities. Those communities that are denied basic services, simply because they do not support the assembly chief, are not protected. They must consequently bribe utility providers for such basic services as emptying their septic tanks.

Equally worrying is the Kumasi Metropolitan Assembly's arbitrary response to the informal sector, which probably represents more than 70 percent of employment in Kumasi. The assembly has adopted a ruthless approach toward informal traders in the central area and regularly leads raiding parties on them. During these raids the traders, who often are among the poorest of the poor, routinely lose equipment and stock.

Source: Devas and Korboe (2000).

Insufficient channels of information. The urban poor do not have sufficient access to information about many essential matters, such as jobs or their legal right to services.

Not being treated as citizens. The urban poor are not given the rights and responsibilities that go with being citizens. They are often assumed to be passive consumers rather than active participants with something to contribute. Simply asking the poor to express their needs and demands is insufficient to empower them. They must also assume the responsibilities that go with being citizens. In some countries, slum residents will express their needs, particularly for infrastructure and urban services, in return for their votes. While they may get the services they require, however, often they are not required to pay for the costs of such services or for the land that they occupy, even at a subsidized level. The public authorities in such cases retain the political advantage of being the sole decision makers in the allocation of resources.

Negative contact with authorities. Government policies can have an important positive impact on poverty alleviation, but many poor people's experience of the state is negative—to many, it is an oppressive bureaucracy that attempts to regulate their activities without understanding their needs. Due to the illegitimacy of their residences and work, the urban poor are vulnerable to corruption (see box M.14). They often have to bribe police and other public officials to be allowed to continue their income-generating activities or to maintain their illegal connections to services.

Geographical isolation. The urban poor have to trade off between the costs of housing and long distances from city centers. Communities at the outskirts of cities are disconnected from job opportunities and urban services.

Technical Note M.3 Interventions at the Project/Program Level

Integrated urban development projects

Table M.1. Slum Upgrading Projects

Type	Multisectoral	
Different approaches	<p><i>Focus on neighborhood improvement</i></p> <ul style="list-style-type: none"> ⊃ Predefined packages of integrated services provided in a coordinated manner ⊃ Defined specific areas or neighborhoods on the basis of service deficiencies and community interest ⊃ Assumed to be replicable in other neighborhoods, based on the experiences of first (pilot) projects ⊃ This type of approach may be most appropriate in cities where there are pockets or neighborhoods without services 	<p><i>Focus on citywide services improvement</i></p> <ul style="list-style-type: none"> ⊃ Provision of a few basic services on an incremental basis in coordination with or as components of larger-scale urban development projects, where main infrastructure networks are built or upgraded ⊃ Reaching a larger share of the urban poor who lack access to basic services ⊃ This type of approach may be most appropriate in cities where most people lack access to basic services
Objectives	Improving quality of life and economic opportunity for residents of specific settlements, through improvements in services and community building	Improving quality of life of the urban poor on a citywide basis, through incremental improvements in the provision of basic services
Components	<ul style="list-style-type: none"> ⊃ Physical improvements: potable water, sanitation, solid waste disposal, storm drainage, roads, sidewalks, footpaths, street lighting ⊃ Provision of tenure security ⊃ Development of marketplaces and other income-generating activities ⊃ Development of clinics, schools, and community centers ⊃ Some of the projects include training of beneficiaries in, for example, sanitary conditions or simple construction techniques 	
Targeting beneficiaries	Geographic area defined by poverty, service deficiencies, and community interest	Target groups defined by their lack of one or more basic services. (Citywide urban poor without access to basic services)
Financing arrangements	<ul style="list-style-type: none"> ⊃ Grant transfer and loans to local governments or other implementing agency by national government and/or external donor/finance organizations ⊃ Local governments contribute to the investment cost ⊃ Community contributes in kind or sometimes in cash (mostly 5–10 percent of the investment costs but in some cases more, such as the 30 percent community contribution to the El Mezquital project in Guatemala), and residents may be asked to pay user fees if private goods such as electricity or water are provided. Public-good services such as access roads are assumed to be covered by general and local tax revenues ⊃ Private-sector firms may also contribute to investment costs 	
Roles of NGOs, CBOs, and private sector	Communities involved at all stages; NGOs mobilize communities; private firms may carry out construction/investment works. The private sector can contribute to the finance.	
Advantages	<p><i>Focus on neighborhood improvement</i></p> <ul style="list-style-type: none"> ⊃ Comprehensive, cross-sectoral coverage of service deficiencies in given geographic areas ⊃ Reaches all residents, including the poorest, within target neighborhoods ⊃ On-the-spot coordination and execution of investments across sectors, as in the cases of installation of pipes, road works, and drainage channels, saves costs and improves efficiency ⊃ Creates high-visibility improvements across targeted area 	<p><i>Focus on citywide services improvement</i></p> <ul style="list-style-type: none"> ⊃ Easy to incorporate into municipal programs ⊃ Addresses linkages of services beyond slum neighborhoods, as it works at city level ⊃ Easy to involve local governments and other service provision agencies in operation and maintenance (O&M)

(Table continues on the following page.)

Table M.1. Slum Upgrading Projects (continued)

Disadvantages	<ul style="list-style-type: none"> ⊃ The cost and organizational advantages of providing a comprehensive package of investments need to be balanced with variations in community demand and priorities ⊃ Does not necessarily address linkages of infrastructure beyond neighborhood communities ⊃ Use of a special implementation unit facilitates investment coordination, but local governments and sectoral agencies need to be involved for sustained O&M 	<ul style="list-style-type: none"> ⊃ Provides limited services rather than a comprehensive package—at least in the short run ⊃ Target groups may not/cannot be defined clearly ⊃ Does not create a high-visibility improvement as it is done incrementally
Impacts	<ul style="list-style-type: none"> ⊃ Projects have reduced unit costs for infrastructure ⊃ Relatively high rates of return on slum upgrading programs, especially when tenure security is provided. The projects generated (greater than anticipated) private investments and created employment in the informal construction industry. ⊃ Projects demonstrated that the poor are willing to pay for services and to mobilize their own savings 	
Conditions for sustainability and replicability	<ul style="list-style-type: none"> ⊃ Need to address the structural distortions in housing and land markets, financial incentives and policies, and urban governance ⊃ Have to be articulated with municipal programs ⊃ Target groups must be defined clearly 	

For more information, contact the Thematic Group on Services to the Urban Poor, The World Bank, Urban Help (email: urbanhelp@worldbank.org). A compact disc (CD) on urban upgrading is also available from, and can be accessed online, at: <http://web.mit.edu/urbanupgrading>; email: urbanupgrading@mit.edu.

Box M.15. How to Move from Slum Upgrading Projects to Large-Scale Upgrading Programs

1. There is no universal model. The content of, and approach to, upgrading programs will vary from one context to another. What is needed is an operating structure that supports and encourages local solutions and local implementation. Local participants are best placed to design and implement solutions.
2. Keep it simple. Larger upgrading projects tend to have better results when simplicity of implementation and content is built in. Local definition of the list of improvements and how to divide the task for their simplified delivery at the local level yields quicker and more appropriate large-scale results.
3. Political commitment is fundamental. The evidence from 20 years of international experience in slum upgrading indicates that the obstacles to scaling up are not mainly financial (low levels of affordability of households or limited public budget), but rather political and institutional. Projects that meet their objectives have had strong endorsement and backing from government. A large-scale program will need even more clearly expressed support, commitment, and leadership from politicians and policymakers.
4. Coalition of all actors is needed. Large-scale upgrading programs call for (1) a broad coalition of participants, each with its area of contribution and agreed-to role; and (2) a convergence of action among the participants, based on a shared vision, common goal, and agreement on a process.
5. Build on existing experience. It is best not to create new institutions but to build on the existing community of practice. The scaling-up challenge is to work with existing institutions, under arrangements at all levels (local and central government, private sector, and so forth), with clearly assigned responsibilities to accomplish this task in concert.
6. The poor can, and are willing to, pay for services. The poor are willing to pay for services if the services respond to their demands, are favorable, and are of good quality. Appropriate policies for cost recovery and subsidies will contribute to scaling-up efforts.
7. Upgrading is affordable if done right. Applying an appropriate standard of infrastructure provision is critical to keeping costs low and affordable. One alternative is to start with low standards but build up incrementally as affordability increases.
8. Security of tenure is important. One of the first steps in designing a large-scale upgrading program may well be the preparatory work needed to move quickly and to scale on the land regularization front, thereby ensuring the security of tenure status of communities being upgraded.^a
9. Include and strengthen municipalities. Programs that carry out upgrading on a citywide scale require evaluation and planning for help to local governments to respond to the additional demands that will be placed on them.
10. Citywide service networks must be able support the upgrading program. A large-scale upgrading program must start with a well-conceived plan of network expansion and expanded service delivery.
11. Communities must participate. Experience overwhelmingly shows that participation (contribution to and involvement in the process of upgrading) by residents in upgrading projects is key to success and the realization of long-term benefits. Ideally, large-scale programs will find ways to help the poor move from powerlessness to inclusion, from vulnerability to assets, and from violence to security.

Box M.15. How to Move from Slum Upgrading Projects to Large-Scale Upgrading Programs (continued)

12. Improving basic services and infrastructure is the necessary base. A well-selected package of basic services and secure tenure can have a substantial impact on the environment and on a community's self-confidence and buy-in, and can be the foundation for add-on actions and programs. Scaling up implies a sequence of actions, many of which can come on stream by sequencing.

- a. While tenure security has proven to be an important condition in many upgrading projects, there are also cases where formal ownership (freehold title) is not a priority. Therefore, cultural context and community priorities must be taken into consideration in dealing with tenure security matters. (See also boxes M.19 and M.20.)

Source: *International Video Conference Series: A Large-Scale Slum Improvement Program*. Summary of presentation by Thematic Group on Services to the Urban Poor-World Bank; The Cities Alliance.

Box M.16. Slum Improvement Project (SIP) in Bangladesh

A UNICEF-funded, community-based program in Bangladesh to improve the slum environment, provide primary health care, and empower poor women living in these communities was initiated in the mid-1980s. By 1994, the project had grown to include 25 cities and towns and 185 slum clusters. The project aims to connect existing urban services to slum communities and to improve institutional capacity to work with the urban poor. The project also emphasizes interagency collaboration and features a national, city, and community management structure.

Major achievements:

- Empowered women by enhancing their economic and social activities through credit and savings schemes and by organizing them around various social activities (40,000 reached).
- On the social capital side, increased awareness of health, sanitation, and community participation.
- Improved significantly the physical and environmental conditions in slum areas. The incidence of diseases such as diarrhea, respiratory problems, and scabies has fallen substantially.

Major constraints and weaknesses:

- The SIP guidelines are not flexible enough to meet the different physical and social characteristics and needs of different groups of poor. Furthermore, they have a bias toward physical or technological solutions.
- The SIP to date has not addressed land tenure.
- The SIP did not contemplate any direct cost recovery for the operation and maintenance of infrastructure facilities, requiring only the contribution of community labor and 500 Bangladeshi Taka (U.S. \$8.70) to a community fund that was to be used to pay community workers. This plan has been only partially realized.
- Dual management by the municipalities and the Local Government Engineering Department of the Ministry of Local Government has produced problems.

Sources: *Upgrading Slum Communities*. Cities Alliance; World Bank; MIT (<http://web.mit.edu/urbanupgrading/>); Siddique and others, Local Government Engineering Department of the Ministry of Local Government, Rural Development and Cooperatives, Bangladesh, World Competitive Cities Congress (1999).

Box M.17. Slum Upgrading in El Mezquital, Guatemala City

This project aimed to improve housing and basic infrastructure; to prompt additional private investment in housing; to develop an efficient and well-targeted subsidy program in addition to substantial cost recovery; to expand the role of NGOs and CBOs; and to improve the performance of urban land markets. The project featured community participation in its planning, execution, and financing. It was supported initially by UNICEF and later funded by the World Bank.

Major achievements:

- Total costs for infrastructure such as water, sanitation, roads, and land were kept to the equivalent of US\$1,300 per family and were largely recovered from beneficiaries.
- In the two years since the investments were completed, infant mortality rates have dropped 90 percent, crime has decreased 40 percent, and there has been an estimated tenfold rise in property values.
- Beneficiaries were encouraged to participate in the planning, execution, and financing of the project. Some 1,200 residents became active members of the residents associations that represented the community in negotiations with city officials and handled financial transactions in the project.
- The community-based organization *Cooperativa Integral de Vivienda Esfuerzo y Esperanza (COIVIEES)*, which has finished implementing the improvements with Bank financing, now operates and maintains the water and sanitation systems. COIVIEES also manages the revolving housing credit program and oversees street and drain maintenance. COIVIEES has begun expanding water and sanitation services to neighboring slums, has set up a training and capacity-building program for CBOs in other poor communities, has bought a new garbage truck, and has initiated a solid-waste management program. COIVIEES has even received a contract from a private developer to build approximately 100 low-income housing units in another part of the town.

Sources: *Upgrading Slum Communities*. Cities Alliance; World Bank; MIT (<http://web.mit.edu/urbanupgrading/>); and *Noti Coivviees*, newsletter, September 1998.

Interventions in land and housing

Table M.2. Site and Services and Core Housing Projects

Type	Single-sector investment
Objectives	<ul style="list-style-type: none"> ⊃ Providing affordable housing to lower-income households or to those that are relocated ⊃ Increasing housing choices at the lower echelons of income distribution ⊃ Introducing new construction techniques (including traditional) and beneficiary organization models to the formal housing sector
Components	<ul style="list-style-type: none"> ⊃ Serviced plots ⊃ Core units such as a kitchen and sanitary facilities or, additionally, a small living space that the owner can expand on an incremental basis (vertically or horizontally) ⊃ Loan schemes for beneficiaries
Targeting beneficiaries	By income group and/or geographic area based on housing, environmental conditions, and tenure insecurity
Financing arrangements	<ul style="list-style-type: none"> ⊃ Grant transfers and loans to a housing agency or local government by central government and/or international donor agencies ⊃ Housing agency or local governments contribute to the investment costs in cash or kind, such as the provision of public land, infrastructure, and social facilities ⊃ Households contribute in kind, through self-help housing constructions, and in cash ⊃ Loans are made available either by formal credit organizations (for example, housing banks) or through NGO microcredit schemes for the purchase of plot and core unit
Roles of NGOs, CBOs, and private sector	<ul style="list-style-type: none"> ⊃ Communities are involved during project preparation/design and implementation phases ⊃ NGOs assist community organizations and mobilize resources for construction and loan repayments ⊃ Small enterprises and microenterprises provide services such as iron works and plumbing
Advantages	<ul style="list-style-type: none"> ⊃ Creates high-visibility improvements across targeted group ⊃ Provides opportunity to introduce diverse construction techniques while providing low-income housing ⊃ Can address sectoral policy and institutional reform issues of housing as well as specific intervention formulas for low-income households
Disadvantages	Difficult to ensure that targeted low-income groups are reached, due to tendency of incorporating design standards higher than the minimum affordable
Impacts	<ul style="list-style-type: none"> ⊃ Like slum upgrading programs, these projects have introduced affordable housing and service standards to permit cost recovery, but only where client consultations have been done correctly and taken into consideration by the concerned authorities ⊃ These projects have shown that low-income people can contribute both in kind and cash if the correct incentives are in place
Conditions for success and replicability	<ul style="list-style-type: none"> ⊃ Standards must be modest in accordance with the affordability and needs of target groups. In some past projects, authorities fearful of repeating squatter/informal settlement quality have set standards relatively high, making the products unaffordable for low-income groups but attractive for better-off households; such projects lead to the inefficient use of subsidies and leave the actual demands of the poor unmet ⊃ Eligibility criteria and selection procedures must be transparent to prevent better-off groups from becoming the main beneficiaries ⊃ Structural and policy reforms in the housing sector, in institutional finance, and in urban management are necessary to make projects replicable

Box M.18. Private Sector and NGO Roles in Site and Services and Core Housing Projects: El Salvador

The facilitating role of the state: Since 1989, the state in El Salvador has gone from being the provider of housing for the poor to being a facilitator. The state's major efforts to guide and encourage housing production, especially for low-income households, include supporting property consolidation and registration and facilitating new lot divisions under the Progressive Urban Development Program. There is also another modality, through which lot divisions are defined and sold to households; this type of division requires only the approval of the concerned municipalities.

NGO activities: The Progressive Urban Development Program has given momentum to NGO activities. More than 15 NGOs work on Site and Services and Progressive Housing Programs, and help households to get loans from FONAVIPO (National Fund for Public Housing). The types of products NGOs produce vary from lots with services to core units (progressive housing) that the owner develops incrementally. Many lot holders build a provisional roof or walls, which they replace little by little with longer-lasting materials; they then gradually enlarge the living space according to their needs and finances. Experience with illegal settlements and with programs sponsored by the state in El Salvador showed that site and services and core housing are more viable solutions to the housing needs of the poor than public provision of finished housing.

The private-sector role: A private company, ARGOZ, has been subdividing and selling lots, with or without services, for a decade. According to its president, the company has sold a total of 250,000 lots throughout the country through its local branches. ARGOZ defines the settlements as "progressive social development plotting," divided and registered as rural parceling in accordance with an article of the political constitution. Clients are also offered loans for home improvements and expansions and for other household needs up to half the amount of the advance payment, at a monthly interest of 3 percent. Prospective clients are asked to fill out a questionnaire about their socioeconomic conditions. Low-income people are given priority as much as possible. The company reserves 18 percent of its profit for basic infrastructure, such as street works and electrical connections.

The El Salvador example shows that when regulations are changed to create an encouraging context, stakeholders such as NGOs and the private sector will mobilize to provide services and sites for the urban poor. The program carried out by the private sector could be improved to ensure that poor households are the prime beneficiaries, and could be scaled up through more supportive regulatory adjustments and loan mechanisms.

Source: Parada (1996).

Table M.3. Land Regularization and Tenure Security Programs

Type	Policy based	
Objectives	<ul style="list-style-type: none"> ⊃ Improve tenure security for urban poor ⊃ Reinforce improvements in housing through mobilizing community resources ⊃ Support development of land and housing markets by establishing property rights ⊃ Increase local revenue basis ⊃ Land-tenure regularization schemes are carried out either as a part of slum upgrading projects or alone at national, city or neighborhood scale 	
Different approaches	<i>Property rights (ownership)</i> <ul style="list-style-type: none"> ⊃ Property right (ownership) is provided through land sharing or direct titling of the plots to the occupants ⊃ In community ownership, land belongs to the community with individual members owning the development and improvements, but not the plot 	<i>Use rights</i> Right to use the land is provided, but ownership is not. In some projects dwellings are given simple place recognition ("addressage"), facilitating access to services
Targeting beneficiaries	<ul style="list-style-type: none"> ⊃ Residents of particular slum areas subject to upgrading ⊃ Nationwide for those who occupy public land 	
Financing arrangements	Varies according to the type of intervention: <ul style="list-style-type: none"> ⊃ Land can be sold to de facto owners with varying level of charges ⊃ Mortgage programs can be devised to enable communities to buy the land that they occupy; for example, the Community Mortgage Program in the Philippines 	Generally modest ground rents are charged
Roles of NGOs, and CBOs	NGOs may organize communities and help CBOs and assist with mobilizing savings, especially when mortgage programs are involved	

(Table continues on the following page.)

Table M.3. Land Regularization and Tenure Security Programs (continued)

<p>Advantages</p>	<ul style="list-style-type: none"> ➤ Encourages investment in housing construction and improvements ➤ May improve access to formal channels of credit ➤ Widens property-tax revenue base of local authorities ➤ Encourages efficiency of land and housing markets and allows transaction of property ➤ Can address sectoral policy and institutional issues 	<ul style="list-style-type: none"> ➤ Makes it easier for the poor to get plots that would otherwise be beyond their means ➤ Decreases likelihood of land price increases and the consequent forced moves of tenants ➤ Easy to apply since it does not create political and social conflicts; for example, it does not reward those who break the law ➤ Simpler to apply in terms of administrative procedures
<p>Disadvantages</p>	<ul style="list-style-type: none"> ➤ Governments may be reluctant to regularize land tenure for squatters, especially as a nationwide program, as this may be seen to be protecting the property rights of people who break the law ➤ Issuance of land documents can create considerable conflict, especially in places with multiple forms of property rights, such as Indonesia; where squatters paid for shared title land illegally; or where more than one owner exists for the same land ➤ Property rights can push up land and housing values and may force tenants to move out ➤ Nationwide applications (slum amnesty programs), if not carried out carefully, include all illegal houses, even the ones erected with speculative expectations ➤ Administratively complex and time-consuming for authorities 	<ul style="list-style-type: none"> ➤ Does not provide the user with a collateral to use for loans ➤ Conflicting results regarding the contribution to house improvements ➤ Cannot be sold, bought, and bequeathed officially. During economic hardships the property (housing or a part of the land) cannot be transferred into cash easily ➤ Perceived as less safe and less free
<p>Conditions for success</p>	<ul style="list-style-type: none"> ➤ Cultural context, affordability, and willingness of households should be considered carefully. Property rights may not automatically lead to expected outcomes, such as increases in housing improvements or increases in property-tax revenue (see boxes M.19 and M.20) ➤ Experiences in some countries show that property rights, when offered together with the provision of services, stimulate considerable investment in house construction and improvement and increase local tax revenue for local authorities 	<p>To mobilize household resources for home improvements, residents should be guaranteed compensation for the houses if they have to be displaced</p>
<p>Systems should be flexible: use rights or protected tenancy rights given initially can be gradually upgraded to full ownership rights, depending on the needs and priorities of communities</p>		

For more information, contact UNCHS (Habitat), Shelter Branch Tenure Security Program, P.O. Box 30030, Nairobi, Kenya (<http://www.unchs.org>)

Sources: Payne (2000); Farvaque and Mc Auslan (1992); World Bank Housing Policy Paper (1993); Farvaque-Vitkovic and Godin (1998).

Box M.19. Tenure Security Without Title: Freehold Titles May Not Be a Desired Option

In Egypt, a modest ground rent (hekr) is charged to informal settlers on government or unclaimed desert land. This does not grant title and cannot be transferred, but it ensures that if households have to be displaced they will receive compensation for the buildings they have erected on their plots. Such an arrangement distinguishes between the ownership of land and the ownership of the property, and it makes it easier for the poor to get plots that would otherwise have been beyond their means.

During the 1980s, the government of Pakistan offered freehold titles to about 100,000 households living in Karachi's squatter settlements. Only 10 percent eventually took up the offer. The remainder presumably considered the administrative charge for the title deeds not worth paying (perhaps because it did not confer sufficient benefit over their situation) or did not wish to expose themselves to paying property taxes. In Karachi the provision of titles does not generate a corresponding increase in tax revenues. This may be because households that perceive they are secure refuse to pay taxes or because tax rates are too high for these households to afford.

In another case, in Cairo, Egypt, residents of a squatter settlement rejected offers of freehold titles because they considered the cost too high. The offer of titles, together with the provision of services, nonetheless stimulated considerable investment in house construction and improvement and increased land values.

Source: Payne (2000).

Box M.20. Priorities of the Poor

In conditions of dire poverty, such as in the tenements gardens of Colombo, Sri Lanka, or in places where people prefer to invest in their home villages instead of committing to stay in an urban area (such as in Papua New Guinea), improved tenure has not necessarily increased housing investment. In places where squatters feel relatively secure, they may be reluctant to accept legal tenure for fear of future taxation or of identifying themselves to the authorities, as has been observed in Mexico City.

Source: World Bank Housing Policy Paper (1993).

Finance-based interventions**Table M.4. Municipal Development Funds (MDFs)**

Type	Multisectoral—Programmatic design (line of funding for subprojects)
Objective	<ul style="list-style-type: none"> • Municipal credit supply; improvement in quality of investment preparation/selection and in municipal creditworthiness
Components	<ul style="list-style-type: none"> • Physical improvements: potable water, sanitation, solid waste disposal, storm drainage, roads, sidewalks, footpaths, street lighting • Development of marketplaces, other income-generating activities, and social infrastructure • Technical assistance to municipalities in investment programming and fiscal management
Targeting beneficiaries	<ul style="list-style-type: none"> • Eligibility for loans defined by such factors as poverty, service deficiencies, and community size • Evidence of beneficiary demand and commitment is also a major criterion for the selection of subprojects
Financing arrangements	<ul style="list-style-type: none"> • Loans to local governments • Local government may also contribute up-front to investment costs • Beneficiaries may contribute in kind or in cash
Roles of NGOs, CBOs, and private sector	<ul style="list-style-type: none"> • NGOs can be active in subproject identification, preparation, implementation, cofinancing, and community mobilization • CBOs are involved in defining priorities with municipalities • Private sector can be involved as contractor for execution of physical works
Advantages	<ul style="list-style-type: none"> • Supports decentralized authority to local governments by providing funding for local investments • Supports municipal reforms to enhance financial management and creditworthiness • Can set stage for eventual shift to funding local investments through financial market intermediaries

(Table continues on the following page.)

Table M.4. Municipal Development Funds (MDFs) (continued)

Disadvantages	<ul style="list-style-type: none"> ⊃ Programmatic financing approaches can pose a greater risk than area-specific projects of dispersing funds too widely through unrelated small projects, potentially reducing their economic development impact ⊃ Requires institutional capacity at local level ⊃ MDFs can become highly politicized in credit decisions and thus may not promote sound prioritization of investments or sustainability of services
Conditions for success and sustainability	<ul style="list-style-type: none"> ⊃ Local governments need to have responsibility and capacity for mobilizing fiscal resources. These types of programs have done better where decentralization has transferred responsibilities for local investment and services, and local revenue mobilization, to municipalities that have also improved their creditworthiness ⊃ Experiences have been much better with MDFs that work with the private financial sector ⊃ MDFs have been most effective when they serve as transitional arrangements that help city agencies learn to mobilize and allocate resources and serve as the first stage creating a commercially based municipal credit market ⊃ Sectoral departments must cooperate to provide the necessary technical support and evaluation of subprojects ⊃ Detailed operational guidelines are required to support municipalities as they plan and implement the subproject ⊃ Project loans have to be allocated to each municipality through a transparent formula—for example, one based on population size and/or service deficiencies ⊃ Beneficiaries should be involved and consulted, and, because they are expected to contribute financially to cost recovery, they should be told the cost implications of alternative investments

Box M.21. Different Types of Municipal Development Funds

There are two basic types of MDFs. The first type, currently more common in the developing world, operates primarily as a substitute for government capital grants to local authorities. These programs supply capital through MDFs at below-market rates, often combining subsidized loans with grants. Typically, MDFs of this type have a monopoly in lending to the municipal sector. Such MDFs exploit the favorable terms of their loans to impose stricter standards of project preparation on localities and to incorporate central or state government investment priorities in determining which projects should be funded. Credit Local de France and several other MDFs in Western Europe have evolved through financial deregulation from closed-circuit lending institutions, which obtained capital at below-market rates from state grants and lent to municipalities at below-market rates, to institutions that compete freely with private-sector lenders.

The second type of MDF is intended to serve as a bridge to the private credit market, preparing the municipal and financial sectors for private lending to municipalities. MDFs of this type lend at market rates of interest, allocate capital through arm's-length decisions of commercial banks or other private sector lenders, require that private lenders assume the credit risk of municipal loans, and try to establish a track record of municipal creditworthiness. One such market-oriented MDF developed in the Czech Republic. There, the MDF borrows fund from abroad, with a national government guarantee, then on-lends the funds to domestic commercial banks, which in turn lend to municipalities. The municipalities do all project selection and preparation. The commercial banks perform all credit analysis and accept all repayment risk. The parastatal MDF merely confirms the creditworthiness of the commercial banks to which it on-lends and makes capital available to nine banks participating in the system, so as to strengthen competition.

The two models of MDF need not be strict alternatives to each other. MDFs of the first kind normally have been introduced in environments where there is virtually no private lending to local governments and where public authorities believe that private credit markets cannot be developed in the short and medium term.

MDFs have also tried to fund investments for the poor. Financiera de Desarrollo Territorial (FINDETER) in Colombia is a market-oriented MDF, operating as a rediscount facility for commercial bank lending to the municipal sector. FINDETER supplements the banks' project appraisal capacity and thus improves the technical quality of their lending, but the banks take the commercial risk. Unlike some other MDFs, FINDETER has a poverty-alleviation mandate that it has tried to fulfill by giving particular attention to institutionally weak small towns and by favoring investments in essential services, mainly water and sanitation.

Source: Urban Finance Colloquium: Summary Report of Habitat II (1995).

Box M.22. Tamil Nadu Municipal Development Fund, India

The World Bank-financed Tamil Nadu Urban Development Project, which included slum upgrading of 72,000 households among other components, set up a loan and grant program as the Municipal Urban Development Fund (MUDF). By October 1996 the government-owned MUDF had financed more than 500 subprojects in 90 out of 110 municipalities in Tamil Nadu. Building on that success, in 1996 the MUDF was converted into a new, financially and legally autonomous financial intermediary with the participation of private capital and management: the Tamil Nadu Urban Development Fund (TNUDF). Existing municipal funds in some other projects may evolve in the direction of restructuring, enabling them to draw the private sector into small-scale urban investments. TNUDF will be managed by an asset management company, a joint venture between the government and private investment companies. The new arrangement is expected to bring private-sector management expertise to the selection and financing of subprojects sponsored by either public or private agencies, and to facilitate access to the private capital market for creditworthy municipalities. It is expected that the government's share will eventually be reduced through sale to interested investors and that on-lending interest rates will be made to conform to market rates. A separate grant window for poverty-oriented investments, such as slum upgrading and cost of resettlement, will also be handled by the asset management company and will provide technical assistance to municipalities in preparing such investments and improving their own financial management.

Source: Tamil Nadu Project Appraisal Document (1999).

Table M.5. Social Funds and AGETIPs

Social Funds (see box M.23)	AGETIPs (Agences d'Exécution des Travaux d'Intérêt Public)—Executing agencies for public works
<p>Social funds are nongovernmental intermediaries that normally channel grant resources, according to predetermined eligibility criteria, to small-scale projects for poor and vulnerable groups. The projects are proposed, designed, and implemented by private and public agencies, such as local governments or NGOs, or by the community groups themselves. Eligibility criteria are laid down when a social fund is established, but the individual subprojects are not determined at this point. Social funds are vested with investment programming powers and enjoy special status, such as exemption from prevailing public sector rules and regulations relating to procurement and hiring. Social funds select and fund projects. Social funds are typically located in the prime minister's office, president's office, or a line ministry</p>	<p>AGETIPs are delegated contract management agencies for public works. In the case of a typical social fund, the social fund agency selects eligible subprojects and channels financing to them; in addition to performing both of these functions, an AGETIP also prepares and executes the selected subprojects on behalf of the agency sponsoring the subproject (in most cases a municipality). The sponsoring agency surrenders authority for the execution of the subproject to AGETIP management until delivery of the completed works. Thus, AGETIP management assumes more functions than does the typical social fund agency. However, the newer-generation AGETIPs more often focus on the execution of physical works, and municipalities select the projects. AGETIPs are commercially oriented, not-for-profit private associations usually governed by national NGO or "private association" laws</p>
Type	Multisectoral—Programmatic design (line of funding for subprojects)
Objectives	<ul style="list-style-type: none"> ➤ Financing urban services subprojects through an enclave agency ➤ Providing funds for investments on a competitive basis, according to rules and eligibility criteria ➤ Generating temporary urban employment through developing community facilities and infrastructure
Components	<ul style="list-style-type: none"> ➤ Physical improvements: potable water, sanitation, solid waste disposal, storm drainage, roads, sidewalks, footpaths, street lighting ➤ Economic infrastructure such as the development of marketplaces and other income-generating activities ➤ Microfinance (social funds only) ➤ Improvement of dwellings (social funds only) ➤ Social infrastructure and social services: clinics, schools, community centers
Targeting beneficiaries	<p>Eligibility for funding defined by such factors as poverty, service deficiencies, community size, often based on poverty maps. Evidence of beneficiary demand and commitment is a major criterion for the selection of subprojects</p>

(Table continues on the following page.)

Table M.5. Social Funds and AGETIPs (continued)

Financing arrangements	<ul style="list-style-type: none"> ⊃ Mainly grant transfers to municipalities or other implementing agency ⊃ Grants sometimes may be transferred to communities or NGOs directly ⊃ Local government may contribute to investment costs ⊃ Community or NGO sponsor contributes in kind or sometimes in cash
Roles of NGOs, CBOs, and private sector	<ul style="list-style-type: none"> ⊃ NGOs and CBOs can be active in subproject identification, preparation, implementation, cofinancing, and community mobilization ⊃ Private sector may carry out or oversee physical works
Advantages	<ul style="list-style-type: none"> ⊃ Enclave entities like social funds or AGETIPs can fill the gap in situations where the formal government institutions are weak; for example, in countries emerging from periods of civil or economic crisis ⊃ Nonpoliticized character of funds and agencies ⊃ Efficiency and responsiveness in funding mechanisms ⊃ Cost-effective and timely results (in the case of AGETIPs, due to contract management expertise) ⊃ Flexibility: Can respond to shifts in demand and priorities of subproject sponsors and can adapt criteria based on experience ⊃ Allows demand to be expressed across range of subsectors and service levels ⊃ Encourages various intermediaries, including NGOs and community groups, to participate in subprojects and work with formal-sector agencies ⊃ Supports and strengthens decentralization
Disadvantages	<ul style="list-style-type: none"> ⊃ Approach biased against communities lacking capacity to identify priorities and prepare proposals ⊃ Does not address linkages among investments within areas of city or across sector networks and therefore may not realize potential efficiencies of coordinating water and sanitation systems, road works, resettlement. ⊃ Generally lacks emphasis on municipal and sectoral institutional reforms ⊃ Inadequate maintenance of finished works often a problem ⊃ Diversification of social, productive, economic, and income-generating activities can strain the agencies' capacity ⊃ Programmatic financing approaches can pose a greater risk than area-specific projects of dispersing funds too widely through unrelated small projects, potentially reducing their economic development impact
Conditions for sustainability and replicability	<ul style="list-style-type: none"> ⊃ Appropriate technical standards to which infrastructure is developed or rehabilitated in the light of community demand and the capacity of the organization receiving the subproject ⊃ Availability of recurrent budgets, which require complementary sectoral and public finance reforms, as well as mobilizing funds at the household, municipal, and national levels ⊃ Firm commitment of sectoral agencies and/or community maintenance committees to operations and maintenance ⊃ Autonomy, transparency, and accountability: Social funds and AGETIPs must be largely free from political influences. The best assurance of autonomy is the agencies' bylaws, operational manuals, and independently selected staff ⊃ Capacity building is essential at both the community and intermediary level to sustain microprojects. Investments should be made in building the organizational capacities of communities, as well as their technical skills ⊃ One of the weaknesses of social funds is their failure to address linkages among investments within a city or across sector works. However, some second-generation projects are aiming for greater compatibility with sector policy ⊃ Better targeting: Improving methods of reaching the intended beneficiaries, systematically introducing poverty maps, and revisiting targeting mechanisms ⊃ Client and stakeholder consultations: Best-practice social funds and works currently include systematic consultations with clients and broader feedback through consultation with stakeholders at town meetings. Community involvement beyond project identification should be ensured ⊃ Monitoring outcomes on the ground is necessary

Source: Frigenti and others (1998). See also chapter 9, "Community-Driven Development."

Box M.23. Benin’s Variations on Social Fund and AGETIP-Type Agencies for Urban Public Investments

Organizational structure and division of responsibilities: Two complementary agencies were set up in Benin, SERHAU and AGETUR, to improve the programming and execution of urban public investments. The Société d’Études Régionales d’Habitat et d’Aménagement Urbain (SERHAU) was originally a government unit within the Department of Urban Affairs with a mandate in urban planning, grassroots participation, research, and feasibility studies. The agency is a mixed public-private and for-profit firm. By design, the shares of the state and parastatal entities are 48 percent of the firm’s assets; the other shareholders are private companies and individual investors. SERHAU’s service menu includes feasibility and other studies, technical assistance to municipalities, public investment programming for priority microprojects, coordination with ministerial investments in urban areas, and simple cadastres at the city and neighborhood levels to improve local resource mobilization, and grassroots participation. L’Agence d’Execution des Travaux Urbains (AGETUR) is simply an executing agency that implements works on behalf of the municipality. The reason for this dual setup was twofold: first, to free municipalities and government from having to maintain the in-house capacity to plan and program microproject investments; and second, to separate planning and programming from implementation of urban works. SERHAU has a distinct commercial orientation and sells its services to the private and public sectors. AGETUR operates through the system of contract management: its institutional autonomy is coupled with business accountability, private management culture, and staff selected competitively from the private sector. For its services AGETUR charges management fees of 4 percent of the amount of the contract. It covers its operating costs with incurred income, and the general assembly decides on the use of any surplus.

A community-driven subproject: SERHAU piloted a bottom-up approach that allied a local NGO and a large low-income community to prepare an improvement plan. The Menontin neighborhood in Cotonou was selected for an improvement plan that covered environmental sanitation, public hygiene, self-care health prevention, a neighborhood clinic, and small local infrastructure works. The residents identified and partly financed the works, and AGETUR, with the participation of local residents, implemented them. This component illustrates Benin’s hybrid use of both a social fund and contract management agency.

Long-term objectives: A key distinction of the Benin program was the inclusion of long-term objectives other than urban employment creation. The long-term objectives were to (1) prepare a public investment strategy in the urban sector; and (2) begin reforms in urban management practices.

Achievements: Benin’s two agencies have succeeded because they take a businesslike approach toward small public works. With only 20 employees, AGETUR has created a significant number of temporary urban jobs in the construction sector—about 1 million person-days in four years. Over four years it has contracted about 190 microprojects in local facilities, such as roads, sidewalks, drainage, schools, clinics, and other social infrastructure. Seventy-five percent of the projects cost less than US\$200,000 and were built by local small and medium-sized enterprises. The procurement process was reduced to an average of two months, in contrast to at least seven months in the public sector; and the average turnaround time for paying bills was 12 days, in contrast to more than three months in the public sector. In addition, because of the intense competition that developed among local contractors, the price of a square meter of street paving, for instance, was reduced by at least 20 percent. On the planning side, SERHAU has helped prepare a rolling five-year investment plan and developed an up-to-date “addressage” system to identify all plots and streets. It has also helped the public authorities to locate their infrastructure and identify (through street numbering) their customers.

Less successful aspects: There has been less progress than hoped toward the long-term goal to increase local fiscal resources, build the capacity of local government staff, and develop and maintain a municipal development strategy. The stakeholder assessment in Benin also defined other shortcomings of this operation: (1) mayors need to be more involved in all aspects of subproject choice; (2) communities and their leaders should be more closely involved to develop greater ownership for maintaining works as well as for long-term sustainability; (3) NGOs and beneficiaries need more maintenance training, and construction firms need more management training; (4) there should be more competition among material suppliers; and (5) the financing plan for microprojects must provide for more real grassroots motivation and sensitization.

Source: Frigenti and others, “Local Solutions to Regional Problems,” World Bank (1998).

Table M.6. Microfinancing Housing and Home Improvements

Type	Single sector (line of funding for housing/home improvement)
Objective	Providing loans for low- and moderate-income households or communities, according to rules and eligibility criteria
Types of subprojects	Incremental upgrading of an existing dwelling or a new core unit
Targeting beneficiaries	Eligibility for funding defined by poverty and lack of access to official/conventional finance schemes
Financing arrangements	<ul style="list-style-type: none"> ⊃ Small loans (typically US\$300 to US\$3,000) at market rates of interest ⊃ Amortized over short terms (often two to 10 years) ⊃ Sources of funding include government funding; small savings of households; specialized banks such as Grameen Bank in Bangladesh; foreign donor funding; and savings associations ⊃ Loan securities: peer pressures/solidarity groups as guarantee mechanisms; and individual guarantees—in cases where households lack legal titles, NGOs help them secure small loans through amassing documentation
Roles of NGOs, CBOs, and private sector	<ul style="list-style-type: none"> ⊃ NGOs are generally the key actors in packaging small loans to low-income households. They: mobilize external and community resources; prepare plans and cost estimates for construction work; and prepare other necessary documentation for the credit file for loan underwriting. ⊃ The private sector may contribute to lending
Advantages	<ul style="list-style-type: none"> ⊃ Enables low- and moderate-income households to improve their housing conditions or become homeowners ⊃ Increases the productivity and efficiency of construction ⊃ Loans permit households to save, invest, and use assets more efficiently
Disadvantages	<ul style="list-style-type: none"> ⊃ Clients of these systems are more sensitive/vulnerable to macroeconomic structural adjustments—for example, to increases in interest rates and decreases in real wages—than customers of conventional finance schemes. ⊃ Solving the collateral and credit risk problem (underwriting) at reasonable cost may depend on the legal framework and acceptance of paralegal practices that govern the rights to property by the legal framework. ⊃ In many countries the commercial financial sector is conservative and reluctant to lend money for such programs. Bad examples where guarantee mechanisms fail can easily degrade the confidence of individuals as well as financial organizations in microcredit schemes, making funding even more difficult. ⊃ Peer pressures and solidarity group guarantee mechanisms may become ineffective in the case of large groups of beneficiaries.
Impacts	<ul style="list-style-type: none"> ⊃ Projects have revealed that the poor are willing to mobilize their own savings and can pay debt services if their needs and constraints are understood and programs designed accordingly. There are concrete examples to convince finance organizations that loans to the poor can work as long as their circumstances and needs are understood. ⊃ In many countries, such programs have enabled poor people to improve their living conditions. ⊃ Increases the self-confidence of poor households, and especially of women
Conditions for success	<ul style="list-style-type: none"> ⊃ Changes are required in relation to the property rights in legal frameworks; for example, paralegal practices should be permitted to solve collateral and credit risk problems at reasonable cost. ⊃ The cultural and social characteristics of societies should be taken into consideration when designing credit schemes.

Box M.24. Slum Upgrading, Credit, and Saving Schemes in India

Background information: The Self-Employed Women's Association (SEWA) Bank is a support service that was developed in response to demand from the members of the SEWA Union, a trade union registered in 1972. SEWA is an organization of poor, self-employed women workers in the informal sector who earn a living through their own labor or small businesses. They are the unprotected, informal labor force of India, without salaried employment or welfare benefits. The informal sector provides 93 percent of India's total labor force, and more than 94 percent of the female labor force works in this sector. SEWA Bank is owned by self-employed women through individual shareholdings, and its policies are formulated and ratified by its own elected board of women workers. The bank is run by qualified managers, who are held accountable to the board. Established in 1974 with 4,000 depositors, the bank now has more than 125,000 poor women depositors and a total working capital of 210 million rupees. It recently received additional funds of 28.8 million rupees from HUDCO (Housing and Urban Development Corporation Limited) and 27 million rupees from HDFC (Housing Development Finance Corporation). The bank's average loan repayment rate is 94 percent.

The Mahila Housing SEWA Trust (MHT) was formed in 1994 in response to a growing need from self-employed women. The major objectives of the trust are to improve housing and infrastructure conditions of poor, self-employed women; to create improved access to shelter-related services, including credit, legal, and technical advice; and to influence policy in order to provide improved living conditions to self-employed women.

Slum networking project: The urgent need to improve the quality of life of slum dwellers led to the concept of a pioneering effort called the Slum Networking Project (Parivartan). Each family in the program has to contribute 2,100 rupees; in addition, local industries contribute 2,000 rupees per family, and a balance of 2,000–3,000 rupees per household is provided by the Ahmedabad Municipal Corporation. The aim is to provide a comprehensive service package to every family living in slums, consisting of the following: individual water supply, underground sewerage, solid-waste disposal service, storm water drains, internal roads and paving, street lighting, and landscaping. To date, 18 slums have been identified for upgrading and two pilot cases, Sanjay Nagar and Sinheswari Nagar, have been completed. Two factors are critical to the program's success: a basic "buy-in" concept: unless each household living in the slum makes its cash contribution, the physical work is unable to move ahead; and reliable financial service: a credible financial institution respected and trusted by the community provides financial and credit-related services. SEWA Bank was an appropriate financial intermediary for the program, playing the dual role of centralized cash collection point prior to the handover to the corporation and, where necessary, providing credit to meet individual contributions.

Credits: In cases where residents were unable to make their full contribution to the program, SEWA Bank made available loans of up to 1,600 rupees, repayable in minimum monthly installments of 100 rupees or as a lump sum. Interest, at 13 percent, is calculated on an outstanding-balance basis. Most of the women in the Sinheswari Nagar pilot area who have taken loans to meet their cash contribution are widows and thus economically worse than off than others.

Individual initiatives: There are many other instances throughout Ahmedabad where the poor have begun to pay voluntarily to install drinking water and/or sanitation facilities. SEWA Bank has facilitated this process by disbursing loans to individual women who wish to upgrade their existing infrastructure facilities. In the Panna Lal ki Chali slum in the Saraspur area of Ahmedabad, a number of SEWA Bank depositors have taken loans to build their own toilets. Loan amounts vary from 3,000 to 3,500 rupees. Engineers from the Mahila Housing SEWA Trust provide the technical supervision for building the toilets.

Mobilization of savings: Mahila Housing SEWA Trust field workers have been visiting Sinheswari Nagar since 1996, urging residents to save. Thus, when physical upgrade work began in August 1997, residents were ready, their contribution safely deposited in individual accounts at SEWA Bank.

Source: UNDP–World Bank Water and Sanitation Program: South Asia Region Field Notes (2000).

Annex N

Social Protection: Technical Notes

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Technical Note N.1 Cross-Cutting Issues for Public Social Protection (SP) Interventions

A number of themes cut across SP interventions. Here we briefly discuss four—gender, institutional delivery mechanisms, political economy, and targeting.

Gender in SP programs

A growing body of empirical evidence shows that there can be significant differences between men and women with regard to their vulnerability to the same risk and their exposure to different risks. These differences can be summarized as follows: (a) particularly among poorer households, men and women do not pool risk within the household; (b) there are differences in labor incentive effects and transaction costs between men and women; and (c) money in the hands of men and women gives rise to different outcomes for individual and household welfare (see Ezemenari, Chaudhury, and Owens 2001 for references and a review of some of these studies). The reasons for these differences are grounded in gender and social norms.

The evidence also shows that, particularly for poorer households, men and women in the same household (a) engage in different forms and activities for risk management, (b) do not pool risk in the household (shocks to an individual's income have a direct effect on that person's welfare. In a household that pooled risk, a shock to an individual's income would be expected to be buffered by the income of others in the household, thereby reducing the effect of the shock), and (c) experience gender differences regarding their vulnerability to risks. The reasons for this include differences in the types of assets held by men and women and the facts that risk preferences differ between men and women and that men and women may be exposed to different risks or may experience differing intensities of the same risk. The household decisionmaking process will ultimately also affect how these translate to household and individual outcomes.

Haddad (1999) outlines four reasons why income held in the hands of men and women within the same household might lead to differences in the welfare of individuals in the household:

1. Societal and gender norms may assign women as caretakers to ensure household members receive an adequate share of resources to build their human capital asset base.
2. Because women spend more time with children, they may have greater preference than men for spending on children's welfare.

3. Women may have a tendency to buy higher-quality (and therefore more expensive) calories than men, either because of time constraints or because their caring roles make them more aware of quality differences.
4. Women and men have different income flows and time constraints, and therefore different transaction costs. Because women's income tends to come in smaller, more frequent amounts, it is more likely to be spent on daily household needs than the relatively larger, less frequent income of men, which tends to be spent on more expensive items.

Hopkins and others (1994) examined the latter issue for Niger, finding that households in Niger are not smoothing consumption and that men and women do not pool income within the household, and concluding that not only does the gender of the income earner matter, but that the timing of gender-specific income also affects seasonal expenditure patterns.

Social protection programs can exacerbate or contribute toward the reduction of gender inequalities. Box N.1 outlines examples of some programs and their potential gender effects. In order to get a sense of these effects prior to design and implementation, it is advisable to conduct a gender analysis to minimize unintended effects and to determine potential areas of inequalities and potential remedies. This requires conducting a vulnerability analysis and an examination of the potential gender-based incentives and disincentives of the program.

Box N.1. Gender Effects of Select SP Programs	
Program	Gender effects
Widow's pension in India (Chen and Dreze 1995)	A pension scheme benefited men more than women because the targeting mechanism did not recognize the distinctions between the nature of the vulnerabilities faced by women and men—specifically, that women have limited freedom to remarry, have insecure property rights, face social restrictions on living arrangements, and have restricted employment opportunities. In addition, the administrative requirements to gain access to benefits was more cumbersome for poor, illiterate widows. In recognition of these effects, a widow's pension was introduced, which increased the access of widows to pension benefits and relieved the biases against women.
"Wallet to purse" child benefit program in the United Kingdom (Lundberg, Pollak, and Wales 1997)	Transfer was changed from a reduction in the amount of withheld taxes from the father's paycheck to a single child benefit program that instead made a nontaxable weekly payment to the mother (hence, "wallet to purse"). This policy change represented a substantial redistribution of income within the household: by 1980, child benefits amounted to 8 percent of average male earnings in the United Kingdom and led to a significant increase in expenditures on women's and children's clothing relative to that on men's clothing.
Pensions in South Africa (Duflo 2000)	It has been shown that pension benefits to women in this program lead to large increases in anthropometric measures for girls (but no effect on that of boys). In contrast, transfers to men have no effect on the nutritional status of children.
PROGRESA in Mexico (Adato and others 2000)	Evaluations show that transfers given to women have increased women's household decisionmaking. The PROGRESA transfer is means-tested and is conditional on children being sent to school and on the use of health facilities.
Rice subsidy in Sri Lanka (Sahn and Alderman 1995)	The rice subsidy has decreased the probability of female labor-force participation in rural areas, without affecting the labor of men. In rural and urban areas, there has been a substantial reduction in the number of hours worked by both men and women, in response to receiving the rice ration.
Maharashtra Employment Scheme: Public Works in India (Datt and Ravallion 1994)	The project has displaced different activities for men and women—that is, it has decreased unemployment for men and given rise to decreases in leisure/domestic work for women (the authors do not have information to distinguish between time devoted to leisure and domestic work). The results also show significant gender cross-effects in time allocation in Shirapur (men assume more own-farm work when women join the project).
Public emergency work (PEW) during the 1930s and 1940s in the United States (Finegan and Margo 1994)	The authors hypothesize that PEW dampened the added worker effect because the wives of unemployed men (who would have been eligible for work relief) would have been more likely to be in the labor-force. The study results imply that more women would have been in the labor market in the absence of PEW.

Program	Gender effects
Contribution-based programs (unemployment insurance and pensions) (Edwards 2000; Barrientos 1998)	Differences in access to benefits between men and women can arise for the because <ul style="list-style-type: none"> ⊃ women's labor-force participation tends to be more variable relative to that of men and is characterized by spells of inactivity and hours and mobility constraints; ⊃ women live longer (and in most countries retire earlier—this is relevant for pensions), but experience more occupational segregation and gender discrimination; and ⊃ women are more conservative in investment decisions (most relevant for private pensions). These factors together imply lower wages for women over their lifetime, relative to those of men, and lower benefits.

Vulnerability analysis

A gender dimension should be added to the analysis of vulnerability discussed in section 17.2 of the main chapter. One approach is to go through the life cycle from infancy to old age, outlining the various risks by gender (this approach can also be conducted for different groups in a country). Identification of the sources of risk and vulnerability can shed light on whether to target specific individuals within a household or just stop at the household level.

Second, analysts should ask whether there are different patterns of assets and forms of coping for men and women. Evidence suggests that assets held by men and women may differ in quality in poor households. Men and women also have different informal networks and transfers, and SP programs may affect these in different ways. Gender analysis of vulnerability and assets or risk management/coping mechanisms can help identify the most pertinent indicators.

To reflect differences in risk perceptions and response and to capture how a shock may alter the bargaining position of individuals in a household, indicators should aim to capture the relative differences in welfare between men and women arising from the shock. Some of these could act as early warnings of the potential worsening conditions of women's welfare and of the welfare of the household in general. Among the kinds of indicators that could be measured are the ratio of male-to-female wages, differences in asset holdings between men and women, the ratio of female consumption to male, and changes in the health and nutritional status of women relative to men.

Gender of the transfer recipient matters

The next question related to targeting is whether the transfer should be given to the man or to the woman. The evidence to date suggests that men and women do not necessarily pool income within households (World Bank 2001); instead, household expenditure patterns are affected by the pattern of income shares earned or controlled by men and women within the household. It has been found that an increase in the share of household income earned or controlled by women leads to increased spending on food and on children's health and education.

This does not mean that the transfer should always be given to the woman, however. Although evidence shows that women experience increased empowerment and decisionmaking status in the household when they receive transfers (Subbarao and others 1997; Adato and others 2000), studies suggest that men and women might hold different preferences between boys and girls, depending on gender roles, social norms, and vulnerability (World Bank 2001). In some societies, mothers may favor boys over girls because sons ensure access to assets and networks that can provide security in old age. In other societies, fathers may favor girls over boys because daughters are seen to be more caring for their parents in old age.

Related to the issue of whom to give the transfer to is the determination of the objective of the transfer; for example, if the transfer is to raise household income above the poverty level, it may not matter who receives it. However, empirical evidence suggests that targeting women leads to increased expenditure on children, food, clothing, and commodities, which ultimately leads to the improved capabilities of children. If this is the objective of a transfer or SP program—regardless of whether boys or girls stand to gain the most—then evidence suggests that there may be a higher payoff for a given benefit level if women are the target. This is an issue that needs to be explored in any given country context. It is,

however, important to keep in mind that attempts to redistribute bargaining power within the household may be met by stiff resistance and conceivably the use by some males of the threat of violence to appropriate the transfer from the female.

Incentive effects differ for men and women

Men and women face different time constraints arising from their gender roles. As a result, transfers or SP programs will have different labor incentive effects—implying also different transaction costs between men and women. It is therefore important to determine to what extent the transfer will lead to a reallocation of time between various activities for men and women, and especially from which activities. It is also important to determine if the program may exacerbate the time burden of women relative to that of men.

As we have highlighted, some studies suggest that household participation in certain safety net programs has resulted in a decline in female labor-force participation. When a woman in a household participating in a safety net program opts out of or reduces her time spent in the labor market, there is a corresponding reduction in her share of household income—and there may also be a drop in total household income, depending on factors such as the loss in labor income and the magnitude of the transfer. In addition, many studies find that girls within the household serve as a substitute for the mother in some home activities; changes to the way in which parents allocate their time to labor—as effected, for example, by an SP intervention—can therefore also have implications for the time allocation of children.

Where women choose as a consequence of program participation to devote more time to leisure and household work, it is difficult to reach any normative conclusions as to the effects of this decision. Further investigation is needed to assess whether or not such a change brings about adverse effects on individual members of the household (for example, a reduction in child schooling expenditures or unequal impacts for boys and girls) and whether or not the bargaining power of women is adversely affected. Also, even though greater consumption of leisure is rarely an objective pursued by policymakers in the developing world, given that leisure is a “normal good,” the utility of the household may increase with increases in the voluntary consumption of leisure. Even where a transfer program results in a negative labor-supply response, it might effectively raise household utility.

Given that a mother’s time away from home may imply greater time allocated by girls toward home production (potentially to the detriment of schooling), or that responsibilities at home may draw women from the labor market, studies have shown that programs to reduce child care costs promote increased labor-force participation and leisure for women. For example, Lokshin (2000) finds that, in Russia, subsidies to reduce the costs of market-based child care are more effective in increasing labor-force participation and hours worked by mothers than are increases in wages. Similarly Lokshin, Glinskaya, and Garcia (2000) find that in Kenya, higher costs of child care reduce the labor-force participation of mothers. In addition, higher child care costs significantly decrease girls’ probability of being at school while having no effect on boys’ schooling. These studies point to the potential of subsidized child care in increasing female employment and income.

Issues pertinent to contribution-based programs

Box N.1 shows the differences in earnings potential between men and women, as defined by their gender roles, that can occur as a result of structural rigidities in the labor market. Gender analysis of contribution-based programs should examine the pattern of labor-force participation for men and women—for example, do gender-based sources of rigidities exist, or discrimination?—and the implications for the levels of benefits they may receive. Where rigidities are identified, it is important to consider these in the design of SP programs to ensure equal access for men and women.

Finally, it is important to note that social norms can have a strong influence on whether or not women have access to such programs; for example, in some societies certain kinds of work are not socially acceptable for women, who would therefore be precluded from benefiting from public works programs offering that kind of work.

Institutional delivery mechanisms

Institutional mechanisms are key to effective public action in support of SP. One of the main lessons of experience is that even well-designed programs and policies will be ineffective if the institutional structure to support them is inadequate. Adequate institutions require not only adequate budget and

personnel (which are hard enough to achieve in most countries), but also incentives to the different actors that are congruent with the desired program outcomes. Incentives depend on program structure. There is no optimal structure, but a variety of options with attendant pros and cons.

In general, programs may be delivered through public provision and production of services, public provision with private production, or private (possibly with some public participation) provision and production of services. In this context, provision encompasses the design and organization of a service, including its financing or purchasing. Production involves the creation of a service, such as building a road or administering a health or nutrition program.

Under public provision and production of services, the government is the main (or sole) service provider and there is a choice about how centralized or decentralized provisions will be. In a centralized system, the central government often takes charge of both provision and production of services. In a decentralized system, decisionmaking (and at times financing) powers are left to local government (see Campbell, Petersen, and Bazark 1991). There are two types of decentralization of service delivery: principal-agent and local fiscal choice.

- In the *principal-agent approach*, the central government retains a large measure of control over the program design, but most transactions are implemented by local governments acting as agents of the central government. This approach enables the central government to concentrate on the promotion of policies and policy design, and enables uniform standards to be set. It may, however, also limit the ability or agents to adapt programs to local conditions. In India's Integrated Child Development Services program, for example, the central government's control of program design resulted in the provision of a common package of services throughout the country. State governments implement the program, acting as agents of the central government. The program has had a low impact on health outcomes of preschoolers, however—a result that has been blamed in part on the limited involvement of local communities. In contrast, an advantage of the principal-agent approach is that it better enables government to ensure, subject to political constraints, that funds are distributed across the country according to poverty requirements. This is not so easily accomplished under the local fiscal choice approach.
- In the *local fiscal choice* approach, the central government gives local governments, community-based organizations, or even citizens significant decisionmaking powers, including powers to determine the pattern of spending. This approach allows for some degree of power sharing among different levels of government or between the government and local citizens.

In the private delivery model, one or more private entities take on provision and production, sometimes alongside the government. A range of private service deliverers, such as private companies, private contractors, NGOs, and community organizations, can be involved. Because SP programs rarely recover the full program cost from beneficiaries, they are rarely fully financed by the private sector; the government, however, can buy the services of the private deliverer, an especially useful approach when the private deliverer has a comparative advantage in either managing or producing the service.

The private delivery model may incorporate any one of these institutional arrangements:

- *Government provider, private producer.* In this instance, the government is the provider, but the private entity produces the service.
- *Private provider and producer.* An example of this approach might be a community-based organization that designs, organizes, and administers a program.
- *Public-private collaboration on provision and/or production.* In this case, the government and community groups or the private sector are involved in designing and organizing the services, which are often produced collaboratively.

Past experience in many countries has shown that delivery mechanisms of public provision and production can lead to a top-down approach that can compromise the sustainability of projects and programs. The desire for improved efficiency, equity, and sustainability has led instead toward the private delivery model, as illustrated by the increasing trend of program delivery through social funds in poorer countries. More recently, greater emphasis is being placed on the role of informal institutions because the poor are concentrated in the informal sector.

In most poor countries, one key issue is how to devise ways to link government intervention to local formal and informal indigenous institutions. It is increasingly accepted that local communities and voluntary organizations can play a crucial role in the delivery of programs. Table N.1 highlights aspects of program delivery where this "third sector" has a comparative advantage.

Table N.1. Public-Private Model versus Local Communities and Organizations—the Third Sector

<i>Task</i>	<i>Public sector</i>	<i>Private sector</i>	<i>Third sector</i>
Best suited to public sector			
Policy management	E	I	D
Regulation	E	I	D
Enforcement of equity	E	I	E
Prevention of discrimination	E	D	D
Prevention of exploitation	E	I	E
Promotion of social cohesion	E	I	E
Best suited to private sector			
Economic tasks	I	E	D
Investment tasks	I	E	D
Profit generation	I	E	I
Promotion of self-sufficiency	I	E	D
Best suited to third sector			
Social tasks	D	I	E
Tasks that require volunteer labor	D	I	E
Tasks that generate little profit	D	I	E
Promotion of individual responsibility	I	D	E
Promotion of community	D	I	E
Promotion of commitment to welfare of others	D	I	E

Note: E = effective, I = ineffective, D = depends on context. “Third sector” refers to local community and voluntary organizations.

Source: Osborne and Gaebler (1992), as cited in Dia (1996), table 4-1.

Both public and private models have their advantages and disadvantages, but there are cases when one model has a clear advantage over the other.

- ⊃ In cases where the policy instrument for targeting (such as the wage rate) can be controlled and enforced by the state or central agency, it is easier to achieve outcomes with public than with private delivery.
- ⊃ In programs where the overwhelming need is to reduce the transaction costs for the poor, the private delivery model seems to have an advantage over publicly administered programs.
- ⊃ Whenever there is a need to ensure that there is a distribution of resources by region according to overall poverty requirements within the country, the public model appears to have the advantage. However, the geographic distribution of resources tends to be ill targeted in demand-driven programs, regardless of whether they are privately or publicly delivered. The higher absorptive capacity of the less-poor regions may be one of the reasons for poor targeting under this delivery arrangement.

Note: This section draws heavily on Subbarao and others (1997).

Political economy

Political economy issues are important with respect to at least three aspects of SP programs: their size and objectives, their details of design, and the possibilities for reforming individual programs or systems. (See box N.2 for a summary of lessons.)

First is the issue of how narrowly to target individual programs or the scope of the program mix. To the extent that budgetary support, at least over time, depends on voter support, and that voters support programs of which they are direct beneficiaries, broadly targeted programs would seem to have more support and more sustainability than narrow ones (Gelbach and Pritchett 1995). Voters may support programs, even narrowly targeted ones, for reasons other than becoming an immediate beneficiary, however: they may fear that they or those they care about would need the program in the future. Support

for programs can also come from power groups that are not recipients but suppliers. All these possible sources of support need to be considered in determining if a particular program is politically viable.

A second question is whether programs should serve the “old” poor or the “new” poor during policy reform or economic crisis. This decision has implications for program design because the type of program that would benefit the new poor is likely to be different from programs that would benefit the old poor, who are faced with structural poverty problems. In addition, the new poor are likely to have more political weight than the old poor (Subbarao and others 1997).

Once the scope of a program and its basic target group have been established, other aspects of its design may be affected by issues of political economy. For public works programs, the menu of projects, the standards to which they are built, or the degree of seasonality in hiring may reflect compromises between the interests of the nonpoor who may benefit from the works and the technocratic attempts to achieve self-targeting in the applications of the works themselves. Choices about targeting mechanisms and how they are implemented have political repercussions (see “Targeting,” p. 517); agricultural or trade lobbies also may seek to influence decisions on targeting—for example, whether benefits are delivered in cash or in food.

Finally, when a set of programs is in place, reforming one or more of those programs will create winners and losers. Identifying interest groups, particularly those likely to lose out, and ensuring that they are adequately compensated will enhance program viability and sustainability. In the reform of pay-as-you-go (PAYG) pension programs, the issues are often intergenerational. Also, their size may be disguised by fiscal accounting that allows a hidden debt to build up rather than accounting that requires explicit borrowing, which politicians find less palatable.

Adequately addressing issues of political economy in designing or reforming SP programs is made more difficult because government cannot be assumed to be a unitary actor. Competing views and political interests within government and across agencies may lead to the delivery of programs that favor some groups over others.

Specific types of programs have their own issues of political economy. For example, targeting food programs is a tricky issue. Political pressure to expand the coverage of food subsidy programs in many countries has resulted in increased expenditures at the expense of spending on investments for growth.

Box N.2. Some Lessons Learned in the Political Economy of Safety Nets

- 3 Safety nets may reduce some of the structural constraints contributing to long-term poverty, creating new bases of economic growth and political support for the government (Graham 1994).
- 3 A fundamental political aspect of safety net design and targeting is the choice of whether to help the poor and ultra-poor or the more vocal and politically powerful groups. Usually the poor are not the most vocal, and few governments have incentives to help the very poor, who are usually politically weak (Salmen 1990). This reduces the government's interest in supporting the poor if it perceives its safety net programs as a way to rally political support for reforms. Favoring the vocal instead of the needy is often more politically expedient, but can also be more costly and inefficient. Finally, reaching the poorest segments of the poor may be the most costly of all, further reducing the government's incentives for targeting the ultra-poor.
- 3 Political pressure to deal with poverty immediately can result in expedient but ill-planned policies (Subbarao and others 1997).
- 3 Market reform changes the relative strength of political coalitions and presents the government with a unique opportunity to redirect public resources to the most needy (Graham 1994). Most successful adjustment programs have incorporated some form of safety net, usually targeted at a specific group (Haggard and Webb 1993). Both the timing and pace of economic reform affect the probability that resources will be redirected to the very poor. That probability is higher when reform is implemented immediately after an election and when the reform is fast and dramatic.
- 3 Open (democratic) political systems are usually better at implementing programs for the poor. Authoritarian regimes operate according to the regime's own preferences, and they will not necessarily heed public pressure supporting programs for marginal groups. An open political system provides more opportunities for building coalitions to support new resource allocations (Graham 1994). However, there is no empirically tested relationship between democracy and helping the poor.
- 3 Institutional political autonomy can affect the effectiveness and targeting of social assistance programs. Autonomy can increase speed, effectiveness, and evaluation, but it also increases the risks of sudden reduction in budgets that are controlled by government. Institutional autonomy is more of a concern for longer-term projects than for short-term emergency or other transitional programs (Subbarao 1997).
- 3 The financing of safety nets by NGOs and international organizations can increase the potential of targeting the poor because these organizations are not subject to the domestic political constraints of governments. However, foreign financing of safety nets without a political commitment from the government to sustain the programs is likely to fail (Graham 1994).

The result is fiscal drain that necessitates scaling down food subsidy programs (as has occurred in India, Bangladesh, Morocco, Tunisia, Sri Lanka, Pakistan, Zambia, and Egypt), and scaling back such programs has led to urban riots in some countries, notably Morocco, Egypt, Tunisia, and Zambia. Another issue in the political economy of food programs is the phenomenon of rent seeking, which is closely tied to the form in which programs are implemented—that is, through price subsidies or through ration shops. The rent-seeking behavior of implementing agents such as ration shop dealers and politicians has allowed these groups to capture much of the benefits of the subsidies in India (Moojj 1999; Radhakrishna and Subbarao 1997) and Bangladesh (Adams 1998). Implementing self-targeting measures can greatly reduce the leakage that occurs as a result of such rent-seeking behavior.

Public works programs are highly visible and must be implemented locally, making them especially susceptible to political influence. Political pressure can affect the wage rate offered by such programs, the choice and location of the project, and the program's size. Three interest groups are usually involved in public works design and execution: the politicians and bureaucrats who influence the size and design of the program, the poor who benefit from the program, and politically important groups that may or may not benefit from the program, such as private contractors and large farmers. The conflicts of interest that often arise can affect the program's design and sustainability, and may result in inefficient allocations of resources. For example, while labor-based methods of infrastructure works have been shown to be highly cost-effective and have created employment opportunities in Rwanda, Ghana, and Botswana, governments often resist them. In the three countries cited, labor groups tend to be unorganized and politically weak, so they cannot influence program design. Furthermore, the private contractors usually hired for such projects pay extremely low wages and substitute labor for capital when low wages are resisted. Finally, interagency politics and competition for resources may result in institutional support for inefficient programs that do not provide the maximum benefit for the target group.

Wage subsidy programs have been used for the long-term unemployed, those from severely disadvantaged areas (such as areas with high unemployment), and young people. They aim to reduce social exclusion by helping their participants regain contact with the job market. The subsidy is typically a payment, as a proportion of the wage, made to firms to induce them to hire program participants, but the level and duration of these subsidies vary significantly between programs and countries. It is also sometimes alleged that these programs are instituted by the government to assist specific interest groups, such as powerful employers or employer groups, by making it possible for them to hire workers at a large subsidy—in effect, abusing the program by using it as a permanent subsidy program.

Social funds are demand-driven programs. There has been concern that the poorest people may not be able to organize themselves, articulate their demands, and benefit from social funds as well as the less poor. In response to these difficulties, program designers have tried to use a demand-management approach, targeting support for project preparation to poor areas and sometimes capping resources from wealthier areas. Recent evidence suggests that this has been successful in ensuring that the poor have effective access (Rawlings, Sherburne-Benz, and van Domelen 2001).

Examples of political influence on the design and effectiveness of social funds include Peru's FONCODES Social Fund, the Emergency Social Fund in Bolivia, and Senegal's AGETIPs. Peru's FONCODES Social Fund was established as an autonomous body to deliver social services and provide assets and credit to communities. Most of the FONCODES projects are demand driven and targeted to poor communities, and data show that the assets created by FONCODES reach a larger proportion of households, particularly poor households, than other government programs. Much of this success is attributed to the program's autonomous structure, which protects it from the inefficiencies of government bureaucracy—that said, empirical evidence shows that expenditure allocation to FONCODES has been highest during election years and that those regions with the largest proportion of votes for the president have received a relatively larger allocation of funds (Schady 1999).

Another area with specific issues of political economy is pension reform. Political forces during the early transition of the economy in Eastern Europe led to a burst of early retirement and disability in much of the region. These changes hastened the financial deterioration of the mature PAYG pension schemes of countries such as Hungary and Poland, forcing the governments to look at alternatives. The short-term crisis led to a debate that in turn raised public consciousness of how the system is financed and of the long-term challenge of an aging population. Facing resistance from entrenched pension fund bureaucracies and skeptical unions, governments waged public information campaigns to explain the proposed partial privatization of each system and the need for reductions in future benefit levels to balance the system.

Targeting

Targeting will be an issue wherever a subsidy is provided to one group and financed by others. It applies with most force to safety nets, which are usually straight transfers of one sort or another, and the detailed treatment provided here is most pertinent to that range of SP interventions. For social insurance interventions (pensions, unemployment insurance), it applies to the extent that benefits deviate from contributions. Thus, if a worker's pension depends only on the contribution made during the worker's lifetime, targeting would not be an issue per se. Most social insurance programs include elements of cross-subsidy in their design, however, and targeting will apply to some extent. Unemployment support programs, for example, may include a means test in addition to rules about job loss, raising problems analogous to those of other programs.

At first it would seem that restricting transfers to the poor, as measured by their consumption or income, would have the largest impact on poverty. There are, however, tradeoffs involved. First, targeting is a tool whose benefit is the increased efficiency of expenditure. Its use, however, has costs that must be balanced against the benefits in deciding how finely to target and what instrument to use. The most obvious costs are the administrative costs associated with monitoring household incomes in countries where the informal sector is predominant. Targeting criteria may also alter incentives and change household behaviors in ways that may entail costs of their own. For example, if program benefit levels are based on income, there will be a disincentive to work, and targeting programs to only a small group of beneficiaries may limit their political support and thus their budget. A second targeting tradeoff is that no practical mechanism is perfect. Some non-needy will always get benefits (errors of inclusion) and some needy will be left out (errors of exclusion). In general, actions to lower one kind of error will raise the other. Because fine income-based targeting must address these tradeoffs, the idea of using other, more observable characteristics as targeting tools is appealing. Some of the major options are reviewed below. Finally, targeting in a crisis is likely to be even harder than targeting is normally because the correlates of poverty can change quite rapidly.

Categorical targeting approaches are based on individual or family characteristics that are correlated with poverty but that are also readily observable: age and disability are frequent categories. In general, categorical targeting is the least precise. It can be administratively quite simple—when based on age, for instance—or can require somewhat more elaborate procedures; for example, to verify a disability or that a worker has been fired and is actively searching for work. Categorical targeting is usually politically acceptable so long as the categories are those that might pertain to anyone, such as age, disability, and unemployment. Targeting by ethnic group could in many countries be relatively precise, but its political feasibility varies greatly. Scheduled castes in India, the Malay in Malaysia, and Inuit and other native populations in Canada have been explicit target groups, for example, but targeting the Roma in Eastern Europe or specific ethnic groups in African countries has not usually been seen as politically feasible.

Geographic targeting is based on the fact that the poor are often concentrated in some areas. Many of the lessons from geographic targeting come from social funds (especially in Bolivia, Honduras, and Peru) and from transfer programs linked to schools or clinics in poor areas. Geographic targeting is, by definition, imperfect: there will always be some pockets of poverty in wealthier areas and some well-off households in generally poor areas. In general, the smaller the geographic unit used, the more accurate the targeting. The availability of data for small geographic units and the practicalities of running programs will, however, limit how small the unit used can be. There may be tradeoffs between economic efficiency and political viability. Consider, for example, a case where a country is divided into provinces and provinces into districts. The most accurate targeting would involve choosing the poorest, say, 100 districts. In many countries, however, such a selection would exclude whole provinces, whose representatives in the legislature would probably not therefore be supportive of the program. If the program were to select the poorest 20 percent of districts within each province, the legislative support base would be stronger, but the targeting efficiency lower.

Proxy means tests are an increasingly popular approach to targeting. This approach originated in Chile and is now used in Colombia, Mexico, some local Brazilian programs, and Armenia and is being piloted or designed in the Russian Federation, the Kyrgyz Republic, Zimbabwe, and Ecuador. Proxy means tests are based on the collection of multiple indicators at the household level that are more easily observed than income but correlated with it; these indicators are used to construct a score that determines whether or not the family should receive support. The following points have emerged from recent experience:

- 3 Detailed analysis of data from household surveys on poverty and the data correlates is needed to underpin the indicators used and their weights in proxy means tests.

- The formula will usually include characteristics such as the size and composition of the household, the quality of its housing, ownership of consumer durable goods, and education and perhaps occupation of household members.
- The number of indicators to use in the formula will be related to the institutional capacity of the relevant government agencies. In general, using more indicators will give better predictions and targeting, but will raise administrative costs. The bigger influence on costs, however, is whether the indicators are easy to verify or ones that the interviewer can reasonably take on faith.

Proxy scoring systems help identify the nonpoor and avoid errors of inclusion. Ensuring that the poor are included requires that programs have extensive outreach in areas where the poor are likely to live to be sure that they get registered.

In *community-based targeting*, a local authority or committee is empowered to make decisions about who should receive program benefits. Sometimes an existing structure is used; for example, in Jamaica, the justice of the peace or a minister may nominate candidates for food stamps. In other cases, new structures are formed; in Indonesia, for example, new committees of officials and parents were formed to decide which children should get scholarships to help prevent dropout. Sometimes these structures receive central guidelines, while in other cases the criteria are developed locally (see Conning and Kevane 2001). There is little evidence available on how well such programs work. There are hypotheses that local information is likely to be much more accurate and complete than information reported in a ministry office or to a social worker who visits the village or neighborhood only rarely. Conversely, there are also hypotheses about drawbacks that may affect community-based targeting systems—including, for example, that they may overburden the capacity of those charged with the new task, that they may generate conflict over control of the resources, and that they may be captured by local elites, perpetuate patterns of discrimination, or reinforce existing differences.

Self-targeting means that a subsidized good or service is available to all but is designed in such a way that only the poor would choose to use it. Hard physical labor paying low wages will not interest the nonpoor, for example, who will self-select out of the program. Similarly, broken rice will be bought by the poor but not the nonpoor. The accuracy of self-targeting depends a great deal on the details of the scheme. In general, the larger the benefit, the less accurate it will be. Self-targeting is often achieved by imposing a cost to participation—formally, through a work requirement; informally, by having long queues for service, or through stigma. These costs will lower the participant's net benefit from the program and must be considered in understanding how cost-effective the program is. Self-targeting is appealing in that it provides a gradual exit criterion: once individuals or families are back on their feet after a crisis, they will opt out of self-targeted programs.

Technical Note N.2 **Stylized Summary of Program Characteristics and Good Practices**

This note summarizes what is known about, and what it is reasonable to expect from, a given program intervention. To the extent feasible, it includes quantitative information on program features to provide a basis for judging whether a given program's targeting outcome, or administrative cost, for example, is as good as achieved elsewhere, or whether the program may be operating below its potential. Where feasible, references are also included to more comprehensive overviews of the intervention and to specific country examples. These should help those interested in reforming or instituting programs of a particular type to learn more about the issues involved.

The standards refer to reasonably well-designed and implemented programs. They do not cover the spectacular failures that are all too common because of some flaw of either design or implementation.

Fact sheets are provided on the following programs:

- Program 1: Public works
- Program 2: Social funds
- Program 3: Agricultural input programs
- Program 4: Energy subsidies
- Program 5: General food-price subsidies
- Program 6: Housing subsidies
- Program 7: Supplemental feeding programs

- ⊃ Program 8: Food stamps programs
- ⊃ Program 9: School feeding programs (SFPs)
- ⊃ Program 10: Scholarships or fee waivers for schooling
- ⊃ Program 11: Unemployment benefits (UB)
- ⊃ Program 12: Severance pay
- ⊃ Program 13: Wage subsidies
- ⊃ Program 14: Job-search assistance (JSA)
- ⊃ Program 15: Training and retraining programs
- ⊃ Program 16: Microenterprise development assistance (MEDA)
- ⊃ Program 17: Fee waiving in health care
- ⊃ Program 18: Health insurance
- ⊃ Program 19: Needs-based cash transfers (social assistance)
- ⊃ Program 20: Mandatory contributory schemes for old age, death, and disability
- ⊃ Program 21: Noncontributory schemes for old age, death, and disability
- ⊃ Program 22: Disability inclusion programs
- ⊃ Program 23: Family allowances

Program 1: Public works

International experience. Public works programs have been adopted by several developing countries in Asia, Africa, and Latin America. The largest programs are found in India and Bangladesh. Governments often turn to public works in crises due to macroeconomic or agro-climatic shocks in which a large number of poor become temporarily unemployed. Such programs were recently implemented in the Republic of Korea, Indonesia, and Thailand, for example. Some aspects of public works in different countries are summarized in table N.2.

Institutional structure. Programs are usually implemented by line ministries of the government, private contractors, nongovernmental agencies, or a combination of these.

Typical benefit level. A market or below-market wage for unskilled labor, usually heavy physical labor. Wages can be paid in cash or in kind, usually in the form of food.

Typical coverage. This is variable. The Maharashtra Employment Guarantee scheme in the 1980s, regarded as one of the most successful large public works schemes, covered only 18 percent of households in the bottom income decile, and these only for a few days or weeks of work a year. In terms of person-days of employment created, India's programs are very large (employment in the nationwide program Jawahar Rojgar Yojana reached 1 billion workdays by 1995); Chile's program in the 1980s was also large, covering as much as 13 percent of the labor-force. Perhaps more typical, however, are programs that cover only a couple of percent of the workforce, providing three or six months of continuous employment. The large public works programs quickly implemented in Indonesia, Thailand, and the Republic of Korea after the 1998 financial crisis created (or aimed at creating) more than 225 million, 55 million, and 25 million workdays, respectively, and helped limit the negative impact of the crisis on the poor. Programs are usually not meant to function as a permanent escape route from poverty, but to provide a means to smooth the consumption of poor households during short periods of unusual hardship.

Range of administrative costs. On a portfolio of projects with reasonable economic benefits, the combined administrative costs, equipment, materials, and skilled labor typically run to 40–60 percent of the total cost, leaving a share of cost devoted to wages for the unskilled of around 60–40 percent. Workers often have to forgo some income to participate and often face transportation costs, so the net benefit is even lower. These programs can be considered cost-effective only if, in addition to serving as a self-targeting mechanism for distributing cash, they provide substantial benefits through the assets created.

Usual targeting mechanisms. The main mechanism is self-targeting through the use of a low (preferably below-market) wage. The works themselves may be targeted to poor areas. In agricultural zones, it is best to target them to the season of slack labor demand. To increase the number of beneficiaries, some programs also cap the number of days or weeks any individual can participate in the program.

Country	Program type	Year	Financing	(millions)	(US\$)	to total cost	(US\$)	Program wage/remarks
Bangladesh	Food for work	1982-83	90% external	400	1.1-1.5	0.4	52.70 (1985)	Program wage was less than the prevailing agricultural wage.
	Food for work	1991-92	90% external	15	1.6	0.5		
	Cash for work	1991-92				0.6	46.85 (1990)	Program wage was less than the prevailing agricultural wage.
India	Cash for work (National, JRY)	1991-92	Entirely domestic	830-850	1.3	0.5-0.6	28.40 (1990)	Program wage was equal to the statutory minimum wage.
	Cash for work (Maharashtra Employment Guarantee Scheme)	1991-92	Entirely domestic, via a special employment tax	100-180	1.2	0.51		Program wage was less than both the market and minimum wage until 1987; program was raised to the minimum wage thereafter. Female participation was high.
Pakistan	IGPRA I-III Cash for work	1984-95	Largely external	23	2.7	0.51	61.40 (1985)	Program wage was lower than the prevailing local market wage for unskilled labor.
	IGPRA I Cash for work	1984-87	Largely external	5.9	2.5	0.34	—	
	IGPRA II Cash for work	1984-87	Largely external	11.97	3.7	0.59	—	
	IGPRA III Cash for work	1992	Largely external	5.15	2.8	0.6	—	
Philippines	Food for work	1986-87	External (World Food Program)	—	—	—	61.0 (1988)	Total (food plus cost) wage rate was higher than the market wage; program was poorly targeted.
	Cash for work	1990	ILO/IBRD ^a	300,000	3.2	0.5		Program wage was about 25 percent higher than agriculture market wage; program was poorly targeted.

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Range of targeting outcomes. If the wage is set low enough, errors of inclusion can be quite low; but if the wage is set too high, public works programs can attract workers from outside the labor-force or from reasonably well-paid jobs. Programs can be targeted to poor areas to help achieve better targeting, especially if there is rationing of jobs. Typical programs tend to reach only men, unless specifically designed to include women, because of the type of work involved, the distance from people’s homes, or restrictions imposed to limit the number of applicants.

Unintended effects. The program maintains the incentive to work, but may result in some workers switching from less steady or less well-paid work to the public works project. There are thus issues of forgone earnings, which can be as high as half or more of the gross earnings on the job.

Political economy. This is usually good because it maintains workforce participation and can aid social cohesion. External benefits to nonpoor from the assets created can also increase public support.

Best suited to these groups. Those best suited are families with excess labor, especially in slack seasons for agriculture or those in the urban informal economy. Such programs definitely are not appropriate for the elderly or children, and they can incur very high opportunity cost for the working poor in formal sector jobs. Single-parent, female-headed households or others with tighter than average time constraints may find it difficult to access the program. Explicit design features need to be incorporated to increase the participation of women because most of the jobs traditionally involve construction skills more typically held by men. For instance, a program can pay attention to issues such as child care or distance from home, or it can specifically fund projects designed by women’s community groups. (See also chapter 10, “Gender.”)

Additional sources: See Horton and Mazumdar (1999); Jalan and Ravallion (1998); Ravallion (1990, 1998); Ravallion and Datt (1995); Ravallion Datt, and Chaudhuri (1993); Subbarao (1997, 2001); Subbarao, Ahmed, and Teklu (1996); and Subbarao and others (1997).

Program 2: Social funds

International experience. Social funds started in the late 1980s, and there are now variants in more than 50 countries in all regions of the world. The mechanism has proven quite simple to set up and operate across all kinds of country circumstances. Some aspects of the performance and impact of social funds are thoroughly described and documented. Other aspects, such as spillover effects on social capital and local capacity building, are less well understood.

Institutional structure. Unlike the other programs listed in this technical note, this is a delivery mechanism more than a kind of intervention. The social fund is usually an autonomous agency, providing a pool of funds to which various groups, such as community groups, municipalities, NGOs, and individual clinics or schools, apply for funding to benefit targeted groups (poor communities, the disadvantaged, and excluded groups). Historically, most funding goes to the construction, rehabilitation, or maintenance of small-scale infrastructure, although there are some examples of social funds more heavily focused on supporting small enterprises and microenterprises, youth training, community capacity building, and the delivery of community-based social services. The social fund’s responsibility usually centers on the selection and financing of projects. Implementation is handled either by the agency that made the proposal, directly by beneficiaries in the form of local project committees, or by a private contractor.

Typical benefit level. This depends on the resources available. The overall level of resource transfers is generally in the range of 0.1 percent to 1.0 percent of GDP annually, but social funds can have the ability also to attract incremental external resources targeted to poor and vulnerable groups and communities. At the microeconomic level, community projects typically range from US\$5,000 to US\$100,000. Estimates of cost per beneficiary vary widely, depending on the type of community intervention. For example, health interventions typically range from US\$10 to US\$100 per beneficiary and education infrastructure from US\$100 to US\$400, although wide differences exist between countries. Temporary employment benefits during infrastructure execution are typically priced at prevailing market wages.

Typical coverage. Coverage rates are difficult to determine. Social funds usually reach a large share of poor communities within a few years of operation. Over time, cumulative beneficiary figures reported by social funds may even surpass national population figures because one community (or individual) may benefit from several interventions, each of which counts them as a beneficiary. Participation rates calculated from household surveys are unreliable: households may not identify themselves as participants because social funds do not execute programs directly, but through intermediaries. Coverage rates

in terms of temporary employment generated through infrastructure investments were found to be typically below 1 percent of the labor-force in the case of Latin America.

Range of administrative costs. Three percent to 15 percent.

Usual targeting mechanisms. At the macroeconomic level, investments are usually targeted using poverty-adjusted geographic criteria to create a transparent and objective mechanism for allocating resources between communities and regions. Without this, political patronage and capture of program benefits by the better-off and more technically capable regions is a risk. To ensure that poor communities and the poor within better-off areas have access to the program, social funds have invented a broad range of solutions for reaching remote areas and marginal or excluded groups, including conducting information and education campaigns (often in indigenous languages), setting up regional offices to reduce the transaction costs of applying for funding, limiting the menu of interventions to public goods more likely to be used by the poor (for example, primary health care and education), and financing community access to technical assistance that will enable communities to prepare project proposals. Through these strategies, the geographic targeting of social funds has consistently improved over time.

Range of targeting outcomes. This is usually progressive. Employment benefits tend to be less well targeted than employment schemes that use below-market wages. However, evidence from Peru shows that 57 percent of FONCODES workers were poor and 36 percent extremely poor. In Bolivia, about 70 percent of workers were in the lower half of welfare distribution. Data on household incidence of investment benefits are difficult to obtain because projects deliver community-level benefits; however, in those cases where data are available, evidence is positive. In Honduras, 40 percent of FHS (Honduran Social Investment Fund) resources go to the lowest two deciles of household income distribution. In Peru, 52 percent of FONCODES education investments benefit households in the lowest 40 percent of the income distribution and 40 percent of non-education-related resources reach the lowest quintile. In Argentina, more than 80 percent of beneficiary households are rated “poor” by the terms of basic needs indexes. Most leakage occurs in cases of income heterogeneity within communities (when better-off households cannot be excluded from community-wide benefits), in cases of certain types of investment (sewerage and small enterprise investments are often less able to reach the poorest), and because of the ability of more capable communities (usually neither the poorest nor most remote) to successfully organize and submit proposals.

Political economy. This is usually quite good because the funds reinforce local initiatives and spread benefits among many agencies. Incentives to use the availability of discretionary funds (as opposed to entitlement programs) for political objectives need to be tempered by the establishment of objective resource allocation criteria and transparent reporting of fund activities.

Best suited to these groups. Abetting community-level development efforts, especially those centered on small-scale interventions rather than long-range program support. Social funds should be considered when existing supply-driven programs do not reach many poor communities and vulnerable groups; when a SP strategy includes building longer-term capacity at the community level; in crisis situations, such as emergency and postconflict reconstruction efforts; or as a vehicle for testing innovations in program design and operating procedures, such as community-based service delivery and interventions for certain groups, such as indigenous groups, street children, and the disabled. Unless specific measures are implemented to ensure women’s participation in the elaboration of projects and the project decision, women tend not to be involved in decisionmaking processes.

Additional sources: See Bigio (1998); Frigenti and Harth (1998); Goodman and others (1997); Morely, Siri, and Zuckerman (1997); and Rawlings, Sherburne-Benz, and van Domelen (2001).

Program 3: Agricultural input programs

International experience. The objective of agricultural input programs is usually to increase agricultural production (and incomes) rather than to provide income transfers directly. Input coupons have been used in some Eastern European countries to compensate farmers for loss of other subsidies and to promote private input markets (Romania). Direct distribution of agricultural inputs is found in some African countries (Malawi, Zimbabwe, Ethiopia).

Institutional structure. Programs can be operated by the Ministry of Agriculture in collaboration with local governments (for the identification of beneficiaries), the private sector (supplies, banks, and transport), and other agencies (for the distribution and redemption of coupons).

Typical benefit level. Vouchers for farmers to buy agricultural inputs amounting to about 30 percent of expenses on the specified inputs (Romania). Starter packs containing fertilizer and seeds are sometimes distributed (Malawi, Zimbabwe).

Typical coverage. Coverage varies, but typically involves all households with land holdings of a certain size.

Range of administrative costs. Input coupons are fairly similar to food stamp programs, sharing in particular their logistical aspects. Costs are higher for input distribution programs than for coupons programs, because transporting, storing, and distributing inputs in bulk is much more expensive than moving coupons around—even taking into account the need to set up an administrative mechanism for retailers to reclaim cash from the government in exchange for the coupons they accept.

Usual targeting mechanisms. The programs are not usually targeted, but they can be regionally targeted (for example, in Zimbabwe, where seeds and fertilizer are distributed to rural households in regions hit by droughts). There might be an element of self-targeting when the transfer is small.

Range of targeting outcomes. Incidence can be progressive if poverty incidence is higher among agricultural households. In addition, agricultural input programs have a multiplier effect in that the value of benefits produced is higher than the cost of the inputs, including the investment in land and labor by the beneficiaries. However, the program does not reach the landless poor or those who have land but are incapable of farming because of labor constraints or disability (for example, as a result of HIV/AIDS), who are often among the poorest. It is also sometimes found that better-off farmers are able to obtain greater incremental output than poorer ones, who may have less unused land or land of lower quality, for example. Estimates in Malawi show that at least half of the transfers are made to households that would have bought the inputs without the program or for which the incremental income effect is negligible. Some programs are found to exclude such groups as female-headed households or the poorest (Ethiopia).

Unintended effects. Transfers in the form of fertilizer or seeds might promote reliance on a limited number of crops (often different from the traditional local crops) and limit the diversification of production that is an important poverty alleviation strategy. They also create dependence on fertilizer, which can have a harmful environmental impact; withdrawal of the transfer can also be harder because of this. Uniform distribution of inputs in set quantities can be wasteful if farmers have different agricultural needs, depending on their landholdings, quality of soil, or agro-ecological areas (distribution of coupons can increase the flexibility of input choice). The distribution of animals and advanced agricultural technologies does not always lead to improvement because many animals are actually sold or killed to meet immediate needs and because some of the technologies are not compatible with local conditions (for example, while some cross-bred cows may give more milk, they may be more susceptible to disease or require more feed).

Political economy. Agricultural input programs can be very popular and hard to withdraw.

Best suited to these groups. Subsistence farmers.

Additional sources: See Castañeda (1999); Webb, von Braun, and Yohannes (1992); World Bank (1995b, 1999a).

Program 4: Energy subsidies

International experience. Large universal energy subsidies were prevalent in the former Soviet Union and in Central and Eastern Europe until the end of the 1980s. Most have progressively been replaced by targeted subsidies. Gasoline and kerosene subsidies are frequent in the developing world.

Institutional structure. This is typically provided by the energy providers and financed either by cross-subsidy (some users paying higher prices) or budget transfers. Some subsidies might be administered by other institutions, such as those delivering housing allowances or social assistance.

Typical benefit level. Energy subsidies can take various forms, including (a) no disconnection of delinquent customers, (b) universal household price subsidies, (c) lifeline tariff (universal price subsidy provided only for the initial block of consumption), (d) price discounts for selected households (either the poor or some other group), (e) compensation for the share of the bills that exceeds a certain percentage of income, or (f) transfers for poor households (sometimes earmarked to pay part of the bill). The choice of a form should depend on the number of poor using the energy source and on the existing infrastructure (for example, distribution points for gasoline or kerosene, meters or alternative measure of actual consumption).

Typical coverage. Coverage varies with the type of subsidy and the percentage of the poor using the energy source. Coverage is likely to be lower for the poor if they do not have access to the energy source or if they traditionally consume other fuels, such as firewood or charcoal.

Range of administrative costs. Options 5 and 6, defined under “Typical benefit level,” above, and, to a lesser extent, options 3 and 4 tend to have complicated administration. Options 1 and 2 have lower administrative requirements but high overall cost. There might also be large setup costs for specific options that require meters or an elaborate billing system or other mechanism to identify poor households (unless the identification is realized in the context of other programs, such as social assistance or housing subsidies). Universal subsidies tend to have high overall cost.

Usual targeting mechanisms. See “Typical benefit level.”

Range of targeting outcomes. This depends on the share of the poor using the energy source and on the mode of subsidy selected. Option 6 and some forms of option 3 can be potentially well targeted, depending on the capacity of the program to identify the poor; options 4 and 5 usually reach a lower standard of targeting; and options 1, 2, and some forms of 3 are universal. Targeting tends to be unsatisfactory when the poor have low use of the subsidized energy—this is particularly the case of poor households with respect to gasoline in most of Africa, Asia, and Latin America and the case of rural households with lower access to most forms of subsidized energy. Energy subsidies often benefit the nonpoor more than the poor and accentuate differences between rural and urban areas; for example, in Ecuador, the poorest 35 percent of households only receive 17 percent of electricity subsidies and 23 percent of cooking gas subsidies.

Unintended effects. In addition to the general distortion created by subsidies, energy subsidies can actually lead to excessive energy use and fail to provide incentives to conserve energy.

Political economy. Energy subsidies can be relatively difficult to remove once established because they tend to be captured by the urban middle class.

Best suited for the program. Programs are not suitable for countries where the poor, and in particular the rural poor, do not have access to or do not use subsidized nontraditional energy.

Additional sources: See Lovei and others (2000); and Subbarao and others (1997).

Program 5: General food-price subsidies

International experience. General food-price subsidies were once common throughout the world and are very well studied. Many such programs have been eliminated as part of liberalization and structural adjustment reforms, especially in Latin America and the former Soviet Union. General food-price subsidies are probably most common now in the Middle East and North Africa, although they are present also in Africa and South Asia. They often cover fewer commodities or at lower levels than in past decades. Food subsidies have also been used in the aftermath of financial crises to prevent declines in living standards (Indonesia).

Institutional structure. The agency responsible for food-price subsidies may be a ministry of supply, a grain marketing agency, a state trading (import) monopoly, or some other specialized agency.

Typical benefit level. One percent to 20 percent of the cost of basic staple foods.

Typical coverage. All purchases of the covered foods. Depending on the commodity, this can be nearly universal—for example, for cooking oil or sugar. For commodities that can be produced at home (for example, tortillas or cornmeal), the poorest and the most remotely located may not take advantage of the subsidies. Some countries use ration cards to limit the quantity of subsidized food for each household.

Range of administrative costs. This is usually quite low in the case of universal subsidies, although it has not been thoroughly quantified.

Usual targeting mechanisms. The commodities chosen should account for a larger share in the food basket of the poor than of the rich. Geographic targeting to poor areas is possible when the subsidized food is distributed through state outlets and when the placement of such outlets is densest in poorer neighborhoods. (This is limited to commodities that are sold through state outlets and does not apply to those sold through the private commercial distribution chain.) Alternatively, self-targeting can be achieved by applying differential subsidies to different qualities of the good (concentrating on the types

of goods the poor are more likely to consume) or by differentiating products—for example, through special packaging.

Range of targeting outcomes. In most countries and for most commodities, the rich buy more than the poor, so that even with well-chosen commodities, the absolute benefit for the rich is greater than for the poor. In a few cases, commodities that are consumed more by the poor in absolute terms can be used for targeting. As a result, general subsidies are fairly expensive and fiscally difficult to sustain, and they have been or are being replaced by targeted programs in a number of countries, including Bangladesh, Honduras, Jamaica, Mexico, and India.

Unintended effects. Price subsidies are often financed indirectly through multiple exchange rates, restrictions on imports, or regulation of local prices, all of which can have significant impacts on incentives, trade, and production and are thus usually not recommended. Price subsidies may favor urban populations because rural households typically produce a higher share of their food. Generous subsidies have also been found to provide a disincentive to work in some countries, and they can have adverse effects on agricultural production.

Political economy. Once established, food-price subsidies can be difficult to reduce or eliminate, as each change in prices can be a flashpoint for protests.

Best suited to these groups. The urban working poor.

Additional sources: See Adams (1998); Alderman (1992, 2001); Ali and Adams (1996); Horton (1993); Mateus (1983); Radhakrishna and Subbarao (1997); World Bank (1995a, 1999a).

Program 6: Housing subsidies

International experience. Direct subsidies (on-budget) can take the form of grants for public housing construction, free maintenance of public housing stock, provision of housing-related infrastructure services below costs, upgrading slums and squatter settlements, and housing allowances or vouchers paid to consumers. Indirect (off-budget) subsidies include provision of free public land for housing, provision of titles or tenure regularization to squatters on public land, sale of public rental units to occupants at discount rates, provision of loans with negative interest rates or forgiveness for mortgages, and price and rent controls.

Traditionally widespread and large, supply-side housing subsidies in the former Soviet Union and Eastern Europe accounted for up to 25–35 percent of government expenditures. Credit subsidies for those building or buying housing were frequent in Latin America, although these are being dismantled in some cases. Rent control is still prevalent in some Western European countries, including the Netherlands, Sweden, and Norway.

Institutional structure. Housing subsidies are typically administered by central housing development agencies or ministries, employers, and local authorities (former Soviet Union and Eastern Europe). Public or quasi-public housing finance institutions administer subsidized housing loans.

Typical benefit level and coverage. In transition countries, subsidies cover large proportions of the population and almost all income groups. Subsidies in developing countries generally cover the lower-middle-income and middle-income groups between about the 30th and 50th percentiles.

Range of administrative costs. Not available.

Usual targeting mechanisms. Targeting is sometimes effected on the basis of household or individual characteristics (including, for example, the elderly, large families, and refugees), which may approximate need. Targeting can also be geographic, for example, for slum upgrading projects.

Range of targeting outcomes. Experience has shown that housing subsidies often do not reach groups with very low income. The percentage of housing allowances reaching households that fall below the median income ranges from 10 percent in South Asia to 20 percent in Sub-Saharan Africa and Latin America and to 50 percent in some industrialized countries. In the case of subsidized credits, for example, the poor may not satisfy underwriting criteria because of either the low levels or the instability of their incomes. Credit subsidies are often captured by the middle class (Peru, Ecuador). In many projects meant to provide finished housing to the poor, the housing is of comparatively high standards and thus out of reach of most of the poor, instead benefiting middle-income groups. Programs of slum improvement are usually fairly well targeted, especially compared to other housing-related subsidies.

Unintended effects. Undesirable effects of housing subsidies include (a) increased inequalities and inefficient use of limited public resources because of poor targeting of subsidies, (b) negative effects on the development of mortgage markets if subsidized loans are extended to households that can be reached by private sector lenders, (c) price distortions and constraints on the development of land and housing markets due to rent and price controls, and (d) supply-side subsidies such as rent controls or the provision of subsidized housing that may reduce the mobility of the labor-force when linked to the place of employment, as was traditionally the case in centrally planned economies.

Political economy. Well-designed subsidies can mobilize savings. In some cases, a populist approach from government and pressures by various interest groups, such as public employees benefiting from subsidized loans or housing allowances or politically strong professional associations, may result in irrational subsidies that can cause price distortions, reduce housing supply, and increase income inequalities and the inefficient use of public resources

Best suited to these groups. Low-income households that cannot afford housing. The use of housing subsidies, however, is only advisable in situations where government can provide the necessary sectoral policy conditions. Good subsidy design and implementation is critical to the outcomes.

Additional sources: See Edwards M. (1990); Malpezzi (1990); Mayo (1999); Subbarao and others (1997); and World Bank (1993). For review of analytical methods, see Malpezzi and Ball (1991) and Tipple and Willis (1991).

Program 7: Supplemental feeding programs

International experience. Supplemental feeding programs are very common.

Institutional structure. Programs are most often run through the Ministry of Health.

Typical benefit level. For on-site feeding: 350–500 calories per day per child, 350 calories per day for pregnant women, and 350 calories per day for lactating women. Double these figures for take-home food rations. Foods are usually a low-cost blend of grains and pulses with an added fat or oil.

Typical coverage. Coverage varies greatly according to the targeting criteria and program budget, ranging from 1–2 percent in Honduras to 70 percent in Chile.

Range of administrative costs. Five percent to 25 percent. Administrative costs are relatively high because transporting and storing food in bulk is costly and must be added to the personnel and information system costs required for other programs, such as cash transfers or food stamps.

Usual targeting mechanisms. Many programs are built around the public health care delivery system for prenatal and child health care. The first targeting criterion is therefore use of the public service. This may introduce a significant degree of self-targeting in countries where the middle- and upper-income groups use private health care. The second targeting mechanism is the demographic characteristic: pregnant and lactating women and children under the age of three or five. A third common, though not universal, criterion is to give benefits only to those who are malnourished (underweight or stunted) or failing to grow according to norms. An additional income or socioeconomic criterion rarely is applied to programs run through the public health care delivery system.

Range of targeting outcomes. Incidence is usually very progressive. Depending on the coverage of the public health care system, there may be significant errors of exclusion (Honduras).

Incentive effects. The incentive effects in these programs are designed to be positive—that is, to provide an incentive to get adequate preventive health care. Details of program delivery and monitoring will affect how much can be expected. For example, a program that allows the family to get care for all family members on the same visit that it picks up the food, or which only allows food aid to be collected once the use of adequate care has been demonstrated, will be more effective than others. The main determinants of the impact on health care use may be pre-existing coverage levels, the degree of program outreach, and the transactions costs for participants. If the distribution is not accompanied by nutrition education, the impact on malnutrition will be small. Programs may also have an urban bias because of the distance, lack of information, or higher distribution costs associated with rural areas.

Political economy. This is usually good because the programs are linked to adequate care for children and prospective or new mothers.

Best suited to these groups. Young families with good access to the health care system.

Additional sources: See Gillespie (1999); Grosh (1992); Horton (1993); Rogers and Coates (2001); and Subbarao and others (1997).

Program 8: Food stamps programs

International experience. Few countries have food stamps programs, but those programs that exist have been fairly thoroughly described and evaluated.

Institutional structure. Some food stamps programs are operated out of the Ministry of Welfare, others through the Ministry of Health, and some are hybrids. Where two agencies are concerned, it is particularly important to get the linkages right.

Typical benefit level. A few dollars, a small share of the cost of the food basket in Jamaica and Mozambique, higher in Sri Lanka; substantial in the United States.

Typical coverage. Coverage varies greatly according to the targeting criteria and program budget. For example, 1-2 percent in Honduras and 50 percent in Sri Lanka.

Range of administrative costs. From 10 percent upward: Costs are lower than for food distribution because transporting, storing, and distributing food in bulk is more expensive than moving food stamps around. Costs are higher than for cash transfers because of the need to set up an administrative mechanism for retailers to reclaim cash from the government in exchange for the food stamps they accept and because of the need to print hard-to-counterfeit stamps. These factors may add 2-5 percent on top of the costs of cash transfers.

Usual targeting mechanisms. Some food stamps programs are run through a social welfare agency and may use a means test of some sort; others are run through public health care centers in a manner parallel to that of supplementary feeding.

Range of targeting outcomes. Incidence is usually progressive.

Incentive effects. Food stamps programs have been found to have greater higher impact on food consumption than equivalent cash transfers (United States). Where the programs require the use of health care, the effects on use of health care are parallel to those found with supplemental feeding.

Political economy. Food stamps are usually more popular than straight cash transfers because the transfer is tied to the merit good of foods, sometimes of particular foods. Food stamps are often tied to foods that had previously been subsidized. In these cases the targeted food stamp program may be less popular than the untargeted and open-ended food subsidy.

Best suited to these groups. This type of program is best suited to a setting where means testing or working through the public health care delivery system is feasible, and where food is readily available on the private market and the problem for the poor is adequate purchasing power rather than lack of access to stocked markets.

Additional sources: See Castañeda (1999); Edirisinghe (1987); Grosh (1992); Horton (1993); Rogers and Coates (2001); and Subbarao and others (1997).

Program 9: School feeding programs (SFPs)

International experience. SFPs are very common programs in developing and OECD countries.

Institutional structure. Most programs provide on-site food and are run through the education system. Some have allied health interventions and cooperation from the health ministry; a few may also provide a take-home ration and involve the participation of a welfare agency. Some programs rely on the private sector for the provision of meals.

Typical benefit level. SFPs usually provide meals for children at school. This can vary from providing breakfast, lunch, and a snack to some combination of these. SFPs are often integrated with other interventions, such as health and nutrition education, parasite treatment, health screening, and water and sanitation. A few provide an income transfer in the form of food to take home (such food does not necessarily benefit only the enrolled child, but may be divided among the family).

Typical coverage. Coverage varies greatly, depending on the program.

Range of administrative costs. Programs are usually expensive because administration and logistics can be costly. The annual cost is estimated to range between US\$20 and US\$200 to deliver 1,000 calories per

student per day, with food costs typically accounting for 65–75 percent of total costs. SFPs are usually much more expensive than other nutrition programs, and their implementation is also particularly difficult, resulting in frequent bottlenecks. They are more effective in improving child health and nutrition when integrated with other programs, such as nutrition education or deworming.

Usual targeting mechanisms. SFPs are often universal. In general, targeting is best done at the school or regional level rather than at the individual level. Different possibilities exist:

- ⊃ The most common targeting mechanism for SFPs is geographic, which is most relevant if nutrition problems or low enrollment or attendance are particularly acute in specific areas.
- ⊃ Targeting can also be by gender: if female enrollment and attendance are particularly low, for example, receipt of take-home rations can be made conditional on attendance.
- ⊃ Targeting of children from poor households would be very costly but is sometimes possible when it is already in place for other programs, such as social assistance programs. In OECD countries, food is provided to all children in exchange for “lunch tickets” for which parents pay on a sliding scale, according to income.

Range of targeting outcomes. The range depends on the targeting and size of the program. Geographic targeting by region or school can increase targeting. For example, in school-targeted programs in Chile, Jamaica, and Costa Rica, the poorest 20 percent were found to receive between 30 and 50 percent of transfers. School targeting may not be appropriate where enrollment is low, however, because children from the poorest families are less likely to be enrolled or to attend (although the SFPs themselves can help increase enrollment of the poor). Targeting children within schools by self-selection, means testing, or nutritional assessment can also improve targeting, but costs and stigma tend to limit their feasibility, efficiency, and desirability. The Food for Education program in Bangladesh, which targets schools geographically and children within schools (on the basis of land ownership, parents’ occupation, and family structure), manages to concentrate 70 percent of its transfers on the poor.

Unintended effects. When the program is in the form of food to take home, it is not clear whether or not the child benefits from the food supplied. SFPs might provide disincentives to home-based provision of food for children; they might also be perceived as solving the problems of school-age children and therefore might deter initiatives to address other important determinants of nutrition, learning, and health. SFPs that target recipients within schools can also stigmatize beneficiaries unless the targeting is not observable—for example, when the transfer is in the form of reduced fees for lunch tickets and the amount paid by each family is confidential.

Political economy. Programs usually require significant financial and administrative resources, and other interventions could potentially have higher impact. SFPs, however, generally benefit from strong popular support.

Best suited to these groups. Children enrolled in school (although some programs also manage to increase enrollment and therefore coverage) and poor families, for food to be taken home. Overall, the evidence is strong that SFPs help reduce short-term hunger and improve enrollment and attendance. There is little evidence to support the contention that SFPs improve learning outcomes or the nutrition of school children, and there is no evidence on the impact on the nutrition of children’s families.

Additional sources: See Del Rosso (1996, 1999); Gillespie (1999); Horton (1993); Rogers and Coates (2001); and Subbarao and others (1997).

Program 10: Scholarships or fee waivers for schooling

International experience. Scholarships and fee waivers are becoming more common as fees in public schools become more common and as the popularity of tying transfers to human capital formation programs grows. The body of comparative descriptive evidence and individual impact evaluations is still scant.

Institutional structure. The programs with low benefits tied to the direct costs of schooling tend to be run by education ministries. Those with large cash transfers are run by other agencies, often the Ministry of Social Protection, with some liaison with schools or the central education ministry.

Typical benefit level. Benefits range from part or all of the direct costs of fees (Zimbabwe, Armenia), uniforms, or books (Indonesia) to levels that also compensate for a significant share of the opportunity cost of the student’s time (Mexico, Brazil). In the latter cases, there is usually also a grant to the school, to ensure that the quality of education offered is sufficient. Some programs are linked to attendance and are

specifically targeted at improving girls' educational achievements. Bangladesh, for example, has a program whose benefits are also conditional on girls not getting married while at school.

Typical coverage. Five to 25 percent of students.

Range of administrative costs. These costs are not well quantified in many programs, but they are probably low, on the order of 3–5 percent, or 5–10 percent for programs with large transfers and more complex mechanisms and administrative costs.

Usual targeting mechanisms. Targeting is usually in two steps, beginning with geographic targeting to focus budget resources on areas with more poor students. In programs with low benefit levels, the second step is often a school- or community-based committee that determines which children will benefit. In programs involving significant cash transfers, a social welfare office will be involved in a proxy means test. In several countries, an explicit quota of scholarships is set for girls, of at least 50 percent and often higher.

Range of targeting outcomes. Outcomes are not well quantified for programs with lower benefit levels, but have been shown to be quite good for Mexico and Brazil's *Bolsa Escola*.

Unintended effects. The incentive effects in these programs are designed to be positive—for example, to encourage enrollment and attendance or to reduce dropout. There is not much quantified evidence of these impacts, and it would seem that most recipients would be in school even without the subsidy, so that the benefit is more in the transfer than in changing enrollment rates. In addition, the transfer is often given irrespective of actual attendance, which might reduce its impact.

Political economy. This program is usually popular because schooling is highly valued. International development agencies find the linking of short-run transfer benefits to long-run human capital formation attractive.

Best suited to these groups. Poor students and specific groups with low enrollment or attendance, such as girls or ethnic minorities.

Additional sources: See Legovini and Regalia (2000); Sedlacek, Ilahi, and Gustafsson-Wright (2000); Government of Indonesia (1998); and <http://www.ifpri.org/themes/progres.htm>.

Program 11: Unemployment benefits (UB)

This program can also include unemployment insurance (UI), unemployment assistance (UA), and integrated savings accounts (ISAs).

International experience. UB systems exist mainly in industrialized countries. In the developing world, UB systems are more prevalent in Latin America than in Africa or Asia. Extensive reviews of UB programs have been conducted for OECD countries.

Institutional structure. UB programs are usually administered by government agencies or autonomous institutions managed by representatives of insured workers, employers, and the government. Monitoring and enforcement of beneficiary compliance with labor-market requirements may require close linkages between UB and employment agencies.

Typical benefit level. UI and ISAs earnings-related benefits are usually a percentage of average wages earned during some recent period. The income replacement rate generally varies between 40 percent and 75 percent of average earnings. Flat-rate benefits are an alternative. Entitlement duration is usually limited and depends on the length of the period of recent contributory employment. Generally, the benefit duration varies from eight to 36 weeks. Benefits often decline over the entitlement duration. UA systems are low-level, flat-rate benefits intended to cover basic needs of the unemployed and their families. Duration is usually unlimited, but when limited, it is of longer duration than UI.

Typical coverage. Most mandatory unemployment support programs in the OECD countries cover the majority of formal sector workers, irrespective of the sector or industry. With some UI/UA programs, coverage is limited to formal sector workers in industry and commerce. Some programs exclude workers who earn above a certain level. Special provisions may exist for labor-market entrants, seasonal or temporary workers, and the self-employed.

Range of administrative costs. UI is financed by contributions from employers and employees, usually equal for both or higher for employers. The government may provide subsidies or emergency financial assistance. UA is typically government administered and is financed through general tax revenues. UB

administrative expenditures generally vary between 0.01 percent and 0.10 percent of GDP (Italy, 0.01 percent; Japan, 0.02 percent; Spain, 0.05 percent; United States, 0.05 percent; Germany, 0.10 percent). Total UB costs (administrative costs plus benefits) generally range between 0.5 percent and 3.0 percent of GDP.

Usual targeting mechanisms. UI/ISAs programs are typically not targeted at the poor. Benefits are provided to those workers who have completed a minimum period of contributions or covered employment and have become involuntarily unemployed. UA programs are targeted at the poor unemployed. Beneficiaries must satisfy a means or income test.

Range of targeting outcomes. It is quite plausible that low-skill, low-wage workers are at a disproportionately high risk of becoming unemployed. Consequently, low-wage formal sector workers may be the primary recipients of UB. UBs fail to reach those employed in the informal sector. UBs also tend to favor men, who are more likely to qualify because they tend to have more stable employment histories, higher labor-force participation rates, and a greater likelihood of working in the formal sector.

Unintended effects. Empirical evidence reveals that UBs inefficiently increase the frequency and duration of unemployment spells and reduce job-search intensity. (Disincentive effects are less for UA.) Reduced job-search intensity and increased reservation wages may cause an increase in the unemployment rate.

Political economy. These programs are favored by workers as a financial cushion during unemployment. They can be used to facilitate structural adjustment. Labor may resist reform of UB programs.

Best suited to these groups. Formal sector workers. Not adapted for those working in the informal sector, in which the poor are usually concentrated.

Additional sources: See Ginneken (1996); Horton and Mazumdar (1999); OECD (1998); and U.S. Social Security Administration (1999).

Program 12: Severance pay

Severance pay is a compensation to workers who are laid off for no fault of their own. It is paid as a lump-sum payment.

International experience. The use of severance pay is prevalent in both industrial and developing countries. In some countries, it is mandated as a part of employment protection legislation; in others, it may not be legally required but can be included in collective agreements or paid as part of company policy. In countries without unemployment insurance (particularly in Latin America), severance pay is the main provision for income support for unemployed workers. Under voluntary retrenchment programs, workers may decide to leave a firm in exchange for an individually tailored severance pay package. Severance pay was implemented in some Southeast Asian countries after the financial crisis in 1998.

Institutional structure. Severance pay programs are financed and administered by employers.

Typical benefit level. Benefits are usually determined by two things: (1) the length of the individual's service with the current employer, and (2) the individual's earnings in the period preceding the layoff. The benefit formula is usually nonlinear, with the benefit amount varying from less than 10 percent up to 100 percent of the individual's monthly earnings per year of service (often with limits on the minimum and maximum pay). Among OECD countries, the benefits tend to be most generous in southern Europe; there is little or no mandated severance pay in some other countries, including the United States.

Typical coverage. Most mandatory severance pay programs cover workers employed under permanent employment contracts: coverage is thus limited to formal sector workers. Severance pay also tends to benefit male workers and those who have worked steadily in formal jobs.

Range of administrative costs. Severance pay is financed by employers. In some countries, employers are partly compensated from a redundancy fund or by the government.

Usual targeting mechanisms. Severance pay programs are not targeted at the poor. Benefits are provided to workers under regular contract regardless of the income of other family members and the worker's assets.

Range of targeting outcomes. Because all employed workers are potential beneficiaries, severance pay may not be a regressive transfer. Experience shows that low-skilled workers are disproportionately prone to job losses, so they may benefit from the program more than other covered workers. Those in the informal sector, who are likely to be poorer still, will not be covered by severance programs.

Unintended effects. Because the receipt of severance pay is not conditional on earnings obtained in future jobs or on earnings of other family members, severance pay does not distort incentives to search for and take a job. Under certain circumstances, however, the program does have a perverse effect of encouraging workers to leave a job so as to become entitled to the severance pay.

Political economy. Once instituted, severance pay may be difficult to reduce. For example, Peru attempted to reduce severance pay in 1996, but eventually increased the amount after a popular backlash.

Best suited to these groups. Formal sector workers. Not adapted for those working in the informal sector, in which the poor are usually concentrated.

Additional sources: See Cox, Edwards, and Manning (1999); Horton and Mazumdar (1999); Lazear (1990); and OECD (1999).

Program 13: Wage subsidies

International experience. Publicly funded wage subsidy programs exist in some OECD countries but are less common in developing countries. Wage subsidies have been implemented on a large scale in the Republic of Korea because of the 1998 financial crisis. There is considerable evaluative evidence on the effectiveness of these programs, although most of the rigorous evidence is for OECD countries.

Institutional structure. These programs are usually administered by the Ministry of Labor.

Type of benefit. Wage subsidies are typically a payment to firms, as a proportion of the wage, to induce them to hire unemployed workers. The level and duration of subsidies varies significantly between programs and countries. The subsidy is sometimes combined with on-the-job training; for example, under the U.S. Targeted Job Tax Credit, firms are paid 50 percent of an individual's wages for a period of up to two years. The U.K. job subsidy program provides up to 100 percent of wages (as well as paying for all training costs) for a period of six months.

Typical coverage. These programs are aimed at the unemployed—usually the long-term unemployed, those from disadvantaged areas, and young people—to help them maintain contact with the labor market. In the context of crisis, wage subsidies can also be used to prevent loss of jobs.

Range of total administrative costs. Wage subsidy programs are usually publicly funded. OECD countries spend between 0.2 percent and 2.5 percent of GDP on active labor market programs, of which between 1 percent and 15 percent is spent on wage subsidy programs. Administrative costs vary.

Usual targeting mechanisms. Wage subsidies are usually aimed at the long-term unemployed, to build their attachment to the labor-force.

Range of targeting outcomes. Beneficiaries are mainly the long-term unemployed.

Unintended effects. The impact of these programs is usually limited. They have substantial deadweight and substitution effects. Careful targeting can reduce but not eliminate these effects, and controls may be necessary to ensure that firms do not misuse the program as a permanent subsidy to the work force (for example, they may lay workers off when the subsidy period ends or refuse to hire the unemployed unless a large subsidy is offered).

Political economy. Although the net employment effects may not be significant, such programs are sometimes instituted to decrease the dependence of the long-term unemployed on unemployment benefits and reduce the social exclusion of young people, older workers, and single mothers.

Best suited to these groups. The long-term unemployed. Outcomes in terms of employment and wages are usually modest, but wage subsidies may provide the long-term unemployed with an entry into the labor-force.

Additional sources: See Betcherman and others (1999); Cox, Edwards, and Manning (1999); Dar, Luinstra, and Ogawa (1999); Dar and Tzannatos (1999); Fay (1996); Horton and Mazumdar (1999).

Program 14: Job search assistance (JSA)

International experience. Public and private employment services are prevalent in most OECD countries. A fairly large number of developing countries also have public employment services, though in some countries, private agencies are banned or restricted. There is considerable evaluative evidence on the effectiveness of these programs, although most of the rigorous evidence is for OECD countries.

Institutional structure. Public programs are usually run by the Ministry of Labor. In some OECD countries, these services have been coordinated with other active labor market programs and some passive programs. This can be beneficial to the extent that the unemployed acquire the skills and knowledge necessary to fill available job vacancies, but this advantage has to be balanced against the high level of administrative capacity such integration entails.

Typical benefit. Various types of benefits may be provided, including in-depth counseling during periods of unemployment, skills assessment, résumé preparation, job clubs, job referrals, information network, and training in interviewing techniques.

Typical coverage. Unemployed workers, workers at risk of unemployment, and those who would like to enter the labor market, such as housewives and recent school graduates.

Range of total administrative costs. Public employment service programs are usually publicly funded. OECD countries spend between 0.2 percent and 2.5 percent of GDP on active labor market programs, of which between 10 percent and 40 percent is spent on JSA programs. In terms of cost per beneficiary, JSA is a reasonably inexpensive instrument compared to other active labor market programs.

Usual targeting mechanisms. Targeting mechanisms include self-targeting, which usually means that services are available to anyone who needs them (most OECD countries, some developing countries); linkage with unemployment insurance, which may require the unemployed to get JSA to remain eligible for unemployment benefits (most OECD countries); and regulation of mass layoffs through labor legislation that requires employers to report such layoffs to the employment office.

Range of targeting outcomes. Publicly funded services are usually targeted at the disadvantaged, including the poor, the unskilled, and the long-term unemployed. Private (fee-charging) agencies typically provide labor-exchange services to more favored segments of the labor-force, such as the employed and skilled and white-collar workers. The success of JSA programs depends greatly on whether the economy is growing or in a recession.

Unintended effects. Public employment services may crowd out private services and can also result in deadweight loss: individuals who get jobs through public JSA are generally the most qualified and would have gotten the jobs in the absence of these services.

Political economy. Publicly administered employment services tend to be inefficient without the proper monitoring mechanism. Trade unions often oppose the use of private job services.

Best suited to these groups. Vulnerable groups, such as women and the long-term unemployed. JSA programs do not seem to have a positive effect for young people.

Additional sources: See Betcherman and others (1999); Cox, Edwards, and Manning (1999); Dar, Luinstra, and Ogawa (1999); Dar and Tzannatos (1999); Fay (1996); Fretwell and Goldberg (1994); Horton and Mazumdar (1999); and Schmid and others (1996).

Program 15: Training and retraining programs

International experience. Publicly funded training and retraining programs exist in most OECD countries and in many developing countries, often alongside a vibrant private sector for training. There is considerable evaluative evidence on the effectiveness of these programs, although most of the rigorous evidence is for OECD countries.

Institutional structure. Public programs are usually administered by the Ministry of Labor, but in many countries, they are also administered by the Ministry of Education or other ministries. This often leads to a duplication of effort.

Type of benefit. Short-term classroom training (one to six months), usually with on-the-job training. These measures sometimes accompany JSA programs.

Typical coverage. These programs are aimed at the unemployed—usually the long-term unemployed, those laid off en masse (for example, as a result of plant closures), and young people.

Range of total administrative costs. Programs are usually publicly funded. OECD countries spend from 0.2 percent to 2.5 percent of GDP on active labor-market programs, of which between 20 percent and 80 percent is spent on training and retraining programs. Administrative costs vary significantly. These programs are usually among the most costly of the active labor-market programs, in terms of cost per beneficiary, and are often not cost-effective, especially when addressed to those laid off en masse or to

young people. Studies have found that, in OECD countries, they are no more effective than JSA programs and are much more expensive.

Usual targeting mechanisms. Various mechanisms are used. Those laid off en masse may be offered a retrenchment package that includes provision for retraining, such as through vouchers (Sweden, Hungary, Mexico). The long-term unemployed may be required to get retraining to remain eligible for unemployment benefits (United States), and firms may be given subsidies to hire and train unemployed and laid-off workers (France, Sweden, the Czech Republic).

Range of targeting outcomes. Beneficiaries are mainly the long-term unemployed or those who have been laid off as a result of plant closures. Almost all beneficiaries were previously employed in the formal sector. Programs seem to be more efficient for women than for men.

Unintended effects. Programs may be poorly targeted, resulting in deadweight loss—that is, the outcome for those who benefit would not have been different in the absence of the intervention. They may also reduce job-search intensity during training. These programs usually do not have much impact during times of slow economic growth or slack labor demand.

Political economy. Programs may be instituted to increase the political acceptability of reforms; for example, a program may be provided to retrenched workers to enable them to compete for other jobs. These programs are sometimes also used as an instrument to correct some market failure or to divert an “economically efficient” outcome to a “socially desirable” one.

Best suited to these groups. Outcomes in terms of employment and wages are usually modest, but the impact may be greater for relatively disadvantaged jobseekers, such as women and less-educated workers.

Additional sources: See Betcherman and others (1999); Cox, Edwards, and Manning (1999); Dar and Gill (1998); Dar, Luinstra, and Ogawa (1999); Dar and Tzannatos (1999); Fay (1996); Gill, Fluitman, and Dar (eds.) (forthcoming); Horton and Mazumdar (1999); Leigh (1995); and Schmid and others (1996).

Program 16: Microenterprise development assistance (MEDA)

International experience. Publicly funded MEDA programs exist on a small scale in many OECD and developing countries; MEDAs were also implemented in the Republic of Korea, Thailand, Indonesia, and Malaysia in the aftermath of the 1998 financial crisis to promote self-employment. There is considerable evaluative evidence available on the effectiveness of these programs, although most of the rigorous evidence is for OECD countries.

Institutional structure. These programs may be administered by the ministry of labor, but in many countries they are also administered by other ministries, such as those responsible for community development.

Type of benefit. Participants may receive assistance to set up their businesses as a lump-sum payment or as periodic allowances. In most cases, participants may also receive post-startup business advisory services and business counseling.

Typical coverage. These programs are aimed at the unemployed.

Range of total/administrative costs. Programs are usually funded by public funds. OECD countries spend from 0.2 percent to 2.5 percent of GDP on active labor-market programs, of which between 1 percent and 10 percent is spent on microenterprise development. Administrative costs vary.

Usual targeting mechanisms. MEDAs are not usually targeted at particular groups. Many countries use screening, under which potential beneficiaries undergo a rigorous assessment to evaluate the likelihood of their success in starting and operating the business. This can be cursory.

Range of targeting outcomes. Beneficiaries are mainly the unemployed, who may have worked in either the formal or the informal sector in the past.

Unintended effects. The takeup rate for these programs is generally less than 5 percent of the unemployed. MEDA programs are associated with high deadweight (some beneficiaries would have formed their enterprises without assistance) and displacement (some businesses that are not given assistance become displaced) effects, rendering their net effects low. In most cases the failure rate of these businesses is high, although those businesses that are assisted through mentoring and business counseling are more likely to succeed.

Political economy. This program often is an instrument to address market failure in the credit market rather than the labor market.

Best suited to these groups. Assistance targeted at particular groups—in this case, at women and older individuals—seems to have a greater likelihood of success.

Additional sources: See Betcherman and others (2000); Dar and Tzannatos (1999); Fay (1996); and Wilson and Adams (1994).

Program 17: Fee waiving in health care

International experience. Fees are a feature of the public health care system in many countries, but a relatively new one, with systems often still being developed and changed. Consequently, information on the value of waivers, their targeting, and their impact on the use of health care is scarce. Fees play an important role in mobilizing resources at low-income levels where government and other public resources used to finance health care are inadequate. The net impact on the poor relates as much to the effectiveness of exemption programs as to the fees that are charged.

Institutional structure. These programs are usually an official part of the Ministry of Health or social insurance system policy and administered locally in the case of community financing schemes. There is variation as to whether or not the individual point of service (clinic or hospital) is reimbursed from a central budget for the costs of services given to clients with fee waivers. Nonformal exemptions, carried out by providers based on a subjective “Robin Hood” principle, are widespread.

Typical benefit level. The cost of health care, or drugs, for services for which significant charges apply. Sometimes, the fee structure exempts whole classes of services—such as prenatal care, immunizations, and tuberculosis treatment—and care in first-level facilities or a subset of first-level facilities—for example, those in rural areas. The fee waivers would thus apply only to the remaining services, which, although a minority of the transactions of the health care system, account for the major share of charges. There is nonetheless ample evidence from very poor countries of fees that apply to all kinds of services, including vaccinations.

Typical coverage. A small percentage of the population.

Range of administrative costs. This is difficult to assess because the programs usually receive almost no administrative resources and are thus more shells of programs than good practice. Actual costs, however, may be a significant percentage of resources collected: in Thailand, for example, administrative costs of the Low-Income Card for medical care amounted to 48 percent of the total expenditure of the program.

Usual targeting mechanisms. There are three possibilities for selecting among individuals, given here in approximate order of frequency:

1. **Interview in the health facility by a social worker, clerk, or medical staff.** This is a rough means test, usually with no home visit or other way to verify information.
2. **Precertification by a ministry of welfare, often associated with entry into some other program.** For example, recipients of means-tested food stamps in Jamaica are automatically eligible for fee waivers, as are those with Ministry of Social Affairs cards in Surinam.
3. **Selection by a community group or health users committee.** In Thailand, for example, village headmen can allocate cards for medical care to the poor.

Alternatively, programs can be designed to cover exclusively some groups of the population, such as girls, pregnant or lactating women, or the elderly.

Range of targeting outcomes. Outcomes are rarely well quantified in the first and third cases described in the paragraph above, but probably highly inexact. There often appear to be large errors of exclusion, where the poor are unfamiliar with the waiving system and thus do not even seek care. Targeting in the medical program for the poor in Thailand was found to be poor, with numerous inclusion and exclusion errors.

Unintended effects. Reduced access to care by the poor.

Political economy. Fees for health care are highly controversial, and the waiving system is often a not very well respected part of that system.

Best suited to these groups. The poor with good access to health care that carries significant charges (often urban groups).

Additional sources: See Celedon, Espinoza, and Bitran, (2001); De Ferranti (1987); Schieber (1998); World Bank (1993, 1996, 1997, 2000). See also chapter 18, “Health, Nutrition, and Population.”

Program 18: Health insurance

International experience. Financial protection against the cost of illness is now a standard objective and outcome indicator for health systems, in addition to health outcomes. The importance of including this as part of social policy relating to the health sector was confirmed by the *World Health Report 2000* (“Health Systems: Improving Performance”). Coverage is, however, incomplete, and many rural and low-income populations still rely on out-of-pocket spending when they fall sick, thereby exposing themselves to unnecessary financial risk for which there are known and effective programs.

Institutional structure. Four main organizational modalities pervade:

1. general tax resource mobilization and revenue pooling by the Ministry of Finance, with resource allocation/purchasing through Ministry of Health service providers;
2. Payroll tax resource mobilization and revenue pooling (sometimes collected at the source with income tax and sometimes collected separately as a social insurance premium), with resource allocation/purchasing through social health insurance agencies;
3. Community-based resource mobilization and pooling, with resource allocation/purchasing done by local community programs; and
4. Resource mobilization through premiums, pooling, and purchasing done by private health insurance funds (usually separate from providers, but sometimes integrated with provider networks in the form of health maintenance organizations).

In most countries, all four modalities coexist in parallel, covering different segments of the population.

Typical benefit level. Benefits under general tax and social health insurance-financed schemes tend to be comprehensive, covering a full range of preventive and curative services, from access to ambulatory care for common problems to institutional care for less frequent, insurable risk. All schemes cover insurable risks rather than just basic care. Most health ministries rely on negative lists (comprehensive benefits, with exclusions listed), while those that use social, community, or private insurance rely more on positive lists specifying only those items covered. In low-income countries, there is a tendency to promise more than can be delivered. Resource constraints usually limit the range of available benefits more than do the positive and negative lists.

Typical coverage. Population coverage is often broadly fragmented along the organizational lines described above: (1) The poor are covered by general tax-finance Ministry of Health Services; (2) workers in formal employment are covered by social health insurance organizations and their provider networks (often there are many parallel social insurance organizations that cover different employment sectors, such as civil servants, the military, white-collar workers, blue-collar workers, miners, and so on); (3) excluded rural and low-income populations are covered by community financing schemes; and (4) higher-income groups are covered by private health insurance. Because it is often difficult to link contribution status to the patients that seek benefits, in most low-income countries, there is considerable crossover between these four broad categories of insurance coverage.

Range of administrative costs. Costs can be very low for general revenues (1–2 percent) and social insurance (2–4 percent), which can “piggyback” onto existing general revenue and payroll taxation mechanisms. Costs are higher for community financing and private health insurance schemes (5 percent to more than 10 percent) because of the greater transaction costs of running small schemes, the voluntary nature of membership, and the lack of existing organizational structures that can be used to share fixed overhead costs.

Usual targeting mechanisms. The most common technique for reaching the poor is nontargeted access to a limited range of basic services, such as integrated management of childhood illness (IMCI) available through the primary care network, and access to local hospitals (maternity and general) for more serious conditions. More selective targeting is often done through health cards for the poor that afford access to Ministry of Health Providers. Public subsidies are often used to pay for the premiums of social and community insurance programs. Common techniques for targeting include income targeting, geographic targeting, categorical targeting (for example, women, children, and other vulnerable groups), and targeting by the type of diseases that most commonly afflict the poor and by the facilities that are most used by the poor, such as local clinics.

Range of targeting outcomes. It is politically and ethically difficult to enforce targeting when nonentitled patients show up with serious illnesses at clinics and hospitals that are intended for the poor or entitled members only. Broad categorical targeting techniques are therefore easier than narrow income-based means testing, especially in the case of rural and informal sector workers whose income is difficult to determine precisely.

Unintended effects. Adverse selection, moral hazard, agency problems, and other insurance market failure. Contribution of payroll taxes to labor costs and international competitiveness, and the fiscal burden of general revenues.

Political economy. Health financing reforms are among the most controversial and highly contested reforms in the health sector. There are strong vested lobbies on both sides of most debates.

Best suited to these groups. The poor with good access to health care that carries significant charges (often urban groups).

Additional sources: See De Ferranti (1987); Schieber (1998); World Bank (1993, 1996, 1997). See also chapter 18, “Health, Nutrition, and Population.”

Program 19: Needs-based cash transfers (social assistance)

International experience. Most OECD countries have generous needs-based social assistance and an extensive literature on its impacts. Most countries in Eastern Europe, the former Soviet Union, and some Latin American countries have significant social assistance programs, and there is a growing body of evidence on their workings. A much larger set of countries, including many very poor countries, have tiny programs mostly intended to aid the disabled, elderly, or destitute, but with budgets so small that they can reach only a fraction of those target groups with tiny benefit levels; these are largely undocumented and unevaluated in international literature.

Institutional structure. Broad national programs are usually run from the welfare or social security ministries. Some programs are decentralized in some aspects, with a combination of decentralization of implementation (staffing resources), financing, or design (set of criteria and objectives). For example, in many Eastern European countries, programs are locally implemented but centrally financed and designed. Where the programs are highly decentralized, if existing regional disparities are to be addressed, or at least not exacerbated, it is important to ensure that higher levels of government have a strong role in fiscal redistribution to ensure a balance of intergovernmental responsibilities.

Typical benefit level. Benefit level depends greatly on the fiscal resources available. It is usually quite low, for example, 5–25 percent of the cost of obtaining the poverty-line basket of commodities. Some programs provide a regular monthly transfer while others provide only occasional ones. In addition, the transfers can either be flat (that is, the same for all recipients) or can vary with the household’s resources (Romania).

Typical coverage. Generally 5–25 percent of population, usually far fewer than the share of the population deemed poor.

Range of administrative costs. A plausible range is 5–10 percent. Targeted social assistance cash transfers are highly information intensive and might be difficult to implement in countries where information gathering is very expensive. There is a tradeoff between the quality of targeting and the administrative costs of the program. A good program design that includes all those eligible and excludes all others will usually be allowed somewhat higher administrative costs. Many programs have inadequate mechanisms for outreach to avoid errors of exclusion and for monitoring and evaluation. Decentralization usually complicates the administration but can improve targeting.

Usual targeting mechanisms. There are various options regarding the mechanisms used to target and the level at which these mechanisms are decided. Social assistance is usually targeted either with income or means tests, as in Jamaica, or with proxy means tests, as in Chile, Colombia, Mexico, and Armenia. The criteria can either be set centrally and follow a fixed, strict rule, or they can be decided at the local level, taking into account local conditions, preferences, and priorities, as in Uzbekistan and Albania. When criteria are set locally and funds are not distributed according to the poverty incidence in each community, it is possible that the program is well targeted at the local level but not at the national level (for example, Thailand and Uzbekistan).

Range of targeting outcomes. Generally 50–80 percent of benefits go to the poorest 40 percent of households. See table N.3 for examples of targeting outcomes in selected countries.

Table N.3. Share of Social Assistance Received by the Poorest 20 Percent, Selected Countries

<i>Country (year)</i>	<i>Share (%)</i>
Eastern Europe and the former Soviet Union	
Bulgaria (1995)	36
Estonia (1995)	36
Hungary (1993)	35
Poland (1993)	29
Romania (1994)*	18
Russia (1994)	6
Slovakia (1992)	52
Ukraine (1995)	6
Uzbekistan (1995)	27
Latin America and the Caribbean	
Chile (1990)	51
OECD countries	
Australia (1989)	78
Belgium (1992)	35
Finland (1991)	43
Ireland (1987)	35
Netherlands (1987)	31
Norway (1986)	27
Switzerland (1982)	25
Sweden (1987)	21
United Kingdom (1991)	55
USA (1991)	70

*Data for Romania taken from poverty assessment.

Sources: Braithwaite, Grootaert, and Milanovic (2000); Milanovic (1998); World Bank (1997c–e, 1998).

Unintended effects. Where programs are strictly targeted on income, the targeting criteria will introduce a disincentive to work. The income tests are, however, usually so imprecise that it seems more likely that the main effect is not so much to lower work incentives, but to increase the misreporting of income. In industrialized countries with benefit levels close to the poverty line and more precise means testing, the combined effects of disincentives and the income effect of the transfer have been measured and can be significant.

Political economy. Mobilizing support for pure cash transfers can be difficult, and for this reason, programs tend to be underfunded. This stems partly from fears that cash will be used for “demerit” goods such as alcohol or gambling. While theoretically applicable to all social assistance programs, the fear of creating a welfare dependency seems particularly strong for needs-based cash transfers.

Best suited to these groups. Needs-based cash transfers are one of the few options for those who cannot be expected to work, including the disabled, the elderly, and children. They are also a feasible means of supplementing the income of the working poor.

Additional sources: See Barr (1998); Milanovic (1995); Subbarao and others (1997); and Tabor (2001).

Program 20: Mandatory contributory schemes for old age, death, and disability

International experience. Most countries have some type of mandatory contributory scheme to offset the risks of old age and to benefit survivors, although in many cases, these are limited to specific subsets of the population.

Institutional structure. Administration is usually through a single state agency, but some countries have administrative structures organized around occupational groups and subnational territories or structures that may involve licensed private entities subject to close state supervision.

Typical benefit level. From 30 percent to 100 percent of the average urban worker's wage.

Typical coverage. From 5 percent in the lowest-income countries to more than 90 percent of the employed in the highest-income countries.

Range of administrative costs. From less than 1 percent to more than 50 percent of expenditure, based on economies of scale, efficiency of administration, and private-public sector mix.

Usual targeting mechanisms. Not targeted—these schemes are available only to contributors, who are usually more middle income than the general population. There may be some progressive redistribution in the benefit formula or in minimum pensions, but this is counterbalanced by the regressive impact of pooling higher-income people of greater longevity with shorter-lived lower-income people.

Range of targeting outcomes. Although not targeted, these schemes are instrumental in many cases in preventing poverty among the elderly, particularly among those who during their working years were at the middle-income level or above.

Unintended effects. Programs increase the incentive to withdraw from the labor-force at an earlier age than may be physically necessary. High contribution rates encourage tax avoidance by increasing participation in the informal sector. The existence of such schemes may have reduced household savings.

Political economy. These schemes are very popular because old age, death, and disability schemes appeal to the most basic of risk concerns that affect all income groups. When inaugurated or expanded, these schemes see revenues increase without substantive increases in expenditures—often resulting in benefits being expanded without regard to longer-term financial consequences.

Best suited to these groups. Workers in the formal sector who can make regular contributions that can be easily traced and recorded. Not adapted for those working in the informal sector in which the poor are usually concentrated.

Additional sources: See U.S. Social Security Administration (1999); and World Bank (1994). See also <http://www.worldbank.org/pensions>, especially the "Pensions Primer" and PROST modeling software.

Program 21: Noncontributory schemes for old age, death, and disability

In general, safety net provisions for old age have parallel provisions covering the risks of the death or disability of the household's workers. What distinguishes these arrangements from mandatory contributory old age schemes (see previous fact sheet) is that they are payable without regard to past labor-market attachment and are almost always financed from general tax revenues.

International experience. Many countries in the world have noncontributory schemes to offset the risks of old age and benefit survivors that cover some or all of the people who do not fall under the contributory scheme and, in some cases, those who do fall under the contributory scheme. Under these noncontributory schemes, benefits are paid without regard to past participation in the labor market. These schemes, which are almost always financed from general tax revenues, can either be means tested or based simply on age and residence.

Institutional structure. Administration is usually under the supervision of a single state agency, although often this is decentralized to local offices that may be part of subnational governments. In some instances, the agency that administers a country's mandatory contributory old age scheme will administer complementary noncontributory programs. In other countries, means-tested old age, disability, and death benefits are administered in conjunction with means-tested assistance payable to low-income households generally (for example, to poor families with children).

Typical benefit level. Varies from less than US\$1.00 per month to 25–30 percent of the average wage.

Typical coverage. Most high- and middle-income countries have noncontributory old age schemes that cover the whole population. Takeup rates in means-tested programs, however, vary across countries, with the stigma and trouble of qualification being a greater barrier in some societies than in others. Lower-income countries often maintain noncontributory programs only for those in urbanized areas, leaving assistance in rural areas to community-based programs of general assistance.

Range of administrative costs. No information available.

Usual targeting mechanisms. Means test or by age.

Range of targeting outcomes. No information available.

Unintended effects. Old age noncontributory schemes carry with them the hazard that individuals will not provide for their own old age protection if they know the state will provide for them. Program rules are sometimes such that individuals may prefer to shelter earnings in the informal sector, save their own accounts, and then receive benefits from the noncontributory plan, rather than work in the formal sector and contribute to its pension scheme—especially if the eligible unit is embedded in a larger household. In these instances, the program can have a deterrent effect on the work and savings efforts of the larger household. In addition, means-tested programs for old age will have some negative effects on the work and savings behavior of lower-income individuals nearing retirement.

Political economy. Noncontributory programs for old age, death, and disability tend to be less popular than contributory schemes. The popularity of grants to any member of the population over a certain age (sometimes called “demogrants”) has declined over the past several decades as these have been incorporated into earnings-related schemes, as in Sweden, or subjected to increased taxation via the income tax system, as in Canada.

Best suited to these groups. Formal means-tested schemes are suited to nonparticipants in the labor market; demogrants go to all sectors of the population.

Additional sources: See U.S. Social Security Administration (1999); and World Bank (1994). See also <http://www.worldbank.org/pensions>, especially the “Pensions Primer” and PROST modeling software.

Program 22: Disability inclusion programs

International experience. Research has shown that disabled persons and their households are at a high risk of poverty. The goal of disability inclusion programs is to reduce poverty in such households. These programs include services such as community-based rehabilitation, inclusive education, vocational education and training, job insertion subsidies, assistance payments, and pensions. Many countries have these programs, but coverage is poor in developing countries. Outcome indicators are weak.

Institutional structure. Disability inclusion programs cover a broad spectrum of topics and span the life of the individual. Programs can be targeted to the disabled or to persons with a specific disability, or this population can be served as one of a number of vulnerable groups. Generally it is most effective to set up coalitions of agencies to create schemes to serve this population. Decentralization of services to the local community is also effective. Education, health, and welfare ministries all administer these programs.

Benefit level. The benefit level depends on the program. It can include cash transfers, typically of 25–50 percent of minimum wage; pensions (in higher-income countries); subsidies or financing for assistive technology and training; budget allocations for teacher training; and so on.

Typical coverage. Coverage varies with each scheme. Disability affects as much as 10 percent of the population.

Range of administrative costs. Not well quantified in many programs.

Usual targeting mechanisms. Severity of disability, outreach to vulnerable groups, income level of household.

Range of targeting outcomes. There are errors of exclusion where the poor are unfamiliar with benefits or programs.

Unintended effects. Where benefits are high, minor disabilities tend to be overreported. In middle-income countries, disability certification gatekeeping is poor, leading to high costs, especially as the economy contracts. Well-designed programs not only serve the disabled, but also increase the earnings of their family by freeing time normally spent caring for the disabled person.

Political economy. Human rights groups are increasingly requesting creation of such programs, including in postconflict Africa.

Additional sources: See Elwan (1999); and STAKES (1996). See also www.worldbank.org/sp.

Program 23: Family allowances

International experience. These programs are very common in the OECD countries, Eastern Europe, and the former Soviet Union. A growing body of evidence exists about their administration and impact and about efforts to reform these programs.

Institutional structure. These programs are usually run in a uniform manner throughout the country, with the welfare or social security ministry setting policy. In some cases, the ministry's offices supply the staff power; in others, local agencies, such as municipalities, provide staff. Family allowances are sometimes distributed directly through the workplace or through local agencies for those who do not work.

Typical benefit level. Benefits are often small—a few dollars a month, representing a fraction of the cost of the food basket—although in some middle-income transition states, including Hungary and the Czech Republic, they provide a more substantial contribution to the cost of raising a child. Family allowances can take various forms, such as child benefits, family allowances, or birth grants, and can either be in cash or in kind—for example, in the form of subsidies on school uniforms or children's goods.

Typical coverage. There are three variants of family allowance programs:

1. means-tested programs, closely akin to needs-based cash assistance (see section M.2.17);
2. universal transfers for all children under a fixed age (often children under two or three years of age or those under 16 to 18 years of age); these are most common in Europe and the former Soviet Union, and are the subject of this fact sheet; and
3. in numerous non-OECD countries, family allowances cover only the employed population, often with a special system for public sector employees.

Range of administrative costs. Unknown.

Usual targeting mechanisms. Age of children. Occasionally benefit levels per child vary by number of children, and there is usually special provision for disabled children. In an increasing number of countries, a rough means test may screen out the upper end of the income distribution.

Range of targeting outcomes. The range is usually slightly better than distribution neutral because households with children, especially those with large numbers of children, tend to have a higher-than-average incidence of poverty.

Unintended effects. Theoretically, such programs are pronatalist because they reduce the costs of having children. However, empirical evidence shows (and sometimes program rules require) that child allowances encourage prolonged school enrollment, which leads to higher educational attainment and lower family size.

Political economy. These programs tend to be very popular and can be very difficult to remove or reduce once in place. They are often seen as an important tool in preventing the intergenerational transmission of poverty.

Best suited to these groups. Families with many children, regardless of employment status or sector of employment of parents.

Additional sources: See Atkinson (1995); Barr (1998); and Tabor (2001).

Technical Note N.3 Overview of Informal Transfers and the Design of Public SP Interventions

Informal transfers involve transfers or exchange between households of cash, food, clothing, informal loans, and assistance with work or child care. Depending on the size of the transfer, informal transfers can affect household income and consumption, investments in human capital, the fertility rate, and individuals' savings and wealth. They can also transmit patterns of inequality across generations and interact with SP programs. These transfers present a challenge to the effective design of public programs that is different from the challenge presented by transfer programs of NGOs or private firms.

What is the magnitude of informal transfers and the effect on poverty reduction?

For those countries where data exist, the evidence is that patterns of private transfers vary according to local conditions. Estimates are that transfers account for between 2 and 41 percent of income for net receivers, and for between 1 and 8 percent of income for net givers.

Evidence suggests that the bulk of informal transfers flow from older to younger households. Poor and vulnerable households are more likely to receive private transfers, while nonpoor households are more likely to give private transfers. Informal transfers may therefore equalize the distribution of income. Household characteristics other than income, such as gender of household head, education level, and ethnicity, also affect the pattern of informal transfers. For example, female-headed households appear to be more likely to receive transfers. In the United States, the probability of both giving and receiving private transfers increases with the level of education (MacDonald 1990; Cox and Raines 1985).

How effective are private transfers in risk management?

Empirical evidence suggests that informal transfers are generally weak in facilitating risk management by households, particularly for covariate risks. Rosenzweig (1988) estimates that Indian transfers typically amount to less than 10 percent of the size of typical income shocks in bad periods. Following the 1984 drought in the Sahel, Reardon, Delgado, and Matlon (1988) found that transfers made up less than 3 percent of losses for the poorest households. Similarly, Czukas, Fafchamps, and Udry (1998) find little evidence that transfers offset income shocks in the Burkina Faso droughts between 1981 and 1985.

In normal circumstances, informal insurance may be more effective. While Cox and Jimenez (1997), for example, find that just 40 percent of black South African households either give or receive private transfers, the level of transfers is relatively high for net recipients, making up 37 percent of income on average. Similarly, while fewer than 10 percent of white South Africans report giving or receiving transfers, private transfers made up 25 percent of income for net recipients. For black South Africans, the transfers tend to go from young to old individuals, suggesting that the transfers largely address low-frequency shocks, such as aging and chronic health problems, rather than the sorts of high-frequency shocks considered elsewhere. Although the reported transfers are far from ubiquitous, they do appear to matter for a substantial minority of households, and generalizations should be made with care.

Is the crowding out of private programs an issue?

Evidence suggests that although private transfers are important, and may be critical to some poor households, they are not fully adequate substitutes for public action in many aspects of SP in many countries. A rationale for public intervention and programs arises because informal transfers often fail to protect the ultra-poor (Morduch 1999). Public intervention is also needed when income shocks are covariate (Subbarao and others 1997); when delivery mechanisms are costly (Morduch 1994); when the severity of the income shock is extraordinary, such as in the case of droughts, epidemics, or macroeconomic shocks (Coate and Ravallion 1993); and when shocks are repeated (Deaton 1992). Furthermore, informal transfers may lead to poverty traps by either solidifying economic and social barriers along ethnic, gender, generational, and class lines (La Ferrara 1997; Fafchamps 1991; Platteau 1996; Hoff 1997) or by creating inefficiencies that ultimately undermine economic progress over time (Banerjee and Newman 1997). As a result, crowding out some informal transfers or mechanisms may be an acceptable cost or even a desired goal (Morduch 1999).

Also, a central concern is whether public programs crowd out private transfers in a way that is less than optimal. It is not whether or not crowding out exists that is important, but whether a given option for a public program results in a better SP system when all the benefits of the program, which might include more complete coverage of the vulnerable or more complete assistance to those reached, are weighed against its costs, including some crowding out of private transfers.

What are the implications of informal transfers for the design of SP programs?

As mentioned above, crowding out is a cause for policy concern only if it implies that public resources are inefficiently allocated. Thus some studies of transfers have tried to identify the appropriate recipients of transfers and the magnitude of these transfers in relation to the private safety net already in place in each country. In estimating cost-effectiveness, analysis of public programs should include crowding out as an additional cost. The costs of crowding out are higher where public safety net programs are crowding out well-functioning informal transfers or where public programs undermine existing informal systems of self-help while encouraging a culture of dependency among the poor.

Annex O

Health, Nutrition, and Population: Technical Notes

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Technical Note O.1 Health, Nutrition, and Population Lifecycle

Introduction to the lifecycle approach

A first step in improving the health (health, nutrition, and population) outcomes of the poor is to assess health, nutrition and population outcomes generally, and among the poor and other disadvantaged groups in particular. This section uses a lifecycle approach to assess what the key risks, interventions, and outcomes are, and describes how they can be defined and measured in practice. A detailed description of the risks, interventions, and outcomes for each stage of the lifecycle is available on the *PRSP Sourcebook* CD-ROM and at <http://www.worldbank.org/poverty/strategies/chapters/health/health.htm>. Based on such an assessment and on other implementation and context-specific issues, targets can be set for improvements in health, nutrition, and population outcomes for the population as a whole and for the poor especially.

The advantages of a lifecycle approach are several. It recognizes that:

- ⊃ health is cumulative;
- ⊃ maximum benefit in one age group can be derived from interventions in an earlier age group;
- ⊃ intervening at one point or a few points is not enough for sustainable improvement of health outcomes among the poor; and
- ⊃ interventions in one generation will bring benefits to successive generations.

The approach also allows for better use of scarce resources by facilitating identification of key risks and gaps, and for the prioritization of key interventions to help break the poverty–ill health cycle.

The lifecycle approach can be used and applied:

- ⊃ as an *assessment tool*, to identify gaps and neglected risks of the poor at different stages in the lifecycle;
- ⊃ as a *project planning tool*, to facilitate the prioritization and selection of those interventions that influence critical risks and gaps and that are feasible, affordable, appropriate, and cost-effective;
- ⊃ as an *advocacy and communications tool* in the poverty reduction strategy process, to draw attention to the multiple determinants of ill health among the poor;
- ⊃ to *identify synergetic actions within and beyond the health sector*.

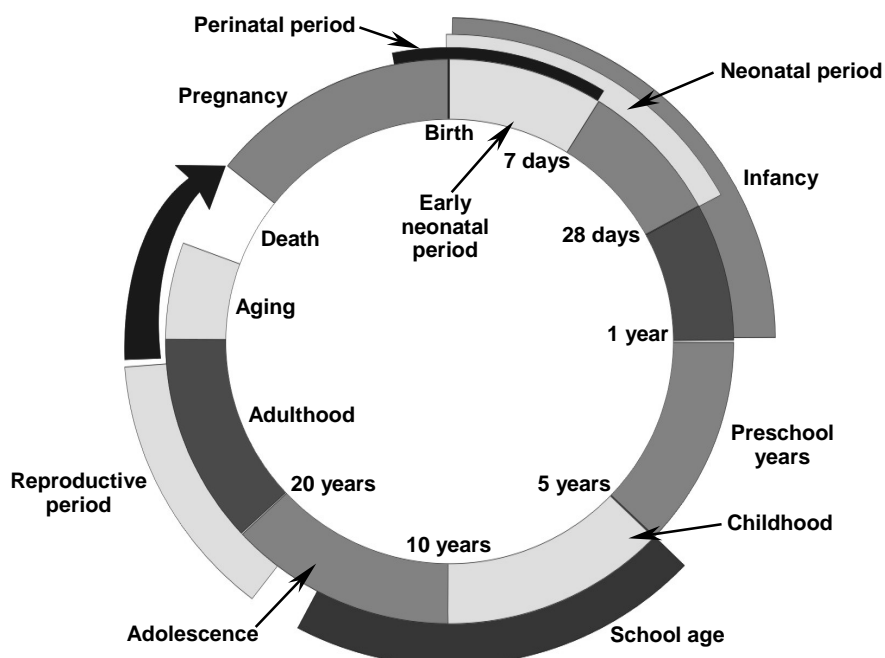
This technical note reviews the key risks, interventions, and outcomes at different stages of the lifecycle. Particular attention is given to some of the main risks of poverty and to cross-cutting problems that affect all stages of the lifecycle. Only evidence-based interventions that have been tested for effectiveness and feasibility and only those standard measurements that have been agreed on by technical partners have been included (as of March 2001). This document is a work in progress and will be revised on an ongoing basis and updated as new evidence emerges.

The lifecycle stages

Figure O.1 shows the key stages in the lifecycle: infancy; the preschool years; the school-age years; adolescence; early adulthood; the reproductive years and periods of pregnancy, in the case of women; and late adulthood.

At each stage of the lifecycle there are risks to health, and associated with each is a corresponding intervention and related outcome indicator. For example, during the first year of life (infancy) there are risks of illness, poor nutrition, growth and development, and death. The focus of this technical note is

Figure O.1. The Main Stages in the HNP Lifecycle



those risks that can be reduced through actions in the health, nutrition, and population sector, with cross references to other sectors. Many key health problems are influenced by multisectoral factors, as evidenced by the case of maternal and child health outcomes (see figure O.2).

Risks throughout the Lifecycle

Each stage in the lifecycle is associated with particular risks. Figure O.3 shows some of the main risks to poor individuals over the course of the lifecycle, some of which disproportionately affect the poor. The risks in pregnancy and early childhood are shown in the upper part, and those in later childhood years, adolescence, and the reproductive periods are shown in the lower part. In addition to the risks highlighted in figure O.3, there are also risks of mortality and morbidity, throughout or at later stages of the lifecycle, associated with malaria, TB, HIV/AIDS, and with noncommunicable diseases such as accidents and injury, diabetes, cardiovascular diseases, mental illness, and cancer. Malnutrition increases the risks of dying from other causes: in children under the age of five in poor communities, malnutrition is associated with 54 percent of all deaths. Nutritional risks include iodine deficiency disorder (IDD) and vitamin A deficiency (VAD) during pregnancy and childhood. Nonexclusive breast feeding is a major nutritional risk factor during the neonatal period. In infancy, growth faltering and poor nutrition, including micronutrient deficiencies (IDD, anemia, and VAD), are some of the critical risk factors of low-income populations. Micronutrient deficiency, anemia, and poor nutrition are risks throughout childhood, school age, adolescence, and the reproductive period.

Key interventions and strategies

Main public health and clinical interventions have been identified at each stage of the lifecycle, as shown for the periods of pregnancy and childhood stages in figure O.4. The main nutrition interventions throughout the lifecycle are shown in figure O.5 and described in the following sections. How to prioritize among all the key interventions will depend on the major risks identified, the gaps identified in addressing these risks, and the status of health, nutrition, and population outcomes among the poor. Packaging of interventions is one strategy for ensuring maximum benefit at a given stage of the lifecycle and to increase efficiency: Figure O.6 illustrates two examples of this: IMCI (integrated management of childhood illness) and FRESH (focused resources on school health). The MINPAK (nutrition minimum package) and IMPAC (integrated management of pregnancy and childbirth) are similar sets of basic strategies, designed to address childhood malnutrition through the health sector and the risks during pregnancy and childbirth.

Figure O.2. Multiple External Factors Influence Outcomes of the MCH Cycle



- ⊃ The *Public Health at a Glance* fact sheets prepared by the health, nutrition, and population (HNP) network (April 2001)¹ provide useful summaries on most of the proposed programs and interventions discussed here, such as reproductive health; child health, including IMCI; school health; malaria; TB; HIV/AIDS; mental health; and tobacco.

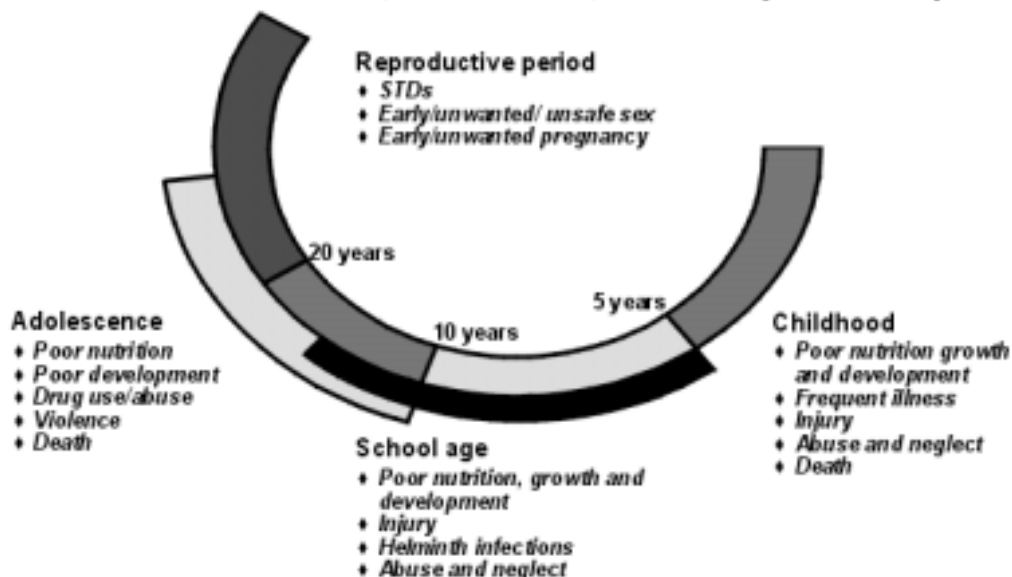
Possible criteria for prioritizing problems and ranking priority interventions identified throughout the lifecycle are:

- ⊃ the problem disproportionately affects the poor;
- ⊃ the problem can be significantly reduced among the poor;

Figure O.3. Main Risks Throughout the Lifecycle



Main risks of childhood, adolescence, and the reproductive period



- ⊃ the intervention reduces a large problem among the poor as assessed by its prevalence among the poor, by its contribution to the burden of disease and disability of the poor, or by its associated mortality or nonhealth outcomes, such as school performance and work productivity of the poor;
- ⊃ the intervention strategy is consistent with and contributes to overall poverty reduction;
- ⊃ the intervention is affordable, effective, feasible, cost-effective, and culturally appropriate in the target population.

HNP outcome indicators by stage of the lifecycle

Building on the lifecycle approach, figure O.7 shows some of the main HNP outcome measures during pregnancy, early life, childhood, adolescence, and the reproductive period of the HNP lifecycle. The definitions of these outcome indicators are discussed in the following sections, as are other key indicators during adulthood. Indicators of morbidity and health are less frequently encountered in developing countries than in industrialized ones, and are often considered to be subject to reporting biases that vary with economic status and education. Work is ongoing in this area, however. The major anthropometric measurements during childhood are: underweight, stunting, and wasting rates.

Figure O.4. Main Reproductive Health Interventions

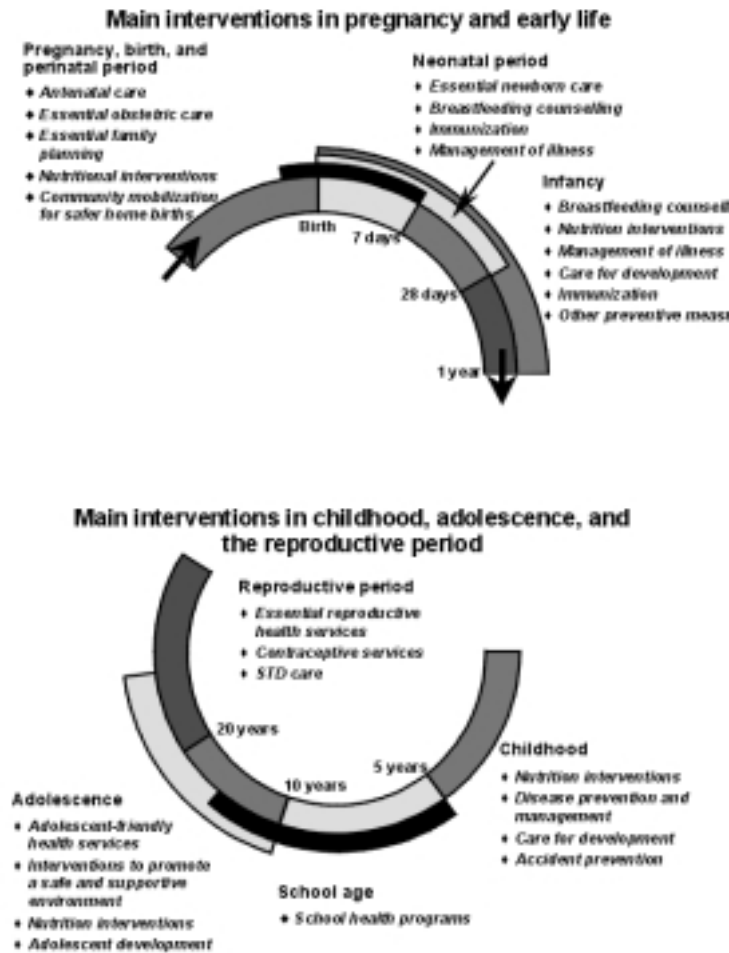


Figure O.5. Main Nutrition Interventions

Nutrition interventions around the lifecycle

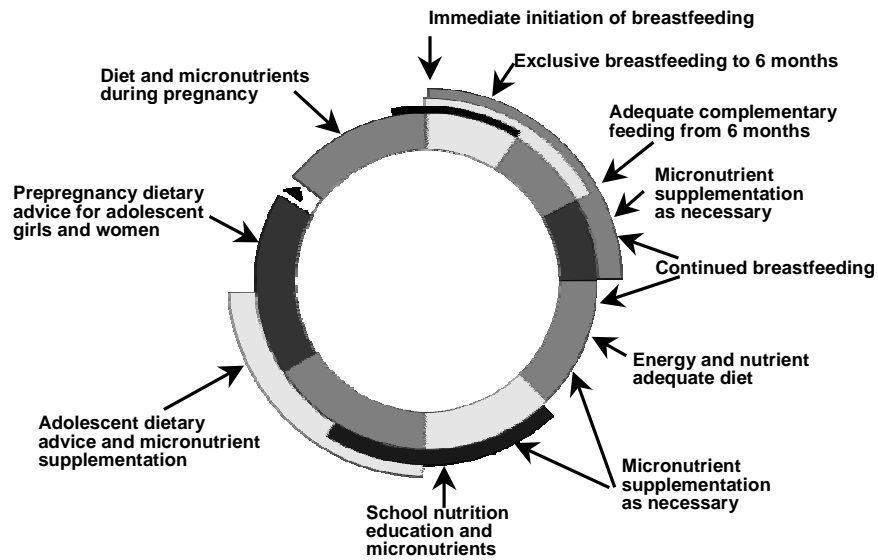
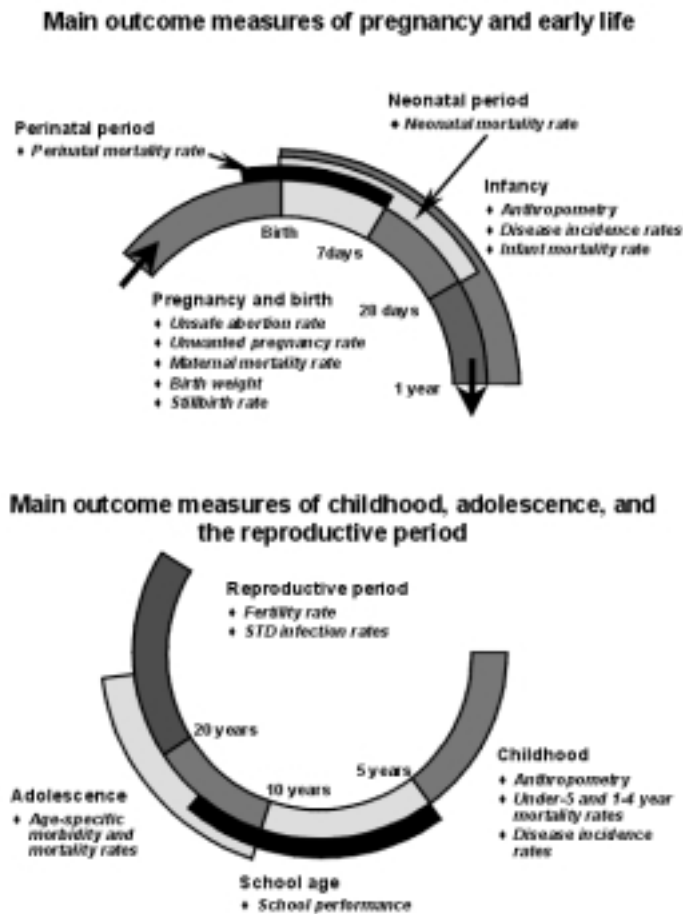


Figure O.6. Two Examples: IMCI and FRESH Start



Figure O.7. Main HNP Outcomes, Selected Periods



World Bank HNP Poverty Information Sheets

Using demographic and health survey (DHS) data for 48 countries, the World Bank's HNP Poverty Thematic Group has produced information sheets showing the variations across economic groups of key HNP outcomes and determinants (see table O.1).

Indicator definitions

The definitions of the indicators used are presented below. In general, they follow closely the definitions used by the DHS program.

Health, nutrition, and population status indicators

Infant mortality rate. The number of deaths of children under 12 months of age per 1,000 live births. The figures used in the information sheets are based on births in the 10 years preceding the survey.

Under-five mortality rate. The number of deaths of children under five years of age per 1,000 live births.

Percentage of children stunted. The percentage of children whose height measurement is more than –2 standard deviations below the median reference standard for their age as established by the World Health Organization, the U.S. Centers for Disease Control, and the U.S. National Center for Health Statistics.

Table O.1. Countries with HNP/Poverty Information Sheets

Country	DHS Round	Year	Country	DHS Round	Year
Africa (24 countries)					
Benin	III	1996	Mali	III	1995/6
Burkina Faso	II	1992/3	Mozambique	III	1997
Cameroon	II	1991	Namibia	II	1992
Central African Republic	III	1994/5	Niger	III	1998
Chad	III	1996/7	Nigeria	II	1990
Comoros	III	1996	Rwanda	II	1992
Côte d'Ivoire	III	1994	Senegal	II	1997
Eritrea	III	1995/6	Tanzania	III	1996
Ghana	III	1993	Togo	III	1998
Kenya	III	1998	Uganda	III	1995
Madagascar	III	1997	Zambia	III	1996
Malawi	II	1992	Zimbabwe	III	1994
Asia/Near East/North Africa (15 countries)					
Bangladesh	III	1996/7	Nepal	III	1996
Egypt	III	1995/6	Pakistan	II	1990/1
India	III	1992/3	The Philippines	III	1998
Indonesia	III	1997	Turkey	III	1993
Jordan	III	1997	Uzbekistan	III	1996
Kazakhstan	III	1995	Vietnam	III	1997
Kyrgyz Republic	III	1997	Yemen	III	1997
Morocco	III	1993			
Latin America/Caribbean (9 countries)					
Bolivia	III	1998	Haiti	III	1994/5
Brazil	III	1996	Nicaragua	III	1997/8
Colombia	III	1995	Paraguay	II	1990
Dominican Republic	III	1996	Peru	III	1996
Guatemala	III	1995			

Percentage of children underweight. The percentage of children whose weight measurement is more than -2 standard deviations (moderately underweight) or more than -3 standard deviations (severely underweight) below the median reference standard for their age as established by the World Health Organization, the U.S. Centers for Disease Control, and the U.S. National Center for Health Statistics.

Percentage of mothers with low body mass index (BMI). The percentage of women whose BMI is less than 18.5, where BMI is defined as weight in kilograms divided by the square of height in meters and is a measure of adult nutritional status. In some countries the BMI is presented for all sample women, while in other countries the figure is available only for mothers of children under five years of age.

Total fertility rate (TFR). The average number of births a woman could expect to have during her lifetime if she followed observed levels of fertility for her age group at every age. The TFR is calculated as the sum of average annual age-specific fertility rates for all reproductive age groups (usually at least 13 and at most 50 years old) during the three years preceding the survey. For each country, the TFR is calculated based on a sample of ever-married women and then extrapolated by DHS to all women of reproductive age for that country.

Adolescent fertility rate (age-specific fertility rate for women 15-19 years old). The average number of births a woman age 15-19 could expect to have during her lifetime if she followed observed levels of fertility for that age group, expressed per 1,000 women aged 15-19. As with the TFR, the adolescent fertility rate is calculated as an annual average for the three years preceding the survey. The adolescent fertility rate is calculated based on a sample of ever-married women and then extrapolated by DHS to all women ages 15-19 years for the country concerned.

Health, nutrition, and population service indicators

Immunization rate. The percentage of surviving children aged 12–23 months who received a measles vaccine; three doses of DPT and an oral polio vaccine; all vaccinations—namely, BCG, three doses of DPT and oral polio, and measles; and no vaccines at all. The figures are a combination of information recorded on the child’s vaccination card, or, in cases where a card was not available to show the interviewer, as reported by the mother.

Diarrhea.

- **Prevalence.** The percentage of surviving children under five years old who had diarrhea in the two weeks preceding the survey, where diarrhea is defined by the mother’s report of the presence of loose stools and, in some but not all surveys, the frequency of stools in a day.
- **Treatment.** The percentage of children with diarrhea in the past two weeks who received oral rehydration therapy (ORT), which includes oral rehydration salts, recommended home fluids, or increased liquids; the percentage who were taken to any medical facility for treatment, defined as a private doctor, mission/hospital clinic, other private hospital/clinic, pharmacy, or a public facility; and the percentage of those seen medically who were taken only to a public facility, defined as a government hospital, government health center, or government dispensary.

Acute respiratory infection (ARI).

- **Prevalence.** The percentage of surviving children under five years old who had a cough accompanied by rapid breathing in the two weeks preceding the survey, as defined and reported by the mother.
- **Treatment.** The percentage of children with a cough and rapid breathing in the preceding two weeks who were taken to any medical facility for treatment; and the percentage who were taken to a public facility. Definitions for facilities are the same as those for the treatment of diarrhea.

Antenatal care. The percentage of births in the five years before the survey for which a woman received at least one antenatal care consultation from a medically trained person, defined as a doctor, nurse, or nurse-midwife; at least one antenatal care consultation from a doctor; at least one antenatal care consultation from a nurse or nurse-midwife; and two or more antenatal care consultations from a medically trained person.

Delivery attendance.

- The percentage of births in the five years prior to the survey that were attended by a medically trained person, defined as a doctor, nurse, or nurse-midwife; a doctor; or a nurse-midwife.
- The percentage of all deliveries in the five years prior to the survey occurring in a public medical facility, defined as a government hospital, government health center, government maternity center, or other country-specific public sector facilities; a private medical facility, defined as a mission hospital/clinic or other private hospital/clinic; and at home, defined as own or any other home.

Use of modern contraception. The percentage of married women and men who report using any modern means of contraception, defined as male/female sterilization, oral contraceptive pill, contraceptive injection, intrauterine device, male/female condom, diaphragm, cervical cap, or contraceptive jelly or foam. For some countries, the sample includes couples in consensual unions. Information on male contraceptive use is not available for all countries.

Knowledge of HIV/AIDS prevention. The percentage of women or men who report that they know of HIV/AIDS and know of at least one of the following means for preventing HIV/AIDS through interruption of its sexual transmission route: abstinence, using a condom, avoiding multiple sex partners, avoiding sex with prostitutes, and avoiding unprotected homosexual sex. In most cases, all survey respondents, regardless of marital status, are asked this question; where a particular survey has only an ever-married sample, the data are extrapolated by DHS to all men and women. This information is not available for men for some countries, and not available for either men or women for some countries.

Child deaths in Bolivia are preventable

Results of Bolivia’s largest mortality survey show that Aymara Indian children under five years of age are dying of easily treatable diseases. The survey, conducted by BASICS in El Alto, outside La Paz, was designed to answer two questions: why are Aymara children dying? and what prevents them from

receiving life-saving care? To answer these questions, 271 caregivers of children who had died were interviewed to determine what behaviors may have contributed to the children's deaths.

El Alto is a peri-urban community of approximately 500,000, most of whom are Aymara Indians who have migrated to the city from Bolivia's rural areas. Literacy is low. Traditional attitudes, beliefs, and practices are a major part of everyday life. Traditional medicine, with its belief in supernatural causes of physical illness, is a common source of health care outside the home. In this setting, treatable illnesses such as diarrheal disease and acute respiratory infections are the main causes of death among Aymaran children.

During the survey interviews, each caregiver gave a detailed account of the events surrounding the death of the child, the symptoms the child displayed, the actions of the caregiver, and the types of help or services that were sought. If the caregiver consulted formal health care services, the interviewer reviewed the medical records.

These stories revealed that the caregiver often was unable to recognize the symptoms of serious illness. In most cases, however, it did not matter whether or not the caregiver recognized symptoms: no outside care was sought. If symptoms were recognized, many times it was too late. The caregiver often did not know where to go for help or sought the help of traditional healers. Often these treatments did nothing and may have, in some cases, contributed to a child's death. Long-held attitudes and beliefs, combined with a lack of knowledge and awareness of childhood illnesses, were barriers to seeking and receiving proper health care. The stories painted a picture of a rapid march from illness to death, usually within three days of the onset of illness.

The results of the survey showed a sad and alarming trend. Ninety percent of the child deaths examined in the survey had occurred by age two. One-third of these deaths were in infants less than a month old, and nearly half of these died in their first day of life.

BASICS and Ministry of Health (MoH) officials examined the accounts to identify intervention points throughout the caregiving process that could help prevent child deaths in the future. In addition, the survey process enabled BASICS and the MoH to design a methodology for gathering child mortality data using community participation, an important step in helping the MoH keep abreast of health care needs.

The methods and results of the survey are available through the Information Center at the BASICS Project, Suite 300, 1600 Wilson Boulevard, Arlington, Virginia, 22209, and on-line at http://www.basics.org/highlight/M&E/Highlights_M&E_1.htm

Technical Note O.2 An Illustrative Example of Using Information about Clients to Better Manage Vaccine-Preventable Illness in Rural India

The conceptual framework suggested in the main chapter lends itself to practical applications for addressing the health of the poor. The following case illustrates how understanding household actions and community risks can help policymakers develop pro-poor sectoral policies. Using a diagnostic and policy development framework similar to the logical framework suggested in the main chapter, this brief example illustrates how starting with outcomes and outputs for the poor, then listening to vulnerable communities and linking findings to the health delivery system, can result in practical policies for reaching the poor.

It is important to note that the work on strengthening immunization in India includes other important factors not discussed here. Selectivity was used to keep this example simple and targeted. A more complete presentation of the work is provided in project documents, including the World Bank's Project Appraisal Document (World Bank, Project Appraisal Document, India: Immunization Strengthening Project, March 30, 2000, Report No. 19894-IN).

Focusing on the outcomes of the poor

As indicated in the main chapter, there is a threefold difference in the child mortality rate amongst the richest fifth of households in India and the poorest fifth. The income-related differences are similar for infant mortality. Burden of disease findings link the high levels of infant and child mortality to communicable and vaccine-preventable illnesses. In other words, if the children of poor families in India are dying

at a much higher rate than those of wealthier families, there is a likelihood that preventive life-saving services are not reaching the children of the poor.

Looking at the health sector output, immunization, that most closely links the system to infant and child mortality, three nationally representative household surveys in 1993, 1996, and 1998 confirm that the children of poor and socially vulnerable families in India are least likely to be immunized. Table O.2 shows the level of inequality in a number of immunization measures. While the overall level of immunization coverage appears to be very low, the level of inequality is even more stark. The last two rows in table O.2 show that the children of the wealthiest 20 percent of households in India are four times as likely to have received some vaccinations than children of the 20 percent of poorest families, and three times as likely to have received all routine vaccinations.

Listening to vulnerable families

The critical household action needed for a child to be immunized is for the household to seek a health care provider that has the inputs needed to perform the immunization, including vaccines, cold-chain equipment, training, and supplies. For the household action to take place, the following interrelated conditions should exist:

- Decisionmakers in the household need to know about immunization and should believe that it is important for child survival and well being.
- Financial resources are needed for the household to seek care. Money is needed for transportation, productive time lost in seeking the provider, and payments for the provider (official or unofficial).
- The household needs to have physical access to a provider in whom they hold some element of trust.

To help determine the relative importance of these three conditions in India, the 1998 household survey asked households with children that had not been immunized why they did not seek this life-saving preventive service. While all three conditions listed above were mentioned, two specific answers—both related to knowledge—accounted for more than 63 percent of responses: 30 percent of respondents were not aware of the need for immunization and 33 percent were not aware of the time and place that immunizations were to be provided.

Once it has been established that the information gap is an important determining factor, it is essential to find out how to reach the poor and socially vulnerable with behavior change communication interventions. The 1998 household survey provides a partial answer by examining the likely interactions between the targeted group and the health system. In the case of the poorer states in India, the most likely point of contact between the health system and the poor and socially vulnerable groups is the auxiliary nurse midwife (ANM). ANMs are the primary source of immunization coverage for the poorest, least educated, and lower castes, and would appear to represent the most appropriate service delivery mechanism to target for delivering immunizations and information.

Passive forms of listening to the poor, through household and other surveys, can provide policymakers only with partial answers. There is a need to supplement this with more active forms—qualitative data collection—in order to get a better and deeper understanding of the determinants of and constraints facing household actions. In the context of immunization in India, the 1998 survey identifies ANMs as an important medium for health communications, but other important information mediation mechanisms also exist. Social assessment work is useful in seeking to explore more fully how knowledge is disseminated to the target clients. Listening to those clients can inform the design of a communication strategy to address the information gap and increase the probability that poor households seek immunization for their children.

Table O.2. Demographic and Health Survey 1992/93, Wealth and Immunization Coverage, India

<i>Immunization type</i>	<i>Poorest 20%</i>	<i>2nd poorest 20%</i>	<i>Middle 20%</i>	<i>2nd richest 20%</i>	<i>Richest 20%</i>
Measles	27.0	31.0	40.9	54.9	66.1
DPT 3	33.7	41.1	51.8	64.6	76.7
All vaccinations	20.2	25.1	34.1	46.9	59.8
No vaccinations	44.7	38.9	28.8	18.8	11.5

Community influences matter, too

The work, highlighted above, on improving the reach of life-saving immunizations represents an output serving the desired HNP outcome of children free of vaccine-preventable diseases. The provision of vaccines is only one of several interventions that can contribute to achieving this outcome, however. Risk analysis indicates poor households to be especially vulnerable to vaccine-preventable communicable diseases because of the sanitation conditions in poor rural communities and urban slums, for example. While the health sector has limited scope for addressing sanitary conditions, working with other elements of the Indian Government and other development partners can help decrease the risk for children in poor households. An example of collaborative efforts is the creation of geographic information systems on the poverty and disease burden that can be used to improve resource allocation. Resources managed by health and infrastructure activities can then be cotargeted at the most vulnerable segments of society.

The role of players in the health system

The discussion of the role of the auxiliary nurse midwife in delivering both information and immunization to families in rural India assumes a dominant service delivery role for the Indian Government. Simple market analysis can shed more light on the roles of the private and public sectors and on possible future partnerships.

While more than 70 percent of total health spending for curative care in India is used to purchase private health services, the picture is different for the provision of immunization services. The 1998 household survey shows the private sector to play a very small role in the provision of immunization, especially in rural India. State-level data show private sector delivery of immunization services ranging from a high of about 23 percent in Andhra Pradesh, Kerala, and Tamil Nadu to less than 5 percent in Orissa, Madhya Pradesh, and West Bengal. Moreover, most private sector delivery is focused on the urban sector. Market analysis provides some answers for the reluctance of private providers to provide immunization services. Providers identified the cost of buying and maintaining cold storage equipment and the low returns from limited demand as important factors in the decisions not to provide the service.

The role of the private sector in delivering immunizations for the rural poor is limited, especially in the poorer states. The short-term strategy should therefore focus on making the public sector more effective in service delivery while using both private and public sector actors to address the informational gaps that are largely responsible for the low demand for life-saving services.

Summary

Starting with household survey data on immunization in India, the household perspective focused analysis and guided policy development by tracing the policy levers likely to positively impact household actions. Monitoring and evaluation systems can next be developed by focusing limited resources on the most critical determining factors. By recognizing the added risks created by environmental factors in poor communities, inputs typically outside the health sector can be cotargeted to maximize the probability of achieving a shared health outcome.

Technical Note O.3 An Example of How to Approach Public Expenditure Analysis in the Health Sector

Figure O.8 at the end of this technical note illustrates a process for undertaking a public expenditure analysis in health. The steps are outlined below:

Step 1: The Budget (Allocative Efficiency)

1. In health, unlike in the other social sectors, there are some pure (or nearly pure) public goods that virtually require public financing if they are to be provided adequately. These include public health and preventive services, whose benefits reach the public at large as opposed to being captured by specific individuals; for example, vector control, communicable disease surveillance and management, and immunizations. Any slack in these programs will not be taken up by private expenditures. These are perhaps the highest-priority expenditures.

Figure O.8. Example of a Process for Undertaking a Public Expenditure Analysis in Health

Step 1			
THE BUDGET: Economically meaningful expenditure/program classifications			
<u>Health</u>			
Public health/preventive services Clinics/basic acute services Hospitals/catastrophic services Insurance/subsidies for risk sharing			
Step 2			
ROUGH ANALYSIS: Inputs, outputs, client satisfaction, equity International and internal comparisons			
<u>Allocative Efficiency</u>	<u>Efficiency of Input Use</u>	<u>Equity</u>	<u>Inter-Governmental Fiscal Relations</u>
Public /private goods Social/private returns	Administrative costs Inputs: Salaries vs. other expenditures Volume of outputs Financing vs. provision	Incidence of expenditures	Scope of federal, provincial, community roles Financing key public health activities across jurisdictions Incentive structure of fiscal relations
Step 3			
SIMULATIONS: Recommend changes to improve efficiency, equity, and federal role Simulate the impact in a three- to five-year rolling expenditure program to improve allocations, efficiency, and incentives			
Step 4			
IDENTIFY SHORT- AND LONGER-TERM ISSUES: Special topics for continued expenditure monitoring			
<u>Immediate Concerns</u>	<u>Medium-Term Issues</u>		
Outcome measures Program budgeting Monitoring expenditure and tax incidence	Institutional reform to improve accountability, for example, hospital autonomy Development of insurance and financial instruments for risk sharing Contracting with NGOs and other providers Improving federal/provincial/municipal fiscal relations in social sectors		

2. The next level of importance is basic clinical and acute services. This infrastructure, or something like it, is required to provide public health services and to provide one outlet for subsidized health services for the poor (this could also be funded through NGOs or private providers, but typically is not). An efficient clinic system, characterized by a reasonable level of quality and patient satisfaction, is the next priority.
3. Finally, higher-level, costly hospital services provide a measure of safety to the population in case of catastrophe. In a resource-constrained environment of a low-income country, as much of the cost of these services as possible needs to be shifted off the government budget or it will crowd out (1) and (2).

The benefit structure of (1) and (2) tends to be pro-poor, and the impact can be enhanced through geographical targeting. Level (3) is almost always skewed toward the rich, the more so the poorer is the country. There are no exact standards for the proportion of funding that should go to these different components of expenditure. However, it is important on grounds of both allocative efficiency and equity to properly fund public health services and basic acute services as a matter of priority. The residual category should be hospital services, and that spending could be replaced by direct cash subsidies to the poor and others who are unable to adequately insure themselves. Unfortunately, in public spending

hospitals tend to be the primary category of expenditure and the two more important categories, public health and basic clinical services, tend to be the residual categories.

Step 2: Analysis of Efficiency

Step 1 addresses technical and input efficiency. The next step is to address how this might be translated into a public expenditure review:

- (1) Administrative costs are usually much less than 10 percent of the health budget. Red flags should start emerging, however, if costs exceed even 5 percent.
- (2) Often there is a disaster on the input side. In the 1980s in Peru, salaries consumed nearly 100 percent of expenditures at the clinic level, so the system delivered virtually nothing more than the warm bodies of nurses and doctors, who were able to produce little without other inputs. In the high-salary, expensive U.S. health system—which nevertheless must be able to deliver services to attract patients in a competitive market—salary expenditures at the hospital level tend to hover around 50–55 percent of costs. In developing countries, a ratio this low is rare. To reduce the proportion paid in salaries would require either that budgets rise for non-salary costs or that salary costs be cut. Either way, to change the input mix into something that can deliver services would require radical reallocations in the expenditure patterns of most developing countries.

Salaries are not the only input. At the facility level, it is important to assess the efficiency of use of capital and equipment. Have past investment policies produced a system with many underused and poorly maintained buildings? Does equipment stand idle or in need of repair? The solution requires not only increases in repair and maintenance costs but often also requires difficult decisions about closing down facilities, seeking management by nongovernmental entities of facilities the government cannot maintain, and changes in any incentives that lead to excess capacity and inadequate maintenance.

- (3) Utilization is an important but rarely addressed issue in the efficiency of government services, and one that is often addressed solely on the input side. Are there any patients? If a doctor or nurse is seeing just four or five patients a day, or if a hospital is at 30 percent bed occupancy, the government is clearly wasting a share of its health budget. OECD physicians see between 30 and 40 patients a day and hospitals should on average have at least an 80 percent bed occupancy level.

A problem in poor countries that lack adequate transportation infrastructure is that the worst utilization statistics will be in rural areas. Utilization analysis can help by making the efficiency cost versus equity-enhancing tradeoffs of such decisions explicit. Even in the most tightly constrained system, there are often large potential efficiency gains that can be made through employing alternative contracting mechanisms and closing nonperforming assets to produce a smaller system that can function properly.

- (4) It is usually instructive to mount a small study within a country to compare the performance of different types of service providers (government, private, charitable) working within the same environment. This can be done reasonably fast and inexpensively.

Analysis of equity

Incidence analysis of government expenditures in health, however crude, is absolutely essential. At a minimum, the different levels of service need to be analyzed (public health, primary, secondary, and tertiary).

Intergovernmental (and facility) fiscal and managerial relations

Even in unitary political systems, a fully centralized governmental health system makes little sense. Gains can be made by moving money and decisions to the local political and facility levels, as long as this is accompanied by proper performance measures to hold the lower levels accountable. Many health risks and conditions vary substantially by geographical location, and delivery of personal health services depends heavily on individual contacts. These characteristics create benefits from local decisionmaking. In federal systems, which level of government funds what, where the tax base lies, and the role the federal level plays in providing equalization grants among subnational governments are key topics that strongly affect health policy.

Steps 3 and 4: Simulations and longer-term issues

At the very least, any proposed changes in budget allocations should come with simulations showing their expected impact on efficiency and distribution of subsidies, a monitoring framework for assessing the impact in practice, and alternatives for decisionmakers. In addition to illustrating the proposal, these simulations can help those preparing an expenditure proposal to refine and simplify it.

Public expenditure on health: Who benefits?

Introduction

Public subsidies for health services are often seen as a means of improving HNP outcomes of the poor. A fairly undemanding criterion for a successful subsidy program would be that without it, would the distribution of health service utilization across income groups be more unequal; that is, skewed toward the better-off? In this sense, public subsidies for health have probably been a success. In Indonesia, for example, private expenditure on health care is far more unequally distributed across income groups than income, which in turn is more unequally distributed across income groups than public health subsidies (Van de Walle 1995). A more demanding criterion would be that public subsidies for health services ought to be targeted on those who need health services most—presumably the poor. In this sense, public subsidies for health services in developing countries have, for the most part, been a failure. One of the most spectacular failures in this respect is Guinea, in which the poorest quintile received only 4 percent of public subsidies for health, while the richest quintile received 48 percent (Castro-Leal and others 1999). This technical note sets out the techniques for assessing the incidence of benefits (benefit-incidence analysis, or BIA) and reports some key results for the PRSPs.

Benefit incidence analysis

The aim of a BIA is to assess how different income groups compare in terms of the amount of health subsidy they receive. The exercise involves coupling household survey data (containing information on the utilization of different types of service by people with different incomes) with aggregate data on subsidies for different types of service.

Table O.3 shows the average number of primary care visits per income quintile in Vietnam. These data are obtained from a household survey, and households have been ranked by income into income quintiles. The column headed “subsidy per visit” indicates the amount of subsidy associated with each primary care visit. This is computed from the data in the table. The total net subsidy is simply the total gross subsidy less any cost recovery, and the net subsidy per unit is the total net subsidy divided by the number of units of utilization. The total subsidy per quintile is the average number of units of utilization multiplied by the per unit net subsidy. The same exercise can be undertaken for other subsectors (see table O.5). The total subsidy for each quintile is then simply the sum of subsidies for each of the subsectors. In the case of Vietnam, the total health sector subsidy is decidedly pro-rich. This obviously reflects the pro-rich distribution of subsidies to the hospital sector and the relative importance of the hospital sector in the total subsidy—in Vietnam, more than 60 percent of the total subsidy went to the hospital sector. The fact that primary care in Vietnam is so unequally distributed ultimately matters little, since both outpatient and inpatient care utilization are so heavily skewed toward the better-off.

Table O.3. Distribution of Subsidies for Primary Care in Vietnam

<i>Quintile</i>	<i>Visits</i>	<i>Subsidy per visit</i>	<i>Total subsidy</i>	<i>% subsidy</i>
Poorest	2,264	2.51	5,678	19%
2	3,396	2.51	8,517	29%
3	2,830	2.51	7,098	24%
4	2,264	2.51	5,678	19%
Richest	1,132	2.51	2,839	10%
<i>Average</i>	<i>2,377</i>	<i>2.51</i>	<i>5,962</i>	
Total	11,887		29,810	

Source: Prescott (1997).

Table O.4. Subsidies and Cost Recovery for Primary Care in Vietnam

<i>Item</i>	<i>Amount</i>
Health costs (m dong)	31,810
Fees (cost recovery) (m dong)	2,000
Net subsidy (m dong)	29,810
Visits (m)	11.887
Subsidy per visit (dong)	2.51

Source: Prescott (1997).

Table O.5. Distribution of Health Sector Subsidies in Vietnam

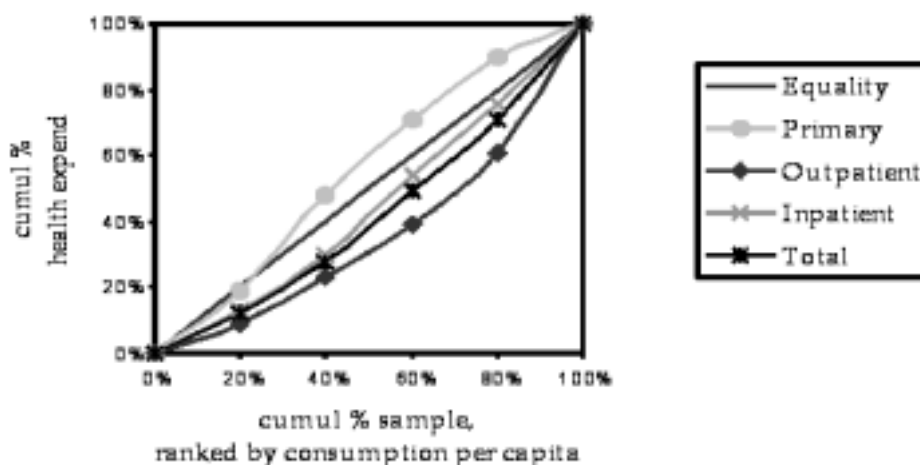
<i>Quintile</i>	<i>Primary</i>	<i>Outpatient</i>	<i>Inpatient</i>	<i>Total</i>	<i>Share</i>
1	5,678	46,844	105,045	157,567	12%
2	8,517	69,557	134,855	212,929	16%
3	7,098	78,074	198,733	283,905	21%
4	5,678	113,562	177,440	296,680	22%
5	2,839	195,894	193,055	391,789	29%
<i>Average</i>	<i>5,962</i>	<i>100,786</i>	<i>161,826</i>	<i>268,574</i>	<i>100%</i>
Share	2.2%	37.5%	60.3%	100.0%	

Source: Prescott (1997).

Concentration curves and indices

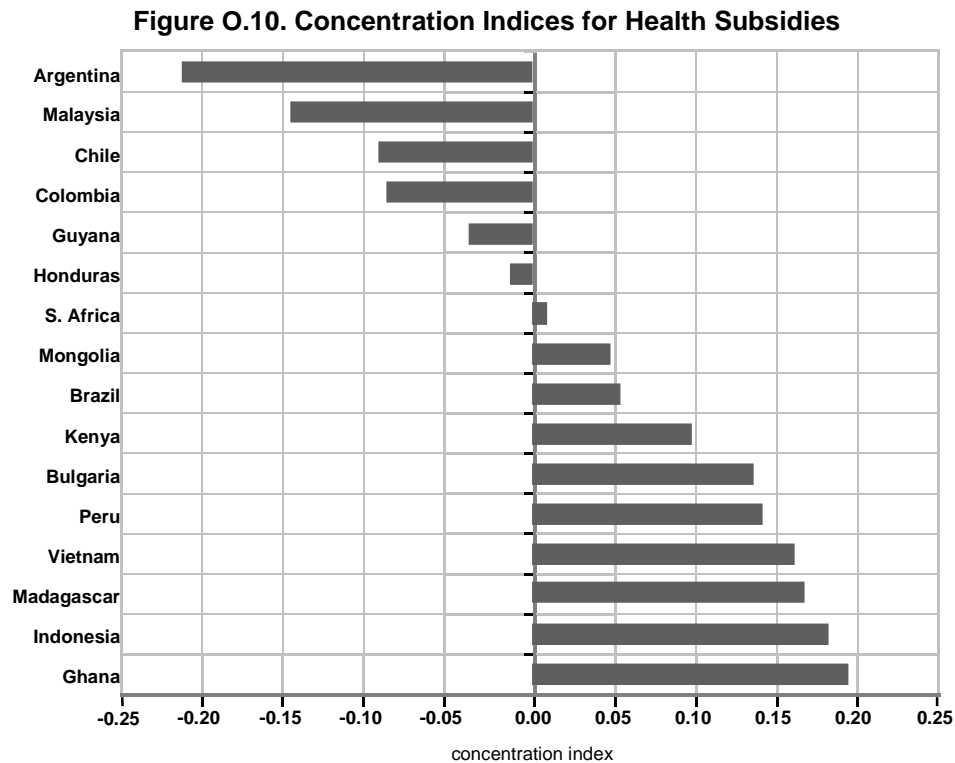
The results of a BIA can be plotted using concentration curves, as in figure O.9 (Van Doorslaer and Wagstaff 1992). These plot the cumulative percentage of the sample, ranked by income (horizontal axis) against the cumulative percentage of subsidy received (vertical axis). If subsidies are distributed equally across income groups, the concentration curve will coincide with the 45-degree line, or line of equality. In the case of primary care subsidies, the concentration curve starts out below the 45-degree line and then rises above it, reflecting the fact that the bottom quintile gets less than 20 percent of the subsidy but the second and third get more than 20 percent. All the other subsidy concentration curves lie below the 45-degree line, reflecting the pro-rich bias in utilization in Vietnam.

A natural measure of the degree to which the subsidy is biased toward or against the poor is the concentration index, defined as twice the area between the concentration curve and the 45-degree line.

Figure O.9. Concentration Curves for Subsidies in Vietnam

This is positive when the concentration curve is, on balance, below the 45-degree line and negative when it is above (Kakwani and others 1997). A negative concentration index thus indicates a pro-poor subsidy, and a positive index indicates a pro-rich subsidy.

Figure O.10 shows concentration indices for subsidies to the health sector for various countries. In most countries, subsidies benefit the better-off most. The exceptions are mostly Latin American countries, but the results for some of these countries are partial in the sense that they capture only part of the subsidy program (the Ministry of Health subsidies, but not the Social Security subsidies). Exceptions are Honduras and Peru, where all health subsidies are included. Honduras shows a mildly pro-poor pattern and Peru a pro-rich pattern.

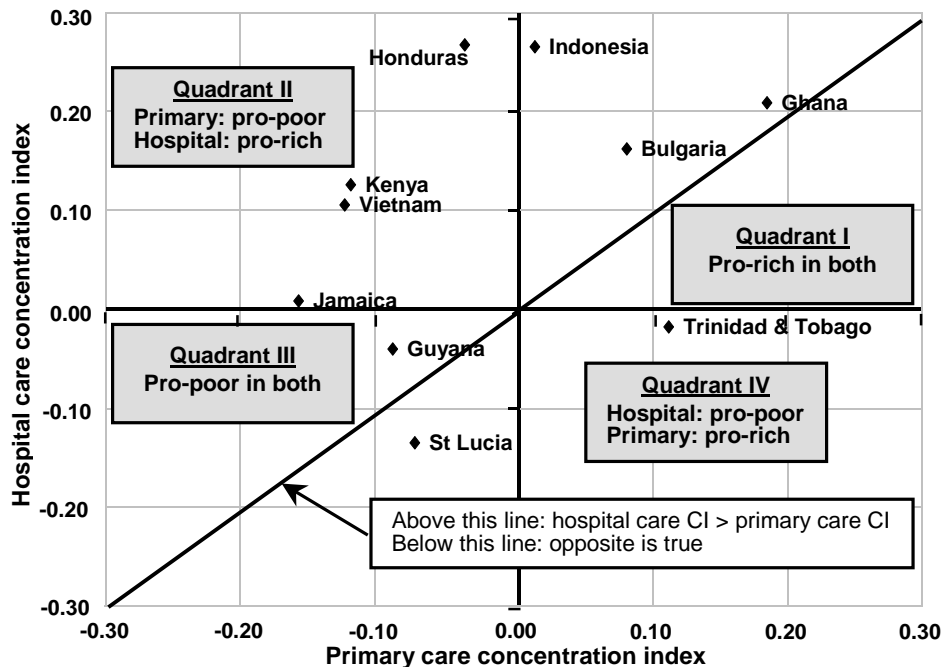


Source: Indices computed from results summarized in Filmer, Hammer, and Pritchett (1998).

Figure O.11 shows the different bias in hospital and primary care subsidies. In almost all countries, the pro-rich bias is less in the primary care sector than it is the hospital sector: indeed, in four countries, hospital subsidies are pro-rich and primary care subsidies pro-poor.

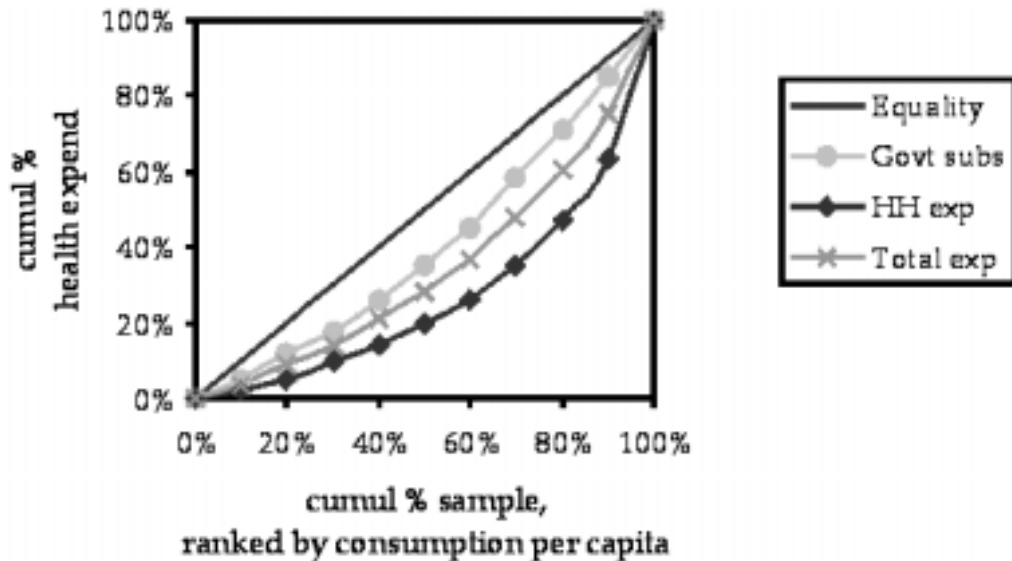
Figure O.12 compares the distribution of health sector subsidies with the distributions of income and private health spending in Indonesia. The distribution of private health spending is more unequal than the distribution of income, implying that the income elasticity of demand for (private) care in Indonesia is less than 1 (Lambert 1993). If, in the absence of a subsidy program, the income elasticity of demand for health care generally were also less than 1 the implication would be that health care is distributed less equally than health subsidies under the existing subsidy program. Subsidies may not be well targeted to the poor, but it is likely that health care is more equally distributed under an imperfect subsidy program than it would be without it.

Figure O.11. Concentration Indices for Health Subsidies



Source: Indices computed from results summarized in Filmer, Hammer, and Pritchett (1998).

Figure O.12. Concentration Curves for Health Subsidies, Indonesia



Source: Based on results in Van de Walle (1995).

Technical Note O.4 Behavior Change Communications, Households, and Service Providers

Households

At the heart of achieving better health, nutrition, and population outcomes are the actions of individuals and households. This is true for interactions between individuals and the providers of HNP services and

for daily actions such as feeding and caring for children, using contraception to achieved desired family size, maintaining a hygienic and safe environment in the residence, and managing physical activities. For public policy to have a sustainable effect in improving HNP outcomes, it is important to recognize the significance of household actions, to measure when and where these actions are not taken by families, to understand the reasons for the lack of appropriate action, and to devise strategies to address those reasons.

In many cases, the main reason for lack of action is lack of knowledge. For example, in the case of immunization of children in rural India, the lack of knowledge about immunization (both the importance of immunization and its availability) play a major role in poor families not seeking the service from providers. In such cases, public policy should recognize the importance of addressing the demand for the service, identify the population groups that are not acting, establish the type of knowledge needed, explore the best ways to convey this knowledge to the target populations, and ensure that such efforts are financed.

It is also important to note that household actions related to HNP outcomes are affected by various factors, such as household economic and social standing, urban/rural location, physical and social access, and maternal education. Promoting healthy behavior requires cross-sectoral collaboration between government departments and partners in development. The steps for implementing behavior change communication (BCC) interventions include:

1. Prepare a situation analysis to identify vulnerable population groups and knowledge gaps. Collect data, both quantitative and qualitative, from services coverage, household surveys, and focus group discussions with beneficiaries and other stakeholders to identify the knowledge levels, attitudes, and practices of the different population groups
2. Analyze data and consult with stakeholders to identify barriers to the use of health, population and nutrition services; understand reasons for poor health outcomes and establish why gaps in outcomes exist between different population groups.
3. Assess the reach and impact of the various media and of existing information, education, and communication (IEC) programs carried out by the government and its partners, such as NGOs. Multiple communication channels may be required to raise knowledge to appropriate levels, and the necessary intensity of the effort may vary for different population groups. The media alone will not be adequate for reaching some groups. It may be possible to utilize interpersonal communications more effectively. Explore the role of peers and other “influencers” in bringing about behavior change.
4. Build partnerships with NGOs, community groups, professional organizations, youth networks, and news and entertainment media.
5. Make health promotion and BCC an integral part of health programs. Ensure adequate budget allocations.
6. Develop cross-sectoral linkages with other key sectors, such as education and water and sanitation.

Service providers

The recent Voices of the Poor exercise conducted for the Year 2000 World Development Report confirmed that vulnerable groups are often excluded from health services and that they suffer from poor interaction with health providers. Studies also confirm that health providers can play a positive role in transmitting important information and motivating healthy behavior. BCC efforts should therefore also target health providers, with the goal of making health services accessible, responsive, and sensitive to the needs of clients. On the provider side, steps include:

1. Emphasize health education in national health policy, programs, and services, and ensure adequate budget allocation.
2. Build the political will and advocacy for cross-sectoral health education in national plans and policies.
3. Identify the appropriate health messages and the opportunities for health services to communicate these messages and promote healthy behavior.
4. Include counseling and health education as an important component of health services.

5. Train health providers in interpersonal communication and use contacts with clients to promote healthy behavior. Sensitize health providers to gender issues and the needs of vulnerable groups.

HNP Benchmarking, Monitoring, and Evaluation

This section discusses the related areas of benchmarking, monitoring, and evaluation. Although the areas overlap, for the purposes of the PRSP they can be defined as follows:

- **Benchmarking** involves comparisons among countries, or among regions or subgroups within a country, or over time with respect to key HNP outcome or system performance indicators, particularly in relation to the poor. These can be cross-sectional (level) or dynamic (rates of change). International benchmarking allows comparisons among similar countries; cross-sectional benchmarking identifies gaps within a country between rich and poor, among regions, or among ethnic groups. Comparing changes over time (dynamic) helps identify areas of progress and difficulty. Benchmarks can provide guidance for further analysis and priority interventions and can also help generate interest among political leaders for action.
- **Monitoring** involves the periodic assessment of key intermediate indicators that are causally linked to desired outcomes. The indicators must be measurable with some degree of reliability on at least an annual basis. Benchmarking can overlap with monitoring, and the terms are sometimes used interchangeably. Benchmarking should include key outcome indicators, however, which may not be monitorable on an annual basis.²
- **Evaluation** seeks to understand the factors behind the success or shortcomings of a given intervention or interventions. Although often taking place *ex post*, evaluation studies may be useful prior to an intervention; for example, to understand why vaccination rates for the poor remain low.

The process for developing background analysis (including benchmarking), monitoring indicators, and evaluation priorities should proceed in several steps. First, Bank staff, government, and partners should collect and analyze relevant qualitative and quantitative information, from international sources as well as from the country in question, to establish priorities and targets for improving HNP outcomes for the poor. Relevant quantitative information can be used to establish benchmarks. Second, the borrower's monitoring and evaluation capacity should be assessed, including the quality, timeliness, and use of data and evaluative information for decisionmaking. Third, the results of this assessment should guide both the indicators chosen and the approaches used for program monitoring. Fourth, government and partners should strengthen or establish appropriate systems to ensure that key monitoring indicators are collected and analyzed in time for annual reviews. Fifth, partners should establish a medium-term strategy to strengthen evaluation capacity (public and private) and the results orientation of health-oriented activities.

Collect and analyze baseline information and data

The first step is to collect, analyze, and present existing information regarding the health status of the poor and its determinants. Some data are likely to be already available from the World Bank and other international data sources, but additional work will be necessary to gather and analyze information at the country level. Possible activities include the following, by information type:

- **International data.** A starting place for benchmarking is international comparisons among similar countries (by region, GDP/CAP, or even health expenditure levels), beginning with the Development Assistance Committee (DAC) indicators that relate to HNP. Chapter 18, "Health, Nutrition, and Population" describes some of the information that is available centrally at the Bank. These include HNP poverty data sheets that have been compiled for more than 40 countries, and HNP statistics.³ The poverty data sheets allow comparisons among the rich and poor within countries, and between similar countries.
- **National household surveys** such as demographic and health surveys (DHSs), living standard measurement surveys (LSMSs), and national censuses are conducted every several years in many developing countries. These can be used to: (1) provide a breakdown of key health, nutrition, and population outcome indicators according to income quintiles;⁴ (2) provide time-trend comparisons for key indicators;⁵ and (3) perform demographic or econometric analysis regarding the determinants of key outcome indicators.⁶

- 3) *Other household surveys and analyses* in particular regions, or on specific issues, may have been carried out by government, donors, or other researchers. These may or may not be formally published, and might be collected and reviewed during a mission by local staff or partners. Those that might provide insight into the health-seeking behavior of the poor, the impact of cost-recovery and other expenses, and other health, nutrition, and fertility practices could be particularly useful.
- 3) *Health information systems (HISs)* collect routine data on facility attendance, as well as various other indicators such as immunizations, deliveries, and specific diseases. These data are rarely complete at the national level, and vary considerably in quality among countries. Even if incomplete, however, they may be able to provide some indication of trends. Facility data are unlikely to provide information on the disease burden or facility use by income, but can provide trends in facility use and possibly in the treatment of major diseases that affect the poor. If central data are unreliable, health service data can be directly collected at the district or facility level, but this is time consuming. The main problem with HIS data is that they provide no information on who is not coming for health services and why. This requires household surveys or qualitative assessments.
- 3) *Financial information.* If national health accounts have already been prepared, these should prove useful. Public expenditure reviews by the Bank may also provide good background data, but may need to be updated. A comprehensive picture of health spending, including benefit incidence analysis, requires household expenditure data, but analysis of government budgets can provide important additional insight.
- 3) *Situation analysis surveys* of health or population facilities and reviews of specific health programs (often donor-sponsored), can be an important source of information on service quality, and may also incorporate client and provider interview. Situation analyses have typically been conducted for family planning services, but may be available for other services. These generally do not give poor/nonpoor breakdowns.
- 3) *Research studies* into specific diseases that affect the poor and operational studies regarding the effectiveness of key services are sometimes available, either published or unpublished. In some countries, researchers or NGOs also have done studies on the effect of cost recovery on the poor (these are of variable quality).
- 3) *Beneficiary assessments*, ethnographic studies, and other qualitative assessments are increasingly carried out by the Bank or its partners, including donors, NGOs, academic institutions, and government ministries. Many of these assessments focus on health and the poor.
- 3) *Other sources of information* include nutrition or food security monitoring systems; for example, the famine early warning system in southern Africa.

Assess the borrower's HNP monitoring and evaluation capacity

A review of the borrower's monitoring and evaluation need not be exhaustive, but it is important.⁷ Often donors—including the Bank—will select indicators without first assessing whether and how data will be collected, their reliability, and whether or not the information will influence real decisions (including budgets). Several types of data collection systems are relevant. Quantitative systems include national household surveys (usually several years apart), vital registration systems (often weak in low-income countries), health information systems, and nutrition or food security monitoring. The information from these systems is often produced after significant delays, and often comprises large quantities of data presented with little analysis. If facilities and districts merely collect the information for headquarters—because, for example, they do not have the training or discretion to use the information to target and prioritize local programs—it is unlikely to be reliable and is less likely to be used. Qualitative or beneficiary assessments can be carried out by universities, NGOs, consulting firms or market research organizations, and sometimes government units. The skill and experience of these organizations is likely to vary, as is the range of qualitative techniques used; for example, universities often provide more training in questionnaire surveys than in focus groups or participatory role appraisal. The capacity assessment should examine the quality and use of information at various levels of the system, and should identify key constraints, including incentives, that influence capacity. This assessment should inform the choice of indicators, as well as the design of the monitoring and evaluation framework, including the relative roles of routine information systems and external qualitative or quantitative evaluations. Financial monitoring systems, including budgeting systems and internal and external audits, are also important and should be reviewed by an appropriate specialist.

Select monitoring indicators

Choosing monitoring indicators can be a contentious process. The indicators must be relatively few in number, reliably measurable, and must focus on issues that significantly affect the poor but are also amenable to public action. Various stakeholders, including donors, are likely to push for indicators that address their specific needs. The choice of monitoring indicators should be based on the analysis of which factors are most likely to bring about improvements in HNP outcomes for the poor—but should also take into account measurability, availability, and the likelihood that the indicators will influence decisions. Monitoring indicators need to be carefully thought through, since they will need to be assessed on an annual basis and will likely be the basis for which PRSP implementation is judged. The Bank and donors will need to strike a balance between information or indicators that they wish to have for accountability purposes and information that is most relevant and useful to those implementing programs—yet if local officials do not consider the information relevant or realistic, the data may not be collected.⁸ Once indicators are agreed upon, the government and its partners need to decide how the data will be collected and analyzed—for example, through routine HIS and monitoring systems or through rapid appraisal techniques, which may be both quantitative and qualitative—and who will be responsible for analysis and interpretation. Finally, it should be emphasized that the indicators used for the PRSP will only be a subset of those that are likely to be collected and used by health officials at different levels of the system. Although the PRSP process could help strengthen and focus existing systems, it should also try to be compatible with and not exclusive of local systems.

Developing an evaluative framework

Monitoring indicators can only indicate whether progress toward a specific objective is being achieved or not. They are not intended to provide a full diagnosis. It is therefore important to also develop an evaluation strategy. The two main objectives of such a strategy should be (1) to assess the extent to which the selected interventions are having an impact on the poor and (2) to better understand the factors influencing HNP outcomes for the poor and how these can be addressed more cost-effectively. Because of data limitations, the initial analysis will inevitably yield several key areas where knowledge and understanding are weak; the most important of these could be made priorities for specific evaluative activities. Key questions to address are what issues to examine, which methodologies to use (for example, qualitative or quantitative), and who should carry out the evaluation (government or nongovernment; local and/or international). The assessment of evaluation capacity should also provide insights into the approach used; for example, pilot interventions, process evaluations, or focus group assessment.

Establishing a plan for evaluation capacity development

Several of the studies by the World Bank's Operations Evaluation Department (OED) and others have found that the Bank and other donors have not invested sufficient time and attention into building evaluation capacity in borrower countries. The goal of evaluation is not just to help strengthen information systems, but to strengthen the links between monitoring and evaluation (M&E) and policy and program decisions. A key weakness in many countries is the lack of incentives for using information, because budgets are determined on an input basis. The PRSP process could therefore be an important instrument to increase the attention given to and the incentives for the collection and use of HNP information, as well as to strengthen results orientation in general. Building capacity and shifting public sector incentives is likely to be a medium-to-long-term process, but it needs to be initiated early if it is to bear fruit. Although training and equipment may be needed to some extent, learning-by-doing is crucial.

Lessons from World Bank experience: OED evaluation of HNP sector work

The OED recently completed a major evaluation of the World Bank's work in the HNP sector. Although the findings focus on the Bank, many are relevant for borrower governments (which implement Bank-financed projects) and for other donor partners. The major findings are summarized below, together with further discussion of three key areas: HNP outcomes for the poor, institutional assessment, and monitoring and evaluation.

Main findings

Several broad concerns emerge from the OED study regarding the Bank's performance to date, many of which are relevant to the PRSP process. First, the Bank has been more successful in expanding health

service delivery systems than in improving service quality and efficiency or promoting institutional change. Although the quality of institutional analysis has improved in recent years, the Bank is often better at specifying what practices need to change than how to change them or why change is difficult. Paradoxically, Bank project designs are usually most complex, with the greatest number of components and organizational units, in countries that have weak institutional capacity. The Bank is adopting increasingly sophisticated approaches to promoting sector reform as the institutional problems addressed become increasingly difficult. Yet experience shows that realistic objectives, together with increased attention to whys and hows, increases the likelihood of achieving institutional objectives.

Second, during project implementation the Bank typically focuses on providing inputs rather than on clearly defining and monitoring progress toward HNP development objectives. Because of weak incentives and undeveloped systems for M&E within both the Bank and borrower governments, there is little evidence regarding the impact of Bank investments on system performance or health outcomes. The Bank therefore has not used its lending portfolio to systematically collect evidence on what works, what does not, and why. Methodological challenges can make it difficult to conclusively link project interventions with changes in HNP outcomes or system performance. But experience shows that effective M&E design—including the selection of a limited number of appropriate indicators and attention to responsibilities and capacity for data collection and analysis—enhances the focus on results and increases the likelihood of achieving development impact.

Third, with some notable exceptions the Bank has not placed sufficient emphasis on addressing the determinants of health that lie outside the medical care system, including behavioral change and cross-sectoral interventions. The incentives and mechanisms for intersectoral approaches are weak both within the Bank and in borrower governments, so priorities for intersectoral work must be carefully chosen. The Bank has a fundamental responsibility to more effectively link its macroeconomic dialogue with sector dialogue, particularly on issues of health financing, health workforce, and civil service reform.

Finally, improving health system performance and HNP outcomes for the poor requires strategic, flexible approaches to support the development of the intellectual consensus and broad-based coalitions necessary for change—development that requires an emphasis on learning and knowledge transfer. System reform is difficult and time-consuming, and stakeholders outside ministries of health can determine whether reforms succeed or fail. This highlights the importance of realism in project objectives, of strong country presence, stakeholder analysis, and a more strategic use of the Bank’s convening role. While incremental approaches are not always more appropriate, the Bank may have been excessive in its encouragement of “big bang” reforms.

Linking inputs to HNP outcomes for the poor

Although usually focusing on poor regions or diseases that most affect the poor, the Bank has been weak in analyzing the factors leading to ill health and selecting interventions that are likely to achieve the maximum impact on the overall disease burden for the poor. Project design documents typically describe the disease burden, list project activities, and then assert that significant improvements in health outcomes will result. Design documents, however, seldom present a coherent analysis of how project interventions will translate into improved health outcomes for the poor. Consequently, the Bank is usually overoptimistic in its projections of health impact and, more important, often does not consider whether alternative approaches would yield a greater impact on the disease burden for the poor. OED’s examination of four country studies and its portfolio review showed that Bank investments and policy advice tend to focus on the medical care system, but greater aggregate health improvements may be achieved through health education and behavior change initiatives or intersectoral interventions, such as water and sanitation. Intersectoral interventions can be difficult to implement, however, and therefore must be chosen carefully and allocated adequate time for supervision. It should also be noted that prevention is not always more cost-effective than curative approaches, as demonstrated by the Amazon Basin Malaria Control project.

Institutional analysis

The Bank and its partners confront a number of inherently difficult institutional challenges in the HNP sector, many of which have not been adequately resolved in developed countries. In addition, ministries of health are often administratively weak, particularly in areas such as financial management. Yet these difficulties alone do not explain the Bank’s disappointing performance in institutional development. Other factors are also at work:

Box O.1. Lessons from Successful Institutional Development

Of the 73 HNP projects completed between FY 1991 and FY 1998, only 13 were rated by OED as having substantially achieved their institutional objectives. These projects shared several characteristics:

- 3 *Consistent commitment to achieving institutional objectives*, including the promotion of consensus among stakeholders regarding priorities and approaches and, where necessary, developing strategies to anticipate and soften resistance.
- 3 *Project designs based on a solid analysis of the underlying constraints to improved performance*, through some combination of sector work, evaluation of previous experience, and dialogue with key stakeholders. Designers developed realistic strategies to address these constraints, including attention to the proper sequencing of interventions.
- 3 *Flexible project implementation*, with regular reviews of progress toward institutional objectives and proactive attention to problems by Bank staff and borrowers. About half of the projects that substantially achieved their institutional goals were significantly modified during implementation.
- 3 *A governance and macroeconomic context that was supportive of institutional and organizational development*. If not, the above factors were particularly important.

- 3 *The Bank often does not adequately assess borrower capacity to implement planned project activities*. This was the factor most commonly cited in Implementation Completion Reports (ICRs) as contributing to poor project performance, including 69 percent of projects rated unsatisfactory.
- 3 *In seeking to promote institutional change and build borrower capacity, the Bank often does not adequately analyze the constraints underlying current performance*. Although institutional analysis has improved since the mid-1990s, it remains weak, particularly in relation to the much more daunting systemic reforms the Bank is now promoting.
- 3 *Weak analysis contributes to a lack of clarity in the articulation of institutional development objectives*, including whether or not the instruments chosen are the best ones to bring about change. Bank projects have traditionally addressed capacity constraints through the provision of training and additional resources, although a growing number of projects, particularly in the Latin America and Caribbean and Eastern Europe and Central Asia regions, are focusing on improving incentives or regulations.
- 3 *The absence, until recently, of appropriate indicators for institutional goals* has contributed to the tendency to assert that “capacity was built” because training or technical assistance were provided. The focus on the ultimate objectives has been inadequate

Although some institutional issues require sophisticated analysis, the criteria used by OED merely asked whether project designers appeared to have thought through the relevant institutional issues. This suggests that institutional development performance in HNP could be improved through an increased commitment to achieving institutional goals, developing standards and tools for institutional analysis, and training staff and partners in their use.

Monitoring and evaluation of HNP outcomes

Most HNP project designs identify key performance indicators, and intentions for M&E have improved in recent years. The vast majority of project completion reports state that the data required were not collected or analyzed, however—at least, not in a manner that enabled assessment of impact. The gap between M&E intentions and implementation is a particular problem for HNP. Project designs often give primary responsibility for implementing M&E to the borrower but do not adequately consider how data will be collected or analyzed, the incentives and capacity of borrowers to do so, or the appropriate balance between the use of internal monitoring systems and external evaluations, including rapid assessment evaluations. A number of projects have sought to improve borrower capacity, some successfully, but the Bank has tended to place excessive emphasis on providing equipment and training and has tended to underestimate the time required to agree upon indicators among various bureaucratic stakeholders, to clarify roles and responsibilities for data collection and analysis, and to strengthen incentives for using evaluative information and decisionmaking. The challenges of M&E are more difficult for system reform than for targeted interventions, but lessons from HNP projects with successful M&E are broadly applicable.

Political and stakeholder analysis

The political implications of a policy, including the support or opposition of key stakeholder groups, often influence whether or not it is adopted. Health sector reforms can be particularly difficult because of the wide variety of stakeholder organizations and interests, and because health care is often seen quite literally as a matter of life and death. While improving health outcomes for the poor may appear to be noncontroversial, any decisions regarding the allocation—and particularly the reallocation—of health resources inevitably induce support from some groups and provoke opposition from others. Merely making pro-poor policy changes a condition or target in a PRSP program does not guarantee that they will be adopted or effectively implemented. Getting pro-poor health policies adopted therefore requires developing a coalition among stakeholders, both domestic and international, that is sufficient to implement and sustain change. This in turn depends on the skill and commitment of supporters, the nature of the proposed changes, and the overall country context.

Ideally, stakeholder analysis should inform the design of policies, not wait until implementation. When designing or preparing to implement a new policy, policymakers and PRSP authors should consider four factors:

- **Players.** These are the individuals and groups who are affected in the policy change process and who might become involved in influencing its outcome. Possible players may include government ministries (health, finance, agriculture, education, and local government); professional groups (doctors, nurses, and so forth); business organizations; religious organizations; various users of health services (urban and rural, poor and middle-class); and international organizations (IMF, World Bank, WHO, donors). Each of these groups, in turn, may have competing interests within them.
- **Power.** The relative power of each stakeholder group. Poor people are often poorly organized and politically weak, particularly in rural areas, while doctors are usually more influential (although they are not always well organized). The way power and influence is exercised varies depending on the political system and traditions of the country.
- **Position.** The position taken by each stakeholder group, including whether they support or oppose the policy and the intensity of their commitment. Note that if multiple reforms are involved, a given group may support some policies and oppose others. This can serve as a basis for negotiation.
- **Perception.** The public perception and definition of the problem and the proposed policy can affect which groups become mobilized and their positions on the policy. For the PRSP in particular, the extent to which proposed changes are perceived to have been imposed from the outside (for example, by the World Bank or donors), rather than being home-grown and therefore appealing to shared national values, may influence the ultimate outcome.

Experienced policymakers and political leaders consider these factors almost instinctively, but public health specialists and economists sometimes focus excessively on the technical aspects. By considering the “four Ps” above for each proposed policy change and the entire proposed package, policymakers and PRSP authors can refine their proposals and develop a stakeholder strategy to increase the likelihood of successful implementation. The most common and avoidable mistake is simply not consulting adequately with key stakeholders. Additional stakeholder strategies are likely to include mobilizing supporters of the policies, conducting public information campaigns, identifying influential “champions,” or negotiating with opponents. Formal toolkits for stakeholder analysis in the health sector are available for those wishing to do more in-depth analysis.¹⁰ Whatever approach used, successful implementation depends on the political skill of advocates, not just political will.

Technical Note O.5 Eight Steps of Coverage for Interventions Addressing the Needs of the Poor

This technical note looks at whether essential health services actually reach and benefit the poor in a given country. The performance of the health services, whether privately or publicly financed, can be assessed by examining some key dimensions underpinning that performance and analyzing the key determinants of coverage for the poor. This analysis is particularly relevant for the country’s core package of key health interventions that are considered to address the burden of diseases of the poor.¹¹ Is the provision of such a package really successfully in place for the poor to access and use it? Eight key determinants of performance are discussed below: physical accessibility, availability of human resources, availability of essential material inputs, service quality, social accountability, utilization of services by the poor, continuity and timing of interventions, and technical quality.¹²

These determinants can be organized into a simple hierarchical model for assessing the coverage for the poor. In figure O.13, the first four stages (Accessibility, Availability of Human Resources, Availability of Material Inputs, Service Quality and Social Accountability) correspond to “potential” coverage and the latter three stages (Relevance of Services Produced, Continuity, and Technical Quality) represent actual coverage. Possible indicators for each of these determinants are discussed below. To the extent possible, assessment for each of these factors should include public, NGO, and private services and facilities, in order to obtain a complete overview of the health services delivery scope.

Physical accessibility

One of the first issue for many countries is the capacity of the health sector to ensure physical access to essential health interventions and services for the poor, including community-driven health and nutrition activities.

Access remains a key issue in most low-income countries, and rural communities are most often underserved. Distance has been found in many studies to influence the use of services more than other factors including price as in Cote D’Ivoire. The work leading up to the PRSP in Burkina Faso, for example, cited survey evidence that 40 percent of health center users had to walk more than one hour to reach the center, while the work underpinning the Mozambique PRSP cited survey evidence that 38 percent of people who had been sick but had not sought care had not done so because their local facility was too far away.

There are several approaches to measuring accessibility. The first is to measure the service supply relative to the population served—for example, the number of service delivery points, whether clinics, health unit centers or posts, or hospitals (or hospital beds) per 1,000 population, or the number of facilities offering a particular intervention or package of interventions per 1,000 population. A limitation of this approach is that it does not account for the distribution of services with respect to the poor.¹³ The data are more useful if they are broken down by region or district, to compare rural and urban or poor and less-poor districts. The second approach is to measure proportion of the population living within a given distance of a particular type of health facility (for example, 8 km or 12 km) or interventions, preferable broken down income level or by poorer regions. In the third approach (related to the second),

Figure O.13. Eight Steps to Effective Coverage for the Poor

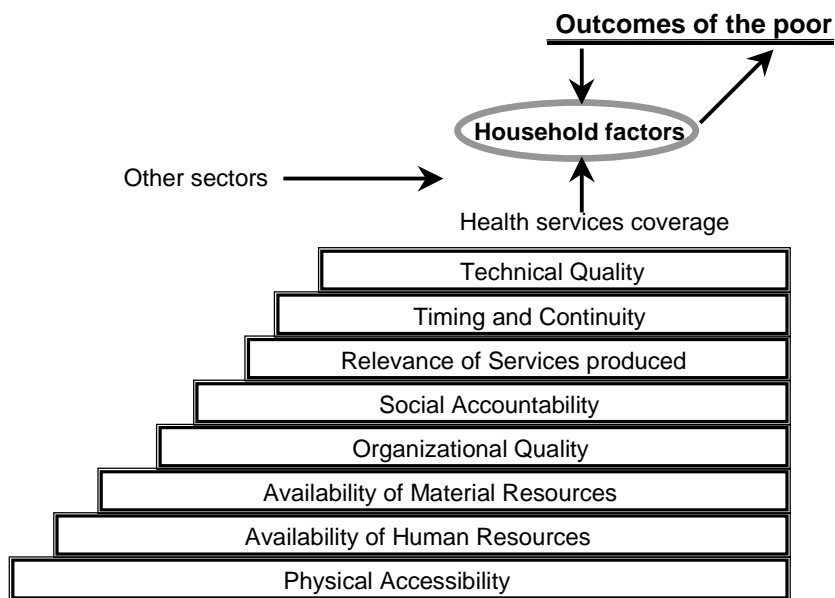


Table O.6. Determinants of Coverage with a Core Package of Activities

Stages	Example of Indicator for EPI	Example of Inputs
Accessibility	Proportion of mothers of children 12–24 months who live less than 1 hour from a fixed health center with weekly immunization or less than 30 min from a monthly outreach point.	Health facilities and providers (public, NGO, private). Outreach workers and mobile clinics. Transport (public and private). Roads and communications.
Availability of personnel	Proportion of mothers of children 12–24 months who live at less than an hour of a service delivery point where there is a qualified health technician providing immunization	Personnel (public, private, NGO).
Availability of consumables and other material resources	Proportion of mothers of children 12–24 months who have access to an immunization point with continuous availability of vaccines and syringes/needles.	Pharmaceuticals, supplies, , stocks of consumables (public and private sources). Equipment. Maintenance (for example, functioning cold chain).
Service quality	Proportion of mothers of children 12–24 months having access to an immunization point where other key services are integrated: growth monitoring, ORT distribution, Vitamin A supplementation.	Training, supervision, equipment, staff incentives.
Social accountability	Proportion of mothers of children 12–24 months having access to an immunization point where communities conduct semestral monitoring of immunization coverage and are involved in actively tracking defaulters.	Civil society representation. Involvement of users and communities in management, monitoring, and so forth.
Utilization (initial contact)	Proportion of children 12–24 months having received at least one shot of vaccine.	Outpatient and inpatient contacts. Facility deliveries. Management tools.
Continuity (quantitatively sufficient contact(s))	Proportion of children having received the full course of vaccines.	Adequacy of record-keeping, outreach, follow-up. Incentives to personnel; knowledge of clients.
Technical quality (quality contact)	Proportion of children having received the full course of vaccines with the appropriate technique.	Training, supervision, well-defined protocols. Availability of drugs and equipment.

one can measure the time required for a client to reach a facility or service delivery point. For example, a facility may be nearby, but inaccessible because of a river or other obstacle. Alternatively, if a clinic is near a road and accessible by public transport, the poor may reach it more quickly than one that is closer but accessible only on foot. Seasonality can also be important as it affects ease of transport during rainy seasons.

To be meaningful, accessibility indicators need to take into account the physical size of the area served and the size of the population in the area. Accessibility may be a major constraint for the poor in some countries and regions, but relatively minor in others. In addition, the distribution of health facilities (public and nonpublic) may be inefficient in some areas; for example, inadequate coordination can result in government facilities located within a short distance of comparable NGO or other private facilities.

Data collection and analysis

- 3) A first step is to develop a map that shows the geographical distribution of essential services. The map should specify, if possible, the location of fixed facilities, outreach points, mobile clinics, and possibly outreach workers for public and nongovernmental services, as well as major roads and natural barriers such as rivers. This could be done manually or electronically using Geographic Information Systems (GIS).¹⁴ Many countries have developed or are in the process of developing a Health Facility Inventory and Planning map. The key step is to link the health maps with a poverty map, by linking accessibility data to household survey data. One can then see how poor and less poor areas fare in terms of the availability of health services in their geographic area.¹⁵

- 3 Information from household surveys can be used to calculate the percentage of poor with access to services, and to determine the extent to which low physical access is a major constraint for the poor. The Demographic and Health Survey (DHS) and Living Standard Measurement Study (LSMS), for example, include questions on household assets as well as availability of essential services in the community, so it is possible to compile tabulations for accessibility by income or asset levels. Because poverty is unevenly distributed, it is useful to assemble data on availability at the regional as well as national level. These quantitative methods could be complemented by beneficiary surveys or participatory assessment approaches in poor communities, to assess whether physical access is perceived by the poor as a major problem.

Availability of human resources

Availability of appropriate human resources is growingly becoming the single most important issue in health services performance in low income countries. Some regions of the world such as sub-Saharan Africa and other countries (India, for example) are experiencing a real human resource crisis including increasing brain drain and shortages of qualified staff. Finding and maintaining qualified health staff in rural and remote areas, which are often the poorest, is an increasing challenge; staff shortages often hampers the provision of health services to the poor. The authors of the *Voices of the Poor* report for Somaliland (World Bank 1999), for example, noted that “rural people said they rarely see health workers in their localities. If some people have been trained for the villages and other main grazing areas by international agencies, they are not now functional.” The common problems of lack or inappropriate use of trained staff can be explained by market failures, poor deployment practices, absence of financial incentives for health staff to work in poor remote areas, and or inadequate staff training. The national and the global health market offers possibility of remuneration for health staff that are well beyond the level of salaries of most low income countries. In Cambodia for example, a health worker salary is about US\$ 20 per month while a visit to a nurse in his private practice activity is one to two US dollars. Most public sector staff in urban richer areas supplement their salaries through private practice. A recent study conducted by the Antwerp Tropical institute showed the actual remuneration of health staff in urban settings to be around 5 times the public sector’s salary. This number could increase to 7 times for a surgeon.¹⁶

In addition, in the difficult area of human resources management, it is often the case that doctors or nurses are performing tasks that might fall more appropriately into the scopes of practice of nurses, auxiliary nurses, and community health workers. Many countries in francophone Africa train midwives; these practitioners, however, often consider themselves overqualified to work in rural areas and stay in the capital city. In Guinea, for example, more than 70 percent of the country’s midwives work in the capital city, where only 20 percent of the population lives.

Looking at the geographic distribution of health workers can show where there are serious deployment problems. It can point towards specific gaps in personnel. In addition, maps showing the distribution of qualified staff could be drawn and linked to poverty maps, to identify whether poorer or more remote areas lack essential human power to plan, manage, and deliver services.¹⁷

Data collection and analysis

Central health information systems may have data on availability, and distribution of personnel, although these data are often incomplete or unreliable.¹⁸ Conducting surveys of a sample of facilities or a group of health workers can provide more detailed and reliable information on the number of workers and the time spent delivering services. District or provincial officials could also be asked to compile tabulations of the availability of staff. In addition, qualitative surveys can be used to find out if lack of staff are seen by the poor to be major problems—and are particular useful to find out if staff absenteeism is an issue.

Availability of other essential inputs

Health services also need the capacity to ensure continuous availability of essential material inputs, particularly at the periphery. Medicines, vaccines, and small material such as syringes are essential to health service delivery. Equipment such as cold chains and basic transport are needed to conduct outreach activities. Health, nutrition, and population (HNP) facilities may be present and physically accessible in an area, yet essential consumables resources for the intervention may be lacking or frequently unavailable. In

the poorest countries, shortage of supplies is one of the most critical hurdles that health sectors have to face.¹⁹ The poor usually have to face two major problems: shortages of supplies and low quality/ counterfeit drugs. The common problem of essential drug shortages is often explained by inadequate pharmaceutical and supply logistics and management; in some countries, however, a predominance of supply side financing leads to rationing the limited resources supplied by government services.

On the other hand, the emergence of counterfeit drugs has grown from a basic situation of market failure, mainly due to an imbalance of knowledge (that is, the users/patients do not have adequate information) aggravated by the poor ability of governments to regulate and enforce regulation. Problems of governance are often compounding this situation.

Developing indicators of the availability of critical inputs by level of service can help assess the extent of the problem. In addition, maps showing the available distribution of drug and vaccines could be drawn and linked to poverty maps, to identify whether shortages are rampant in poorer or more remote areas.²⁰

Data collection and analysis

Central health information systems may have data on availability, and distribution of equipment, drugs, vehicles, and other inputs, although these data are often incomplete or unreliable.²¹ Conducting surveys of a sample of facilities can provide more detailed and reliable information on the availability of key inputs, and specific methodologies have been developed to do this—for example, essential drugs surveys. District or provincial officials could also be asked to compile tabulations of key inputs in their areas. Facility-level studies of the prevalence of “stock-outs” of essential drugs can provide clues about the extent of these problems. If drug shortages are identified as significant problems, the more difficult challenges to try to understand why these problems persist. Inadequate funding for inputs may be part of the problem, but is rarely the only reason.

To understand how these failures affect poor populations, again surveys can be useful to find out if absence of drugs or staff are seen by the poor to be major problems. Household survey evidence was cited, for example, in the work underpinning the Mozambique PRSP, showing that although a relatively small proportion of sick people not seeking care cited lack of drugs as the reason for their not seeking care, those who did were almost all rural residents. Surveys and inspections of health facilities are also useful. The work underlying the Burkina Faso PRSP, for example, reported that, when inspected, nearly 20 percent of facilities had run out of essential vaccines, and in 24 percent of centers the refrigerators for storing the vaccines did not function. The Mauritania PRSP reports drug shortages as the most important reason explaining the low level of use of services. Surveys can also provide useful information as to whether the poor use different sources from richer groups when they purchase drugs. In Africa (Benin) and India for example, the poor were more likely to buy drugs in the market and less likely to buy them from a formal pharmacy.

In addition, qualitative surveys can be used—and are particular useful to find out if staff absenteeism is a major problem. If drug shortages are identified as significant problems, the more difficult challenges to try to understand why these problems persist. Inadequate funding for inputs may be part of the problem, but is rarely the only reason.

Organizational quality and consumer responsiveness

Another key dimension of performance is the extent to which public, private, and/or NGO services are responsive to consumer concerns, and whether these services are delivered in a way that encourages appropriate utilization of relevant interventions. A number of factors influence the “user friendliness” of services, including the attitude of health staff, hours of operation, space, cleanliness and comfort of the waiting area and of the wards, waiting time, gender of the service provider, modes of payment, and efficiency of referral. These factors in turn strongly affect the perception of quality by consumers, and are important determinants of whether or not services are used—particularly since consumers are often not good judges of clinical quality. Organizational quality is likely to vary among public, private, and NGO providers; by geographic location (perhaps worse in poor areas); and possibly by the type and level of service (clinics versus district hospitals; or antenatal care versus sexually transmitted infection [STI] treatment). It can be measured objectively (for example, average waiting times, time spent with providers), or qualitatively, by asking the poor how they perceive the quality of different types of services.

Data collection and analysis

Measuring organizational quality mostly relies on a mix of qualitative and quantitative tools—this type of information is rarely available through routine health information systems.

- 3 Qualitative surveys, focus groups, or exit interviews with the poor can be illuminating. Discussions should be conducted separately with men and women, and possibly adolescents and adults, since their concerns may differ. In many countries, for example, women report being treated rudely or even abusively during delivery at government clinics; or women or adolescents avoid seeking care for STIs at public providers because of privacy concerns. Exit interviews provide useful information on provider/client interactions, but does not reach those not using services—community-based approaches are therefore also useful.
- 3 On-site assessment of various aspects of service organization can be compared to the problems identified by the users. In this case, the challenge is to compare consumer perceptions with service-based “objective” measurements (average waiting times, observations of provider behavior, cleanliness of facilities). Information collected could be used to build scales and indexes of quality, to allow comparisons of different types of services.

The family planning field in particular has developed Situation Analysis methodologies, which combine various methodologies to collect information from a sample of facilities and communities on the availability of inputs, provider behavior, process quality indicators, and perception of community members.²² The Situation Analysis approach can be adapted for other services.

Social accountability

The health system or particular health services are more likely to be responsive to the poor if the poor are able to exert influence or “voice” over health systems and providers. Health staff in government clinics are often unresponsive to the poor because they are not directly accountable to them. There are several potential avenues for participation and “voice” by the poor. The first avenue is the direct management of local clinical services, through community health centers or revolving drug funds, as experienced in the Bamako Initiative supported by WHO and UNICEF and adopted by many countries in Africa and Asia. IN a second avenue, the poor could be engaged in monitoring the performance of facilities or providers, either through representation on a district or facility board or committee; through an effective grievance system; or through intermediaries, such local political leaders, religious organizations, or NGOs. Some countries have also developed and publicized a “Patients’ Bill of Rights” to strengthen consumers’ ability to demand quality care. A third avenue would involve mobilizing communities for health promotion activities, whether malaria prevention or improved water supply. Even when formal mechanisms for participation exist, however, health providers often still dominate by virtue of greater education and expertise, and women or certain ethnic groups may be excluded from decision making.

Data collection and analysis

The first step is to assess the extent to which mechanisms exist for the poor to exert influence on services overall and for specific interventions. The next is to determine whether those mechanisms actually influence the quality of services provided to the poor. One approach is to assess the extent of participation by level and type of service according to the following categories: information sharing; consultation; collaboration and shared decision making.²³ In the case of private services, the poor exert influence through their roles as consumers, although the effect of that influence may vary. Assessment of voice and participation in health services could be incorporated into an overall participatory assessment for the PRSP (see the chapter 7, “Participation”). Information would need to be collected through visits to a sample of communities and facilities, possibly by an NGO in collaboration with communities. Relevant questions might include: What percentage of health facilities have some sort of community committee or board associated with them? Do these meet regularly? Are they perceived as representative of the community and of the poor in particular, or are they dominated by local elites? Is there any measurable difference between the consumer-responsiveness of services between services for which the poor have some representation compared to those where they do not? What factors explain the differences? Are local political leaders responsive to the poor, and is the quality of health services an issue of concern for local leaders? If the poor have relatively little influence, are there existing traditional or modern institutional structures that could be built upon to improve their voice?

Relevance of production and utilization of health interventions

The next dimension has to do with whether the sector provides services to the poor and whether those services are relevant to the diseases that affect the population, especially the poor. Utilization is an important, but rarely addressed, issue in the efficiency of government services, which is often addressed solely on the input side. Are there any patients? If a doctor or nurse is seeing 4–5 patients a day, or if a hospital is at 30 percent bed occupancy, the government is literally throwing away a share of its health budget. Also, although a core package of interventions may be defined, these interventions may not be the ones that are provided in practice. Various types of incentives may lead health providers to favor the provision of curative services rather than critical preventive ones for examples. Market forces may also push service providers to produce high cost–high technology services rather than low-cost, effective services. It is therefore critical to examine the case mix of services units and assess whether priority is really given to the most relevant in terms of serving the objective and perceived needs of the poor

What percentage of the population, and of the poor in particular, make use of a particular essential health service in a given year? For the purposes of this section, “utilization” is defined as the first use of a service by a consumer in a given year (“continuity” or subsequent contacts are discussed below). Utilization is therefore a key indicator of the extent to which the poor expresses some level of demand for services and come to contact with the health system—public, private, and NGO.

Data collection and analysis

Utilization can be measured either in terms of the total volume of services provided, or as the percentage of a given target population using the intervention (for example, the percentage of children receiving a measles vaccination; or the percentage of women with at least one antenatal care visit).

- Health information systems usually collect data on the use of services, including outpatient visits; in patients; vaccination; antenatal care; and so forth. These data are usually under reported, however, so usually cannot be used to calculate population-based utilization. But they can still provide useful trend analysis if compiled in a time series, or if making comparisons among regions or facilities.
- Household surveys can provide better information on the percentage of a target population making use of a particular service (for example, percentage facility deliveries, percentage of adults with an STI seeking care), as well as whether a public or nongovernmental service was used, and possibly reasons for nonuse of services.
- The quantity of services produced in a specific area could be linked through a poverty map to the income level of the population of the area. Such a mapping of equity of output production is currently conducted routinely in Mozambique.²⁴

Examining trends and patterns of utilization, particularly with respect to the poor, can help identify constraints to system functioning. Reasons for nonuse of interventions services cannot be assessed only from the services side alone, however. Yet when utilization is low despite good access and availability of services, analysts will need to explore survey data regarding the reasons why interventions are not used. This is likely to include aspects such as price, perceived quality, cultural acceptability, or household factors such as education.

Timing and continuity

Timing and continuity examines whether consumers receive the necessary number of contacts for services that require repeated interventions, and whether time-sensitive services are delivered in a timely manner. Some health interventions must be repeated at regular intervals in order to be effective (such as ANC visits or BCG vaccinations), requiring specific approaches to ensure follow-up. For others, the timing is critical, such as for emergency obstetric care. Too often are interventions provided partially, at the wrong time, or too late. Yet service continuity is a significant organizational challenge and an important indicator of system effectiveness, because it requires the ability to track and follow up with consumers.

Data collection and analysis

Much of the analysis is similar as above, but focusing on interventions that require repeated contacts. Continuity can be assessed by looking at drop-out rates and other indicators of follow-up, preferably using a combination of facility data and household surveys. Key interventions/indicators include BCG coverage or children with a full course of immunization; the number and timing of antenatal visits

(percentage beginning in the first trimester, and percentage with more than three visits); and compliance with tuberculosis treatment.

Technical quality

What is the likelihood that the service, if used, will lead to improved health outcomes? The capacity of the sector to provide the appropriate combination of technology and empathy at a given level of utilization is key to ensure that interventions are translated into effective outcomes.^{25,26} Technical quality depends on effective provider training and supervision; the existence of appropriate treatment protocols; adequacy of critical inputs; as well as factors such as provider workload. Technical quality may be poor even when consumers express satisfaction with the services—this can be a particular problem in a poorly regulated private sector. If a substantial portion of the poor go to the private sector for priority interventions, it would be useful to assess the technical quality of private as well as public services.

Data collection and analysis

Assessing the capacity of the sector to produce outputs of good technical quality usually requires direct observation of provider behavior in order to compare existing practices against standard protocols. In addition, there are a number of indicators that are particularly sensitive to technical quality. These include perinatal mortality rates, malaria case fatality rates, TB cure rates, and maternal mortality. Follow-up studies of maternal or perinatal deaths can help shed light on whether shortcomings in clinical quality contributed. More sophisticated instruments for assessing quality via facility surveys are available for some HNP outcomes. WHO's Topical List of Priority Indicators for IMCI at Health-Facility Level provides a useful instrument for assessing quality in the management of childhood illness. Surveys undertaken using this instrument suggest some huge variations in quality across countries. These data could be linked to a poverty map or to a household survey to get a sense of how the poor fare in the country compared to the better-off.

Notes

1. The *Public Health at a Glance* fact sheets aim to provide quick, easy access to *the state of the art* in basic preventive and curative services. These are intended as introductions to the issues and the key interventions that evidence has shown to be effective in improving health. They may be useful in making investment decisions designed to improve health and nutrition.

The fact sheets include:

- Key facts on each topic
- Evidence-based interventions
- Indicators for monitoring and evaluation
- Implementation lessons learned
- Selected sources for more information
- The web versions include, in addition:
 - Links to useful sources for more detailed information
 - Sample Terms of Reference
 - Project Appraisal Documents

The fact sheets include ten topics covering some of the “best buys” for improving health during the critical stages of the lifecycle: pregnancy and birth; childhood; the school age years; adolescence and adulthood. These *basic public health services* include:

- *Nutrition* which is a key determinant throughout the life-cycle;
- Malaria, TB and HIV/AIDS prevention and control interventions which can reduce morbidity and premature mortality throughout the lifecycle;
- Reproductive health which covers men and women of reproductive age, and care at birth;
- IMCI and immunization - key health and nutrition interventions during childhood;
- School health which targets the school age group;
- Mental health which is of increasing importance throughout the lifecycle; and,

- ⇒ Tobacco - a major risk factor requiring preventive action at school age and beyond.
The documents can be accessed on the web at: <http://wbIn0018.worldbank.org/HDNet/HD.nsf/SectorPages/HNP?OpenDocument>.
2. For example, maternal mortality rates (MMR) and child mortality are usually not appropriate monitoring indicators, because they are difficult to measure reliably (particularly MMR) and usually change slowly.
 3. The poverty data sheets are based on large household surveys (DHS or LSMS), and provide breakdowns by income quintiles. HNP statistics are drawn from various sources, but much of the data are estimates or extrapolations and should be used with caution.
 4. This analysis for the DAC indicators has already been done for the Poverty Data Sheets. Depending on data availability and resources, further analysis could be done by qualified demographers or econometricians using a methodology developed by the World Bank/WHO. Selected additional indicators could be added depending on data availability and borrower interest.
 5. DHS and LSMS data are usually of good quality and reasonably comparable; census data vary considerably in quality. Regardless, because of data uncertainties and high standard errors associated with outcome indicators (such as mortality), time trend comparisons should be made with caution. If data seem anomalous, it may be worth checking with technical specialists (for example, Macro International for DHS) to make sure the issue is not with the survey itself.
 6. The determinants for fertility and child mortality have been thoroughly studied using DHS and other household data. Socioeconomic status and maternal education are almost always the most important, but findings regarding the influence of HNP services vary. Repeating such analytic work may not be necessary on a country-by-country basis.
 7. The Bank's Operations Evaluation Department (OED) has developed a methodology for evaluation capacity assessment that could be applied either to central or sectoral ministries (K. McKay, OED 1998).
 8. For example, district officials in Ghana resist having to collect information on the percentage of households with impregnated bednets since it is not part of their routine data collection. One approach to limiting the number of indicators is to have either technical specialists or key stakeholders assess a relevance score for each proposed indicator (see PHR, Knowles)..
 9. This framework is based on a paper by Michael Reich, "Political Analysis and Political Strategies," in the *Flagship Course on Health Reform* handbook, World Bank Institute.
 10. See Michael Reich and David Cooper. 1996. *PolicyMaker: Computer-Assisted Political Analysis, Software, and Manual*. Version 2.2. PoliMap, Brookline, MA.
 11. Whichever these interventions are determined to be by the country's health policy. Some of the key health services interventions that are considered to make a significant impact on the health status of the poor include health information, micronutrient supplementation, integrated management of child health, immunization, family planning, safe motherhood, malaria prevention and case management, TB case management, HIV prevention and basic care, community based nutrition promotion, tobacco control, and so forth
 12. These determinants are inspired by the work of Tanahashi (1978), Knippenberg (1986), Miller (1989), Soucat (1997) and Accorsi (1997). They have been used for the analysis of sectoral performance in countries such as Vietnam, Mongolia, Benin, Guinea, Senegal, Guinea Bissau, and so forth
 13. International standards (for example those developed by WHO) or local standards (for example, determined through local operational research) can be used—for example, doctors per thousand population. One problem, however, is that these standards are rarely developed in the context of a realistic budget envelope for the sector. Reaching prespecific-targets input targets should not substitute for careful diagnosis of the major constraints facing the sector and the most efficient way to achieve outcome goals.
 14. GIS systems can be very useful and allow the linking of a wide variety of information, but they require special equipment and trained staff to operate and sustain (retaining computer staff is a particular challenge). An increasingly number of health ministries are using GIS, however, and the actual GIS data entry and analysis could be done on contract with the private sector or an NGO.

15. Two useful compendia of health service indicators exist, both of which present possible measures of accessibility. These are USAID's (undated) Health and Family Planning Indicators: A Tool for Results Frameworks, and Knowles and others (1997) Measuring Results of Health Sector Reform for System Performance: A Handbook of Indicators.
16. Health Country Status Report Mauritania 2001
17. Improving the quality and availability of pharmaceuticals and health staffing is difficult, and often requires structural reforms.
18. Official statistics often provide information on the availability of drugs, medicines, growth monitoring and immunization programs, and so on. Aside from the fact that they are rather crude measures of quality, they also may paint a rosier picture of quality than is warranted. A facility survey in Côte d'Ivoire found a substantial divergence between drugs and medicines that were supposed to be available, according to government records, and those that were actually available, according to the facility survey. Despite the crudeness of the quality measure, the facility survey revealed some worrying gaps between poor rural areas and better-off urban areas in the proportions of facilities with immunization and growth monitoring programs.
19. A study conducted in Côte d'Ivoire (ICCF 1997) showed for example that cotrimoxazole and four other essential drugs were not available in the public health clinics more than half of the time.
20. Improving the quality and availability of pharmaceuticals and health staffing is difficult, and often requires structural reforms. Future versions of this toolkit will include technical notes on pharmaceuticals and human resources.
21. Official statistics often provide information on the availability of drugs, medicines, growth monitoring and immunization programs, and so on. Aside from the fact that they are rather crude measures of quality, they also may paint a rosier picture of quality than is warranted. A facility survey in Côte d'Ivoire found a substantial divergence between drugs and medicines that were supposed to be available, according to government records, and those that were actually available, according to the facility survey. Despite the crudeness of the quality measure, the facility survey revealed some worrying gaps between poor rural areas and better-off urban areas in the proportions of facilities with immunization and growth monitoring programs.
22. The Population Council or United Nations Family Planning Association have further information on these tools.
23. See the World Bank Participation Source Book (1996) for a detailed discussion of the participatory process.
24. In Mozambique an index is constructed using services based information on proportion of children immunized, proportion of women using antenatal services and number of inpatient and outpatient visits.
25. Striking examples of the impact of low quality of services are found in maternal health. Utilization of ANC is quite high throughout Africa, yet the relevance and quality/efficacy of services is so low that despite high demand, maternal outcomes improve very little. In the Gambia, a TBA program led to major increase in utilization of obstetric services, yet with no impact on outcomes, since women reaching hospital services died there for lack of blood, material and surgeon. In the same way for TB, we know that people seek health care when they have chronic cough and fever. Yet services often fail to recognize the diagnosis and to prescribe and follow-up on appropriate treatments. Information on quality is hard to come by.
26. In Burundi, only 3 percent of children with diarrhea were correctly assessed and only 13 percent correctly re-hydrated. In Vietnam, by contrast, the figures were 78 percent and 67 percent respectively. In Indonesia, only 2 percent of pneumonia cases were managed correctly and only 4 percent of caretakers were correctly advised. The figures for China were 73 percent and 75 percent respectively. *Source: WHO (1998).*

Annex P

Education: Technical Notes

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<i>Definition</i>	<i>Purpose</i>	<i>Calculation method</i>	<i>Data required</i>	<i>Data source</i>	<i>Types of disaggregation</i>	<i>Interpretation</i>	<i>Quality standards</i>	<i>Limitations</i>
The total number of students completing (or graduating from) the final year of primary education, regardless of age, expressed as a percentage of the population at the official (typical) primary graduation age.	This is a simple measure that monitors the percentage of all children who complete the primary education cycle (whatever its length in their country). The measure is used to track progress toward the goal of Education for All (EFA), which is to achieve universal primary completion by the year 2015.	Divide the number of students completing (or graduating from) the final year of primary education by the population at the official (typical) primary graduation age, and multiply the result by 100.	The total number of students completing (or graduating from) the final year of primary education and the number of children of primary graduation age.	School register, school survey, or census for data on primary graduates. Population by age normally can be obtained from the central statistical office in the country or from EdStats (the World Bank education statistical databases).	This indicator can be disaggregated by gender, by geographical location (region; urban/rural), and, where population and school enrollment data permit, by ethnicity.	A high primary completion rate indicates a high degree of coverage, whether pupils belong to the population of official/typical graduation age or not. Care should be taken when comparing cross-country results, since the duration of basic education ranges in different countries from four to nine years (see table P.1).	Data on population used in deriving this indicator should refer strictly to the official/typical primary graduation age.	There is a risk of overestimating the completion rate due to the inclusion of over-aged and under-aged pupils who may have entered the system early or late. This problem will in most cases cancel out over time, but may persist in the very few cases where there is a rapid change in the age structure of new admissions.

Table P.1. National Education Systems in PRSP Countries

Region	Country	Official starting age		Typical duration (years)		Official graduation age	
		primary	secondary	primary	secondary	primary	secondary
AFR	Angola	6	10	4	7	10	17
AFR	Benin	6	12	6	7	12	19
AFR	Burkina Faso	7	13	6	7	13	20
AFR	Burundi	7	13	6	7	13	20
AFR	Cameroon	6	12	6	7	12	19
AFR	Cape Verde	7	13	6	6	13	19
AFR	Central African Republic	6	12	6	7	12	19
AFR	Chad	6	12	6	7	12	19
AFR	Comoros	7	13	6	7	13	20
AFR	Congo, Dem. Rep. of	6	12	6	6	12	18
AFR	Congo, Rep. of	6	12	6	7	12	19
AFR	Côte d'Ivoire	6	12	6	7	12	19
AFR	Ethiopia	7	13	6	6	13	19
AFR	Gambia, The	7	13	6	6	13	19
AFR	Ghana	6	12	6	7	12	19
AFR	Guinea	7	13	6	7	13	20
AFR	Guinea-Bissau	7	13	6	5	13	18
AFR	Kenya	6	14	8	4	14	18
AFR	Lesotho	6	13	7	5	13	18
AFR	Liberia	7	13	6	6	13	19
AFR	Madagascar	6	11	5	7	11	18
AFR	Malawi	6	14	8	4	14	18
AFR	Mali	7	13	6	6	13	19
AFR	Mauritania	6	12	6	6	12	18
AFR	Mozambique	7	12	5	7	12	19
AFR	Niger	7	13	6	7	13	20
AFR	Nigeria	6	12	6	6	12	18
AFR	Rwanda	7	14	7	6	14	20
AFR	São Tomé and Príncipe	7	11	4	7	11	18
AFR	Senegal	7	13	6	7	13	20
AFR	Sierra Leone	5	12	7	7	12	19
AFR	Somalia	6	14	8	4	14	18
AFR	Sudan	6	14	8	3	14	17
AFR	Tanzania	7	14	7	6	14	20
AFR	Togo	6	12	6	7	12	19
AFR	Uganda	6	13	7	6	13	19
AFR	Zambia	7	14	7	5	14	19
Total AFR: 37 countries							
EAP	Cambodia	6	12	6	6	12	18
EAP	Indonesia	7	13	6	6	13	19
EAP	Lao People's Democratic Republic	6	11	5	6	11	17
EAP	Mongolia	8	12	4	6	12	18
EAP	Myanmar	5	10	5	6	10	16
EAP	Vietnam	6	11	5	7	11	18
Total EAP: 6 countries							

Table P.1. National Education Systems in PRSP Countries (continued)

Region	Country	Official starting age		Typical duration (years)		Official graduation age	
		primary	secondary	primary	secondary	primary	secondary
ECA	Albania	6	14	8	4	14	18
ECA	Armenia	7	11	4	6	11	17
ECA	Azerbaijan	6	10	4	7	10	17
ECA	Bosnia and Herzegovina	7	11	4	6	11	17
ECA	Georgia	6	10	4	7	10	17
ECA	Kyrgyz Republic	7	11	4	7	11	18
ECA	Macedonia, former Yugoslav Republic of	7	15	8	4	15	19
ECA	Moldova	7	11	4	7	11	18
ECA	Tajikistan						
Total ECA: 9 PRSP countries							
LCR	Bolivia	6	14	8	4	14	18
LCR	Guyana	6	12	6	5	12	17
LCR	Haiti	6	12	6	6	12	18
LCR	Honduras	7	13	6	5	13	18
LCR	Nicaragua	7	13	6	5	13	18
Total LCR: 5 countries							
MNA	Djibouti	6	12	6	7	12	19
MNA	Yemen, Republic of	6	15	9	3	15	18
Total MNA: 2 countries							
SAR	Bhutan	6	13	7	4	13	17
SAR	Maldives	6	11	5	7	11	18
SAR	Nepal	6	11	5	5	11	16
SAR	Pakistan	5	10	5	7	10	17
SAR	Sri Lanka	5	10	5	8	10	18
Total SAR: 5 PRSP countries							
Grand Total: 64 countries (41 HIPC + 23 PRSP)							

Note: Countries that are shaded are not HIPCs, but are expected to prepare a PRSP.

Source: UNESCO Yearbook (1999) and World Bank's HIPC Web site (www.worldbank.org/hipc)

average number of pupil-years spent by pupils from a given cohort who graduate from a given cycle or level of education, taking into account the pupil-years wasted due to dropout and repetition. One school year spent in a grade by a pupil is equal to one pupil-year.

extent of educational internal efficiency in terms of the estimated average number of years to be invested in producing a graduate.

number of pupil-years spent by a pupil cohort (graduates plus dropouts) in the specified level of education by the sum of successive batches of graduates belonging to the same cohort.

pupil-years spent by the pupil cohort and the total number of graduates from the same cohort. These data can be derived using the cohort reconstructed model, which requires data on enrollment by grade for two consecutive years (years t and $t+1$); the number of repeaters by grade for year $t+1$; and the number of graduates for year t .

school survey, census, or records.

per graduate can be disaggregated by gender, by geographical location (region; urban/rural), and by type of institution (private/public).

value of this indicator is to the theoretical number of grades (or duration) of the specified education cycle, the higher the internal efficiency and the smaller the negative effects of repetition and dropout. A high number of pupil-years per graduate as compared to the normal duration denotes a waste of resources; hence, inefficiency.

lation of this indicator is based on pupil flow rates, its reliability depends on the consistency of data on enrollment and repeaters in terms of coverage over time and across grades. Differences in national regulations concerning the number of repetitions allowed should be taken into account when using this indicator for intercountry comparisons.

tual viewpoint, having all pupils graduate within the prescribed duration of the cycle is optimal with regard to economic efficiency and resource utilization, but this would not necessarily imply achievement of the expected learning outcomes. Furthermore, according to this calculation method, data on early dropouts (i.e., from lower grades) will produce a result indicating higher internal efficiency than will data on late dropouts (i.e., from higher grades); this means that efficiency from the economic point of view can be in contradiction with educational objectives that aim to retain pupils in schools until the higher grades, by which point they should have acquired the desired knowledge and skills. A

<p>cohort of pupils enrolled in the first grade of a given level or cycle of education in a given school year who are expected to reach each successive grade.</p>	<p>measures the holding power and internal efficiency of an education system. It illustrates the situation regarding retention of pupils from grade to grade in schools, and conversely also the magnitude of dropout by grade.</p>	<p>number of pupils belonging to a school cohort who reach each successive grade of the specified level of education by the number of pupils in the cohort that originally enrolled in the first grade, and multiply the result by 100.</p>	<p>grade for two consecutive years (years t and t+1); number of repeaters by grade for year t+1.</p>	<p>school survey, or census.</p>	<p>can be disaggregated by gender, by geographical location (region; urban/rural), type of institution (private/public), and, where population and school enrollment data permit, by ethnicity. It can also be disaggregated into survival with and without repetition.</p>	<p>approaching 100 percent indicates a high level of retention and low incidence of dropout. Survival rates may vary from grade to grade, indicating grades with relatively more or fewer dropouts. The distinction between survival rates with and without repetition is necessary to compare the extent of wastage due to dropout and repetition. Survival rate to the fifth grade of primary education is monitored by UNESCO, since this is commonly considered as the prerequisite for sustainable literacy.</p>	<p>lation is based on pupil flow rates, the reliability of the survival rate depends on the consistency of data on enrollment and repeaters, in terms of coverage over time and across grades.</p>	<p>cator is usually estimated using cohort analysis models that are based on a number of assumptions, errors in the data available on enrollment and repeater will affect estimates derived from flows.</p>
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The reconstructed cohort method

A school cohort is defined as a group of pupils who join the first grade of a given cycle in the same school year, and who subsequently experience as individuals the events of promotion, repetition, dropout, or successful completion of the final grade.

The reconstructed cohort method is pertinent and commonly used to analyze the internal efficiency of an education system. It places less demand on the availability of detailed data over time. To apply this method, data on enrollment by grade for two consecutive years and on repeaters by grade from the first to second year are sufficient to enable the estimation of three main flow rates: promotion, repetition, and dropout. Once obtained, these rates may be analyzed by grade, to study the patterns of repetition and dropout, and, in a reconstructed pupil-cohort flow, to derive other indicators of internal efficiency.

How well these indicators describe the way in which a cohort actually progresses through a cycle of education depends on the validity of the assumptions on which this model is based and on the reliability of the statistical data available for estimating the flow rates.

Assumptions behind the cohort reconstruction model. The methodology of the reconstructed cohort flow model is based on the fundamental concept that for pupils enrolled in a given grade at a certain year, there can be only three eventualities: (1) promotion to the next grade in the next school year, (2) dropout during the course of the year, and (3) repetition of the same grade in the next school year.

Based on calculated flow rates, a cohort of 1,000 pupils through the educational cycle may be simulated, with the following important assumptions:

- ⊃ that there will be no additional new entrants in any of the subsequent years during the lifetime of the cohort to the original cohort of 1,000 pupils;
- ⊃ that at any given grade the same rates of repetition, promotion, and dropout apply, regardless of whether a pupil has reached that grade directly or after one or more repetitions (hypothesis of homogenous behavior);
- ⊃ that the number of times any given pupil will be allowed to repeat is well defined; and
- ⊃ that flow rates for all grades remain unchanged as long as members of the cohort are still moving through the cycle.

It is important to note that since data are not generally directly available on promotion and dropouts, errors in the data available on enrollment and repeaters will affect the estimates derived for these two flows. Three common errors that may distort the flow rates can be described as follows:

- ⊃ **Over-reporting of enrollment/repeaters (particularly in the first grade).** This can be deliberately done by the school when there is a financial incentive; for example, if the number of teachers paid by the government is related to the number of pupils enrolled. A different type of over-reporting occurs in countries where parents have incentives to register their children at school at the beginning of the school year, but where a large number of those registered do not attend school or only attend for a very brief period.
- ⊃ **Incorrect distinction between new entrants and repeaters.** This leads, other things being equal, to an under-reporting of repeaters in the first grade and to an overestimation of dropouts from this grade.
- ⊃ **Yearly variation in the coverage of the data.** Assume that, for one reason or another, the data available for year t are complete while those for year $t+1$ are incomplete. Disregarding other types of errors, this would result in the number of promotions and repeaters in $t+1$ being underestimated and the number of dropouts overestimated. Furthermore, if the data for school year $t+2$ are complete, this would imply that some of the promotions and repeaters that year were not included in the enrollment the previous year, leading to overestimation of the promotion and repetition rates and underestimation of the dropout rate, which may be negative in some cases.

of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population at the official primary school entrance age.

intake rate indicates the general level of access to primary education. It also indicates the capacity of the education system to provide access to the first grade for the population of official school entrance age. This indicator is used as a substitute to the net intake rate (see section 1.6) in the absence of data on new entrants by single years of age.

number of new entrants into the first grade, irrespective of age, by the population of official school entrance age, and multiply the result by 100

the first grade of primary education (or enrollment minus repeaters in the first grade); population of the official primary school entrance age.

school survey, or census for data on new entrants by age. Population census or estimates for the population of primary school entrance age.

intake rate may be disaggregated by gender, geographical location (region; rural/urban), and, where population and school enrollment data permit, by ethnicity.

intake rate indicates a high degree of access to primary education. As this calculation includes all new entrants to first grade, regardless of age, the apparent intake rate can be more than 100 percent, due to over- and under-aged children entering primary school for the first time.

data used in deriving this indicator should refer strictly to the official school entrance age. Care should be taken not to include repeaters in the first grade in the calculation, since this will lead to an inflated apparent intake rate.

intake rate may be the effect of a backlog of over-aged children who did not enter school when they first reached the official primary school entrance age.

the first grade of primary education who are of the official primary school entrance age, expressed as a percentage of the population of the same age.	level of access to primary education of the eligible population.	ber of children of official primary school entrance age who enter the first grade of primary education by the population of the same age, and multiply the result by 100.	new entrants in the first grade of primary education by single years of age, and the population of official primary school entrance age.	school survey, or census for data on new entrants by age. Population census or estimates for the population of school entrance age	rate (NIR) may be disaggregated by gender, geographical location (region; rural/urban), and, where population and school enrollment data permit, by ethnicity.	cates a high degree of access to primary education for children of official primary school entrance age. Achieving an NIR of 100 percent is the target for countries that have subscribed to the policy goal of universal primary education.	new entrants and population used in deriving this indicator should refer strictly to the official school entrance age. The NIR in principle should not exceed 100 percent.	can be distorted by an incorrect distinction between new entrants and repeaters in the first grade. This can be the case especially for underage pupils who may repeat the first grade at the official entrance age.
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ment in a specific level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education in the given school year.

rollment ratio (GER) indicates the capacity of the education system to enroll students of a particular age group, and is widely used to show the general level of participation in a given level of education. It is used as a substitute indicator for the net enrollment ratio (NER; see section 1.8) when data on enrollment by single years of age are not available. It can also be a complementary indicator to NER by indicating the extent of overaged and underaged enrollment.

number of pupils enrolled in a given level of education, regardless of age, by the population of the age group that officially corresponds to that level of education, and multiply the result by 100.

for a given level of education. Population of the age group corresponding to the specified level.

school survey, or census for data on enrollment by level of education. Population censuses for school-age population normally can be obtained from the central statistical office.

can be disaggregated by gender, geographical location (region, urban/rural), level of education, and, where population and school enrollment data permit, by ethnicity.

erally indicates a high degree of participation, whether the pupils belong to the official age group or not. A GER of 100 percent indicates that a country is, in principle, able to accommodate all of its school-age population, but it does not indicate the proportion already enrolled. The achievement of a GER of 100 percent is therefore a necessary but not a sufficient condition for the enrollment of all eligible children in school. A GER exceeding 90 percent for a particular level of education indicates that the aggregate number of places for pupils is approaching the number required for universal access of the official age group, but this is a meaningful interpretation only if underaged and overaged enrollments can be ex-

each level of education should be based on total enrollment in all types of schools and educational institutions, including public, private, and all other institutions that provide organized educational programs.

exceed 100 percent due to the inclusion of overaged and underaged students, because of early or late entrants, and because of grade repetition. A rigorous interpretation of GER would require the input of additional information to assess the extent of repetition, late entrants, and so on.

official age group for a given level of education, expressed as a percentage of the corresponding population.

percent of participation in a given level of education of children belonging to the official age group corresponding to the level of education.

number of pupils enrolled who are of the official age group for a given level of education by the population of the same age group, and multiply the result by 100.

single years of age for a given level of education. Population of the age group corresponding to the given level of education.

school survey, or census for data on enrollment by age. Population censuses or estimates for school-age population normally can be obtained from the central statistical office.

be disaggregated by gender, geographical location, (region, urban/rural), level of education, and, where population and school enrollment data permit, by ethnicity.

degree of participation of the official school-age population. The theoretical maximum value is 100 percent. Increasing trends reflect improving participation at the specified level of education. Where the NER is less than 100 percent, the complement (i.e., 100 percent minus the NER value) provides a measure of the proportion of children not enrolled at the specified level of education—since some of these children could be enrolled at other levels of education, however, this difference cannot be taken to represent the percentage of students not enrolled. A more precise complementary indicator is the age-specific enrollment ratio (ASER) which shows the participation of the population of a particular age in education. When the NER is compared with the GER, the differ-

each level of education should be based on total enrollment in all types of schools and educational institutions, including public, private, and all other institutions that provide organized educational programs.

pertinent indicator for tertiary education, because of the difficulty of determining an appropriate age group due to the wide variations in the duration of programs at this level of education.

of the population aged 15 years and over who can both read and write with understanding a short, simple statement on their everyday life. A person who can only write figures, his or her name, or a memorized phrase is not considered literate. This definition of literacy is widely used in national population censuses and surveys but its interpretation and application may vary to some extent among countries, depending on national, social, and cultural circumstances.

good measure of educational achievement in developing regions. For young people in developing regions, literacy may be a better measure of education than enrollment, since it usually reflects a minimal level of successfully completed schooling. The adult literacy rate shows the accumulated achievement of primary education and literacy programs in imparting basic literacy skills to the population, giving people a skill that they can apply in daily life and one that they can also use to advance their learning. Literacy affords the potential for further intellectual growth and contributes to the socioeconomic-cultural development of society. Illiteracy rates indicate the

number of people who are literate by the population of the corresponding age group, and multiply the result by 100. Apply the same method using the number of people who are illiterate to derive the illiteracy rate, or take the complement of the literacy rate.

the number of people aged 15 years and over who are illiterate.

household, and/or labor force surveys.

may be disaggregated by gender, geographical location (region; urban/rural), and, where data permit, by ethnicity. It should also be disaggregated by the following age groups: 15–19; 20–24; 25–29; 30–34; 35–39; 40–44; 45–49; 50–54; 55–59; 60–64; and 65 and above.

eracy rate indicates a wide coverage of the primary education system and literacy programs, in that a large proportion of the population have acquired the ability to use the written word. It is common practice to present and analyze literacy rates together with the absolute number of adults that are illiterate, as improvements in literacy rates may sometimes be accompanied by increases in the illiterate population due to the changing demographic structure.

align measurements of literacy with the standard international definition, and to administer literacy tests on a sample basis to verify and improve the quality of literacy statistics.

some countries apply definitions and criteria for literacy that are different from the standard international definition; some countries also may consider persons with no schooling to be illiterate or may change definitions between censuses. Practices for identifying people as literate or illiterate during census enumeration may also vary, and errors in self-declarations of literacy can affect the reliability of literacy statistics.

Technical Note P.2 Template for Disaggregated Enrollment

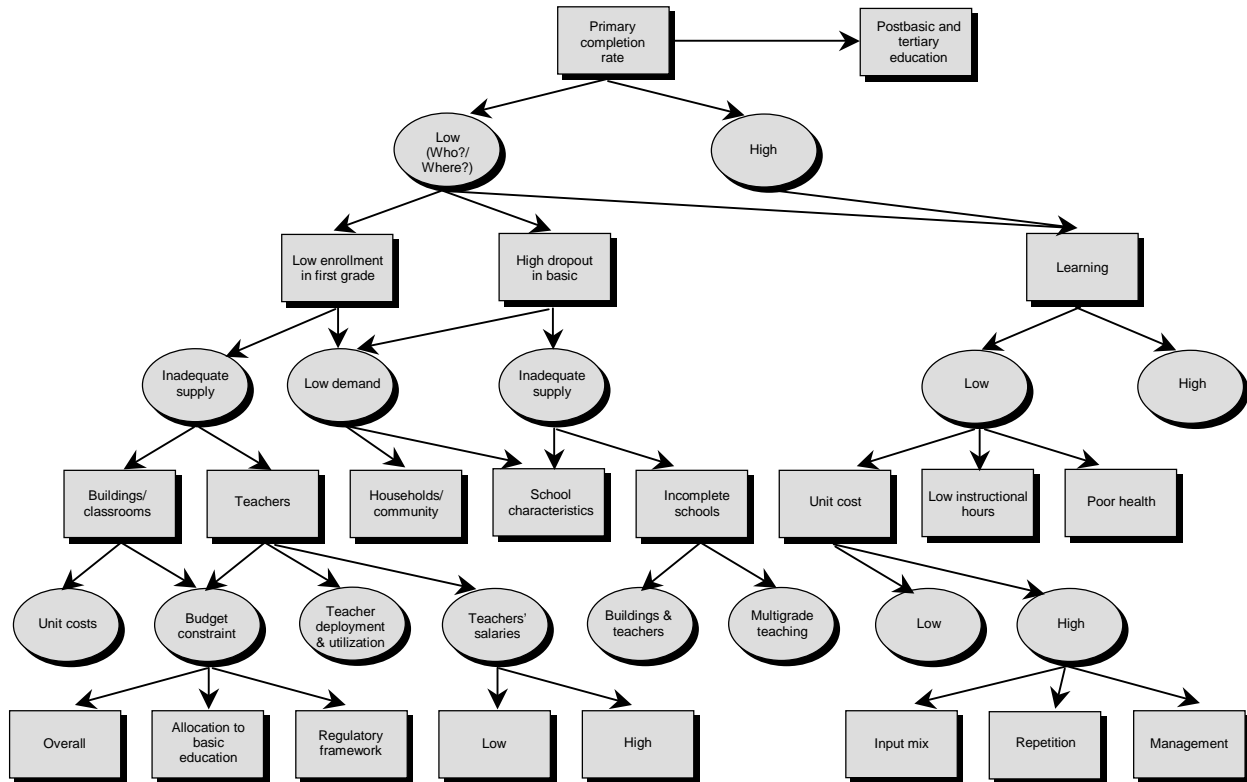
Sample Template for Disaggregating Education Indicators

<i>Region</i>	<i>Gender</i>				<i>Ethnicity</i>			<i>Income</i>		
	<i>Average</i>	<i>Boys</i>	<i>Girls</i>	<i>Differential</i>	<i>Indigenous</i>	<i>Others</i>	<i>Differential</i>	<i>Quintile 1</i>	<i>Quintile 2</i>	<i>Quintile 3</i>
Basic Education Completion Rates (%)										
Region 1										
Region 2										
<i>Average</i>										
Years of Schooling Input per Graduate										
Region 1										
Region 2										
<i>Average</i>										
Cohort Completion Rates (%)										
Region 1										
Region 2										
<i>Average</i>										
Primary Intake Ratio (%)										
Region 1										
Region 2										
<i>Average</i>										
Number of Children Out of School (%)										
Region 1										
Region 2										
<i>Average</i>										
Gross Enrollment Ratio (%)										
Net Enrollment Ratio (%)										
Repetition Rates (%)										
Dropout Rates (%)										
<u>Region 1</u>										
Grade 1										
Grade 2										
Grade 3										
Grade 4										
Grade 5										
Grade 6										
<i>Average</i>										
<u>Region 2</u>										
Grade 1										
Grade 2										
Grade 3										
Grade 4										
Grade 5										
Grade 6										
<i>Average</i>										

Technical Note P.3 Decision Tree for Analyzing Education Outcomes

This technical note elaborates on the decision tree for analyzing education outcomes that was presented in section 20.3.3 of chapter 19, “Education.”

Figure P.1. Decision Tree for Analyzing Education Outcomes



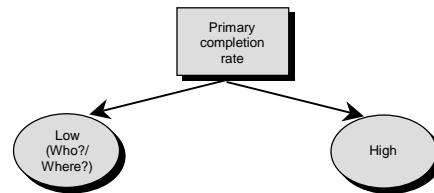
Enrollment rate in the final year of basic education: a key quantitative indicator

The decision tree starts with the premise that successful completion of primary schooling, a cycle of five to six years in most countries, is essential for children in order for them to maintain, throughout their adult lives, the levels of literacy and numeracy needed for productivity and fulfillment at work, at home, and as members of society. The use of the primary completion rate in the first analytic step of the decision tree, however, should not be taken to imply that schooling attainment (a quantitative indicator) is more important than actual learning (a qualitative indicator). Enrollment and persistence in school are necessary conditions for learning to occur, particularly when learning is measured by the achievement of skills such as basic literacy and numeracy, around which the basic education curriculum in nearly all countries is expressly designed, but they are obviously not sufficient conditions for learning. However, completion rates may respond more quickly to policy interventions, whereas gains in learning may take much longer to materialize. Indicators of learning may remain flat for several years while systems to enhance learning outcomes are being designed and put into place. Finally, starting with the completion rate rather than learning also reflects the reality that few low-income countries have reliable systems in place for measuring student learning achievement. It should be reemphasized, however, that enrollment and retention in school without learning has no value. For this reason, the cognitive and social achievements of those who enroll in school receive equal attention in the decision tree analysis.

The first question raised by the model is whether the proportion of the age group completing primary education has reached an acceptable level or whether it is still too low (figure P.2). Annual school surveys and/or the Education Management Information System (EMIS) will typically provide the necessary numerator information. Denominator data will usually be an extrapolation of the most recent

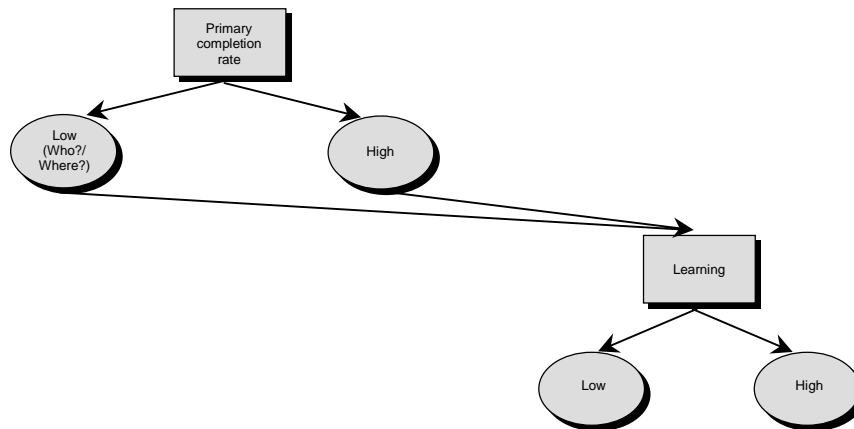
population census data collected by the central statistical office or UN/World Bank population databases presented in EdStats.

Figure P.2



If the primary completion rate is low, the next step (figure P.3) is to examine the profile of the excluded population: who they are (the numbers of children not in school by family income level, by gender, by caste, and by tribe, for example), where they are located (in urban or rural areas, for example), and also, within broad categories, if there are pockets of exclusion (for example, are there poor groups living within generally well-to-do communities?). This information may be available through the annual school survey, the national EMIS, and (for information on income) household surveys, such as the living standards measurement survey (LSMS) that many countries now conduct.

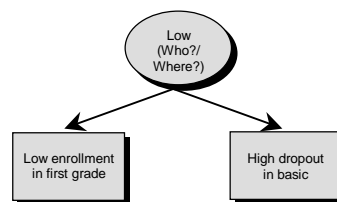
Figure P.3



Regardless of whether the primary completion rate is low or high, it is critical to establish what proportion of pupils have achieved the appropriate learning outcomes for primary education, as defined in the national curriculum (figure P.3). If learning is low, further analysis is needed to establish why.

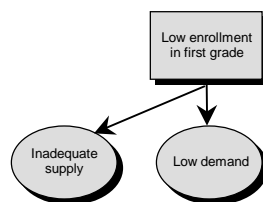
Low rates of primary completion (figure P.4) may be due to low intake in the first grade or to high dropout during the primary cycle. In many countries, it will be both. If the proportion of young children entering the first grade is similar to the proportion of older children reaching the final grade, then by definition dropout is low. The annual school survey should provide data on the numbers of boys and girls entering the first grade, and the LSMS can be used to identify at-risk children and provide information on their family background. Another rich source of data on children at risk is teachers' records.

Figure P.4



If the first grade intake is low, further investigation is needed. The causes fall into two broad categories (figure P.5): low demand for schooling (that is, there are unfilled school places) and inadequate supply of schooling (that is, school places are not available in adequate numbers and/or what is available is of poor quality).

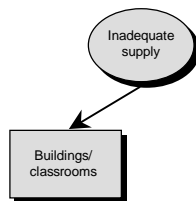
Figure P.5



Supply constraints as a cause of low enrollments

A critical dimension of school supply is the quantity of school buildings and classrooms (figure P.6). Teachers and children require a setting in which adequate teaching and learning can occur. One measure of this is the pupil-classroom ratio. (The data for this should be available through the annual school survey or through the EMIS.) Pupil-classroom ratios below 30 to 1 would usually be a cause for concern on efficiency grounds, and ratios above 50 to 1 raise questions about quality. In most poor countries, a ratio of between 35 to 1 and 45 to 1 in basic education is likely to be optimal. However, pupil-classroom ratios will vary according to how classrooms and teachers are utilized. In urban areas, multiple-shifting (using the same classroom for more than one class group) may be needed to address a shortage of classrooms, and pupil-classroom ratios could be high without serious impact on the quality of learning. Rural pupil-classroom ratios tend to be low because of low population density, but alternative teaching arrangements, such as multigrade classes, may be a way of using costly classrooms and teachers more effectively.

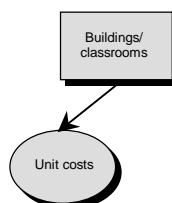
Figure P.6



Another aspect of school supply is the distance from home to school, as indicated by the proportion of the relevant age group (in different areas of the country) living far from school, say, more than 3 kilometers away. This problem can be assessed by merging school survey data with census data or through a special school mapping exercise. School mapping can identify the magnitude of the problem and also its geographical distribution. Household survey data can also be used, if a relevant question is included in the survey.

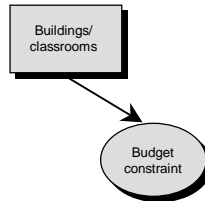
The cost of new classrooms in low-income countries varies from as little as US\$2,000 to as much as US\$18,000. One important reason for shortages of classrooms in low-income countries is that prevailing construction costs are too high (figure P.7). It is important to determine if unit construction cost is a factor inhibiting the supply of classrooms nationally and regionally, and to assess whether or not a different construction modality (for example, using large versus small contractors, placing greater reliance on local materials, or encouraging community involvement) would help to lower costs and alleviate the supply constraint. Patterns of human settlement bear on the solutions identified, with sparsely populated rural areas requiring more imaginative and often more expensive solutions. Information on construction costs may be available through the schools building department of the ministry of education or ministry of works, and sometimes through social fund programs.

Figure P.7



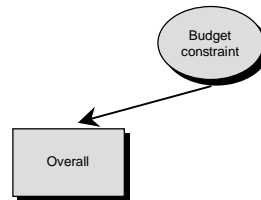
While lowering construction costs can be important, alleviating substantial supply constraints in most cases will require that additional resources be mobilized (figure P.8). Most resources for basic education come from government and parents: information on these sources can be found in government budget publications and is also collected in household surveys, such as the LSMS. Foreign aid may be another important source of funding, especially for capital expenditures. Community self-help also often contributes significantly to basic education needs.

Figure P.8



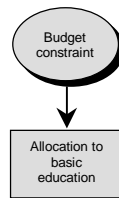
If inadequate budget is identified as a major factor constraining educational expansion, key questions are the extent to which government, parents, and communities might do more, and the extent to which foreign aid, such as official development assistance (ODA), for education can be increased (figure P.9). Public spending on education ranges from as little as 1 percent to as much as 10 percent of GDP, and from 10 percent to 40 percent of total government spending. Senegal, for example, allocated 33.1 percent of its budget to education in 1995. Comparative information is available from UNESCO's *Statistical Yearbook* and from the World Bank's *World Development Indicators* and educational statistics database (EdStats).

Figure P.9



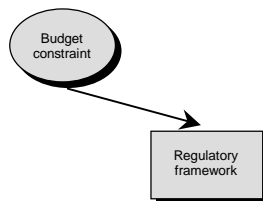
The share of the education budget devoted to basic education varies a lot from one country to another. In formulating a PRSP, the allocation for basic education needs to be examined (figure P.10) to determine if more can be allocated to this level, in light of (1) the benefits that basic education confers on society in general, and poor families in particular, and (2) the disproportionate share of public education spending that goes in many, if not all, poor countries to the relatively small number of children who progress beyond basic schooling.¹ Comparative information is available from UNESCO's *Statistical Yearbook* and from the World Bank's *World Development Indicators* and EdStats.

Figure P.10



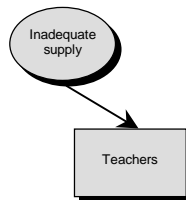
Finally, it should be recognized that public spending on basic education can go further when there is a vibrant private education sector serving those people who are willing and able to pay directly for education services. Private spending (which usually covers 100 percent of direct costs in private schools) reduces the burden on the government budget; private education may also lead to better systemwide quality, by providing choice for families and competition among providers. Some countries nonetheless restrict the operation of private schools (figure P.11). PRSPs can assess the extent to which government regulations that restrict private education or community involvement in school construction affect resource availability. (See technical note P.5 for a checklist for assessing a country's regulatory framework for education.)

Figure P.11



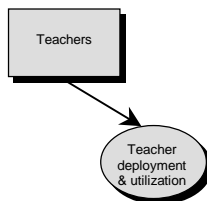
In many countries, the enrollment of pupils is less constrained by lack of buildings and classrooms than by an inadequate number and inefficient deployment of teachers in the system (figure P.12). In virtually every country, teachers' salaries account for more than 60 percent of the basic education budget; in some countries, the figure is more than 90 percent. A critical question to ask as part of the PRSP exercise, therefore, is the extent to which low enrollments are linked to teacher shortages. A first-level indicator is the national pupil-teacher ratio, found often in EMIS or the annual school survey. As with the pupil-classroom ratio, the optimal pupil-teacher ratio in many countries will be between 30 to 1 and 40 to 1, but as with classrooms, there are important utilization questions that need to be examined, to ensure that teacher resources are being put to the best possible use.

Figure P.12



While the overall teacher supply in a country may be adequate, there may be an oversupply in some regions and an undersupply in others (figure P.13). Many countries are unable, given existing salary levels and structure, to attract sufficient numbers of teachers to work in remote rural areas. Female teachers are often the hardest to persuade to teach in such areas: young women may not feel secure, and married women may not want to teach there because their husbands work elsewhere. As a result, there may be an oversupply of teachers in urban areas and a concurrent undersupply, especially of female teachers, in rural areas. This can have a negative impact on the basic education enrollment of girls, particularly beyond the age of puberty. Another problem occurs when large numbers of teachers are assigned to do administrative work and to fill other nonteaching positions. The pupil-teacher ratio broken down by district and rural/urban area can provide a rough picture of deployment issues. Data on the availability of teachers in different parts of the country should be available from the annual school survey or EMIS.

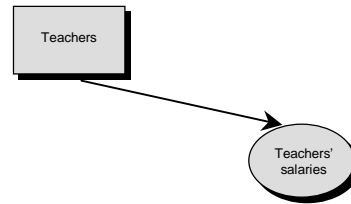
Figure P.13



Even where deployment patterns favor no particular geographic regions or income groups, the level of teachers' salaries may be too high, making it impossible to pay enough teachers from the budget to satisfy overall needs (figure P.14). Whether average teachers' salaries in the public sector are too high, too low, or appropriate relative to market rates is not a simple question to answer. Three tests can be used to guide assessment of salaries. First, does the number of applications for teacher training and for work as teachers significantly exceed the number of places? Second, how does the average teacher's salary compare with GNP per capita? The range in developing countries is from less than 1.5 to more than 10 times the average income. Third, do young teachers in the public sector earn a living wage (that is, a salary that is clearly above the poverty level or enough to support a family of four without the teacher having to seek a second job)? Obviously, the lower the average teacher's salary, the more teachers a country can afford to hire, all other things being equal. While budgets are always limited, salaries should,

however, allow teachers to live comfortably and give them status and respect in the community. Salary structures should also contain incentives for professional development and good classroom performance.

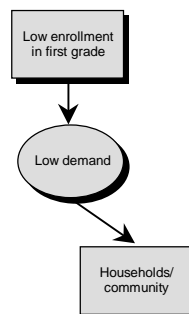
Figure P.14



Weak demand as a cause of low enrollments

Low enrollment rates may reflect supply constraints, but weak demand can also be a factor limiting enrollments. A demand problem clearly exists when, despite the availability of conveniently located classrooms and schools, significant numbers of families choose not to send their children to school (figure P.15). Many factors can affect the household decision to send a child to school, including cultural expectations, household income, the direct costs of school (for example, uniforms, books, transportation, and miscellaneous fees), the demand for children’s labor, and exogenous but increasingly important factors such as HIV/AIDS and other catastrophic health problems. Variation in demand can be substantial between ethnic groups and across provinces, districts, and communities. The same is often true between boys and girls: parents in some communities, if they need to choose, will send sons to school rather than daughters. They may be unable to afford the direct costs needed to keep all of their children in basic education; they may prefer to keep their daughters at home, for the household chores that girls perform or because of security risks; or they may decide that educating sons will bring greater benefits to the immediate family than educating daughters. Merging survey data with population estimates at the community level (from the census) is one way to assess the strength or weakness of demand for education in different parts of the country.

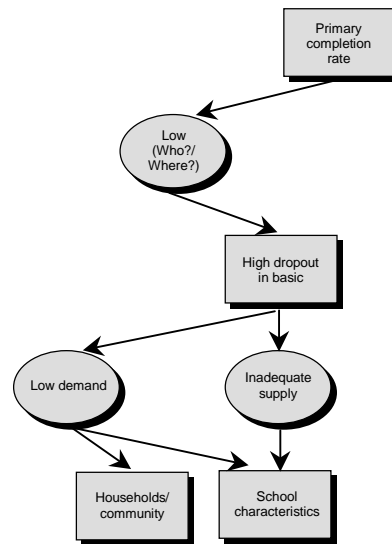
Figure P.15



Often, interactions exist between supply factors and household demand for schooling. Parents who do not enroll their children in first grade, for example, may be reacting against characteristics of local schools. An absence of school latrines can be a strong deterrent to enrollment, particularly for girls, and long distances to school, unsafe water at school, and dangerous or inadequate physical facilities may keep boys as well as girls at home.

Low enrollment rates in the final year of basic education may also reflect high dropout rates among those who do enter the first grade (figure P.16). Dropouts may be caused by the fact or by the perception that the quality of teaching and learning at school is low, or it may stem from inappropriate teacher behavior, such as sexual abuse or the use of corporal punishment. School census data often contains information on the availability of books and other instructional materials, and surveys of parents, pupils, and teachers can help to identify perceptions about the quality of teaching and learning.

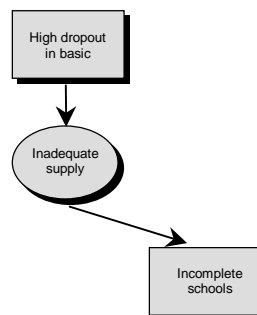
Figure P.16



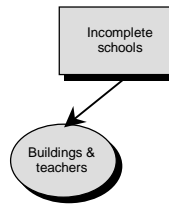
Information on the extent of dropout and absenteeism from school may be available through school surveys. School mapping exercises and school facility inventories additionally can be used to identify problem areas: key indicators include the relevance and accessibility of the curriculum (especially for children from poor families), the level of teacher qualifications, and the availability of books and supplies. In areas where school places are available yet children do not attend, or attend only irregularly, special stakeholder surveys can be conducted to ascertain parental and community attitudes toward schooling. Such surveys should try to identify alternative solutions that might satisfy parental expectations—altering the daily school timetable to enable children to perform household chores early or late in the day, changing the annual school calendar in areas where children are needed for seasonal work, or introducing into the curriculum subjects of particular value in poor communities may influence parental decisions favorably. Developing cash or in-kind transfers for poor households may also help, by enabling the parents of such children to cope with income instability.

In remote areas, schools may have fewer classrooms than there are grades in the basic education cycle (figure P.17). If each teacher teaches just one grade, pupils may complete the third or fourth grade and then have to look for another school, perhaps some distance away, to complete their basic education. Not surprisingly, many children drop out at that stage. Substantial dropout rates in areas with incomplete schools are not uncommon in low-income countries, especially in rural areas. School survey data can indicate the magnitude of this problem.

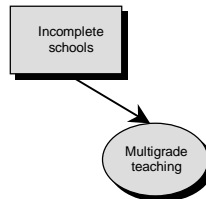
Figure P.17



The obvious remedy to the problem of an incomplete school is to build more classrooms and recruit more teachers (figure P.18). This, however, can be expensive, particularly if the number of children in the school’s catchment area is small. Another option is to build boarding facilities that can be used to bring children from different rural areas together in the same school, but this too tends to be a costly option.

Figure P.18

Multigrade teaching, in which one teacher teaches more than one grade, is gaining favor as a pedagogically sound and cost-effective solution to covering sparsely populated rural areas (figure P.19). Not only does multigrade teaching allow each teacher to work with a larger number of children and make better use of classrooms, it may also have pedagogical advantages. To be effective, multigrade teachers require special training and close supervision, and special self-instructional materials are also needed for pupils in such classes; nevertheless, research shows that pupils often do well in a multigrade environment—younger children have been seen to benefit from the presence of older children in the same class, and vice versa. Biennial, or even triennial, intake of pupils into first grade is another option that some countries have tried and may be the only option where the development of multigrade teaching is thought to be undesirable or unworkable.

Figure P.19

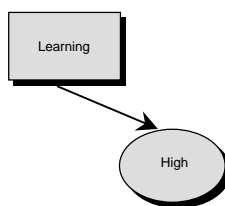
Student learning achievement: a key qualitative indicator

Every PRSP should include an assessment of the quantitative outcome of basic education (net enrollment rates in different grades). Assessing learning outcomes is also critically important but is tricky, in terms of both what to measure and how to measure it. Countries have different ideas as to the relative importance of different skills, for example, and this will be reflected in the curriculum. Some countries may give relatively more emphasis to civic responsibility and social values such as teamwork and respect for the rule of law, while others may give greater weight to cognitive outcomes. There is almost universal agreement, however, on the importance of basic literacy and numeracy skills for all children in basic education, and as a minimum, every country should assess learning achievement in these two areas.

The appropriate modality to measure learning outcomes depends on the purposes of the assessment. Given that in a PRSP the main aim is to assess the progress of the system as a whole and its success in addressing the learning needs of the poor, rather than to assess the performance of individual pupils, well-designed tests are needed for a random sample of pupils nationwide. The same tests can be repeated over time, and the results compared. Countries implementing national learning assessments or participating in international and regional assessments² will have more reliable information than countries not involved in such assessments, where subjective judgments will need to be made.

If a national assessment leads to the conclusion that student learning is on average high (figure P.20), a country should still determine if this holds for all pupils or if pupils from wealthy families, for example, have an advantage over pupils from poorer homes. The variance around the mean performance of pupils in the sample can provide an initial indication of the extent of inequality in learning outcomes, and may point to the need for further work to identify specific populations at risk. If this is the case, sample-based tests of learning achievement should be administered to make statistically valid comparisons of the performance gaps between at-risk pupils and the rest of the population. Ongoing national assessments can be designed to satisfy this purpose.

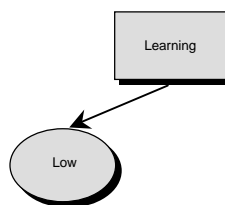
Figure P.20



Sources of poor learning outcomes

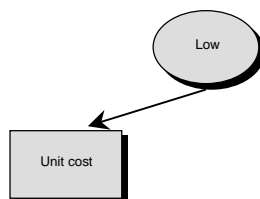
Learning outcomes in many low-income countries are unsatisfactory on average (figure P.21). Even countries where nearly all children reach the final grade of basic education may be dissatisfied with learning outcomes, as compared with international standards or with their own judgment as to what constitutes minimum learning competencies. And even where learning outcomes are satisfactory on average, a large number of poor children may still not be acquiring these minimum competencies. Analysis must then turn to the questions of why outcomes are unsatisfactory and what can be done to improve them. Where there is low access to education and learning achievement is low (the worst-case scenario), an investigation should be made of both the qualitative and quantitative aspects of the problem, and specifically of inputs and processes. Problem inputs may include irrelevant, poorly articulated, overloaded curricula; inadequate teaching and learning materials; and unsuitable learning environments. Processes may include poor teaching quality; inadequate utilization of curricula and instructional materials; low teacher motivation; inappropriate learning processes; unsuitable languages of instruction; inappropriate student assessment and examination processes; poor school management and instructional leadership; inappropriate curricula implementation and monitoring; and home practices that are not supportive of effective schooling.

Figure P.21



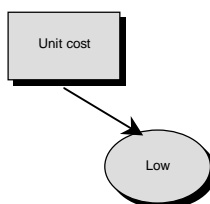
A key variable affecting learning outcomes is the unit cost of basic education, which may be defined as the amount of public spending per pupil per year (figure P.22). This variable affects classroom conditions, including such factors as class size, teacher qualification, and the availability of learning materials.

Figure P.22



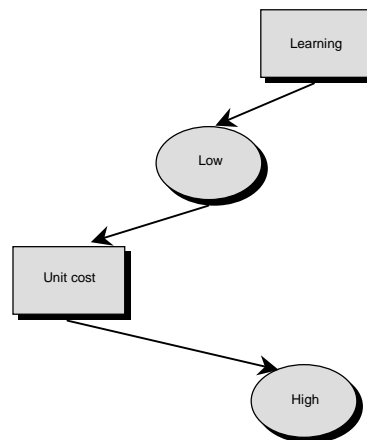
If the unit cost is low, compared to what other countries at similar income levels and with well-performing education systems are spending (figure P.23), it may be necessary to increase spending to raise learning outcomes. Analysis will be required to determine the ideal mix of inputs and the best utilization of each of these inputs to improve learning outcomes.

Figure P.23



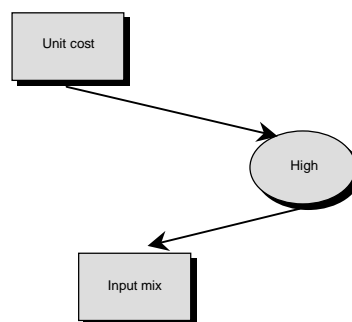
If, on the other hand, the unit cost is high and yet learning is low (figure P.24), this indicates inefficiency in the system. The next step is to determine the underlying reasons, which fall into three main categories: (1) an input mix that does not support learning, (2) high repetition rates, and (3) inefficient management. The distribution of spending should also be investigated, as part of the PRSP. A situation in which unit costs are much lower in some schools than in others or, in particular, in which less is spent on children in poor communities (because, for example, the least qualified and least experienced teachers end up teaching in poor communities or because schools in poor areas tend to be inadequately equipped) is inequitable and is not consistent with the strategies needed for poverty reduction. PRSP analyses therefore must examine expenditure by geographical area and by income level. Many World Bank Public Expenditure Reviews and Poverty Reports contain information on the benefit–incidence of public spending on education.

Figure P.24



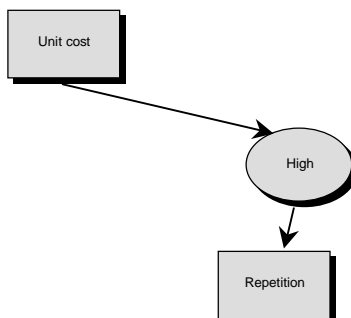
One possible cause of high unit costs together with low learning outcomes is a mix of inputs that is suboptimal and that does not support learning (figure P.25). Too much may be being spent on administration relative to teaching, for example, or too much may be being spent on personnel in general (administrators and teachers) and too little on non-salary pedagogical inputs such as textbooks and other instructional materials. In some countries, all of what the government spends goes for salaries. In these countries, it is left to parents and external financing agencies to provide essential instructional materials, and clearly, poor families find it difficult to pay for such things. By the same token, extreme reliance on external funding is problematic, as such funding is unpredictable and relying on it shifts the locus of control for education policy formulation from the country to external agencies. An analysis of what inputs are being provided, and from which sources, may identify where some of the problems are. Analysis of this kind can be found in public expenditure reviews (PERs) or in reviews of public investment plans (PIPs).

Figure P.25



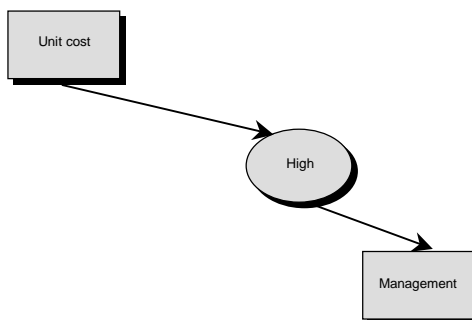
Ideally, all children in one grade of basic education would be promoted to the next grade at the end of the year. Where many children are held back, or choose to repeat grades, the cost per basic education graduate rises as more of all inputs, including the teacher’s time, classroom utilization, and instructional materials, are used up. Repetition (figure P.26) can clog an education system, retarding the flow of pupils and making it more difficult and more expensive to bring children currently not enrolled into the system. Annual school surveys provide information on repetition rates, and the causes of repetition can be determined through investigations at the school level. These can vary widely and might include such factors as teacher expectations about the number of children who should repeat; system rigidities such as dependence on examinations to dictate the promotion of pupils; poor quality instruction; poor student health or nutritional status; seasonal demands for child labor; and household income insecurity.

Figure P.26



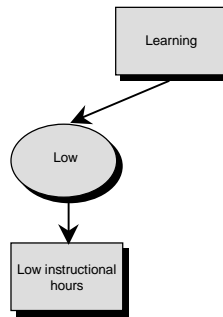
A final cause of high unit costs combined with poor learning outcomes is inputs that are poorly managed (figure P.27). Employing teachers and not training them, or failing to upgrade their skills over time, can be a waste. High spending on textbooks without making sure that these are distributed throughout the system and utilized in classrooms as intended is also a waste of resources. Sector reviews sponsored by major bilateral and multilateral donors often contain analyses of management issues.

Figure P.27



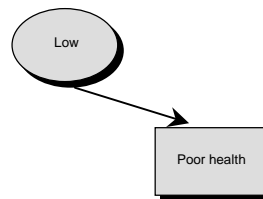
Insufficient instructional time can also result in low learning achievement. The average OECD country provides more than 800 hours of instructional time per year. Some developing countries require even more (the Philippines and Indonesia, for example, each require 1,100 hours), but in many countries short school days (in some countries, as little as three to four hours per day) and short school years (sometimes no more than 160–170 days per year) are a potential cause of low learning achievement (figure P.28). A pupil who is at school only three and a half hours a day for 165 days a year has fewer than 600 annual hours in which to master basic competencies that another pupil in a different country may be given more than 1,000 hours to achieve. The number of hours required to cover the curriculum can be imputed from curriculum guides or official regulations, and the actual number of instructional hours can be measured from school surveys and by direct observation. Increasing the number of instructional hours to raise learning achievement is often an expensive policy option, and may be difficult to do where multiple-shifting is used to achieve acceptable enrollment rates, but it may also be the most powerful remedy wherever low achievement is a major concern. If the budget constraint prohibits increases in instructional hours throughout the entire system, a strategy for reducing poverty may require that this be targeted to benefit the children who need it most—namely, the poorest of the poor.

Figure P.28



In many low-income countries, or at least in the poorest regions of those countries, the incidence of malnutrition and disease limits the capacity for learning in school. Where malnutrition is prevalent in the earliest years of childhood, many children are physically stunted (below normal height) by the time that they enter school, and many of those who are malnourished and sick never attend school at all. Those who do enroll tend to be listless from hunger and weakened from frequent bouts of diarrhea and fever, and their attendance and academic achievement obviously suffer. The high benefits predicted to accrue from investment in education are never realized in the case of these sick and malnourished children.

Figure P.29



Postbasic and tertiary education

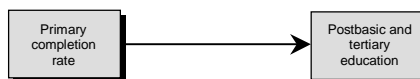
Secondary and higher education provide people with the skills they need to enter formal employment and to secure a pathway out of poverty. Higher education additionally provides nations with the trained professionals that are critical for development, such as teachers, health workers, and public and private sector managers. The major challenge to governments is how to achieve balanced development of the entire education sector within a context of limited financial and human capacities.

The relatively high private rates of return on secondary and higher education mean that there are many more public policy alternatives to support the development of these levels than there are to support basic education. These include cost-sharing and alternative governance structures in public education, and enabling measures for private education. The teams that develop PSRPs should review the policies in secondary and higher education to ensure that the regulatory environment encourages high-quality private providers to expand the capacity of upper secondary and especially tertiary education; that cost-sharing arrangements are fair and equitable, given the expected private and public returns; that higher education institutions have appropriate degrees of financial, managerial, and academic autonomy; and that there are sufficient safeguards—for example, scholarships, loans, work-study, and fee exemptions—to enable poor students to enroll.

Access to higher levels of education is often an important determinant of the completion of basic education (figure P.30). This is especially true for poor families, who are forced by resource constraints to choose between education and other valuable investments. Even where the social rate of return on basic schooling is high, significant private benefits to the family may accrue only where there are good prospects for children to continue beyond basic education and to enroll in good-quality senior secondary and tertiary education. In many countries, entry into the formal labor market depends heavily on whether or not one has completed university or, at least, high school. Investigators should ask to what extent the availability of senior secondary education influences dropout in the higher grades of basic education. A simple answer may be found by looking at the correlation between dropout in basic education (available in EMIS statistics) and the availability of a nearby senior secondary school (available from school mapping exercises). The conclusions from such statistical analysis can be cross-checked by

conducting parent interviews. If an adequate supply of secondary and tertiary education places is available, analysis should shift to focus on who fills these higher places. If the enrollment patterns clearly discriminate against children from poor families, then policies such as scholarships and fee exemptions should be put in place to help poor students to enroll.

Figure P.30



Technical Note P.4 Education Data Needs

The PRSP exercise requires information on student access and flows, the supply and demand for schooling, the quality of education, the characteristics of schools, and the allocation of personnel and financial resources. The value of the exercise is significantly increased if the data can be broken down to reveal differences in education between the wealthier and poorer segments of society.

The PRSP should provide a basis for monitoring progress toward improving educational opportunities for the poor. It needs to enable policymakers to make decisions, and to support broad discussion about the causes of unsatisfactory educational attainment of the poor and what solutions to envision. Data should therefore be:

- timely and consistent, and therefore monitorable on a regular basis;
- grounded in a model of school improvement;
- policy-relevant; and
- easy to understand and manipulate.

Investigators should identify a few key indicators that will enable policymakers to judge progress. Student access to the sixth grade can be the main indicator, with a few others to be chosen by investigators after identifying key constraints in the system. Unfortunately, there is no single good source of data for this exercise, and investigators must therefore gather data from a number of sources. Some common sources of data are listed in table P.2.

Table P.2. Common Sources for Education Data

Source	Benefits	Drawbacks	Source
School surveys	Regular, timely. With proper technology and skills often can be manipulated to provide a wide variety of information	Often not disaggregated by income group, though some disaggregation by region and gender is usually provided	National EMIS units
Household and living standards measurement surveys (LSMSs)	Enables a focus on the poor	Often not regular or frequent, difficult to manipulate	National statistics offices, multilateral development banks, U.N. organizations
National assessments	Direct and standardized measure of student learning that may be monitored over time	Not available in many countries	National testing and assessment departments, regional and international testing and assessment organizations
Special sector studies (civil service surveys, stakeholder analyses, public expenditure reviews)	Detailed information on and analysis of key aspects of the education system	Not regular	Government ministries, major donors, NGOs
International comparisons: UNESCO, ILO, EdStats, OECD	Consistency. OECD data are policy-relevant and grounded in model of school improvement	Time lag in reporting. Information is often only reported at the national level. There are currently no HIPC's in the OECD reports	World Wide Web,* World Bank (<i>World Development Indicators</i> , EdStats), UNESCO (<i>Statistical Yearbook</i> , <i>World Education Report</i>), OECD (<i>Education at a Glance</i>)

*Useful Web sites: <http://unesco.org> (UNESCO Statistics); <http://www.oecd.org> (OECD Statistics); http://www.info.usaid.gov/educ_training/ged.htm (USAID Global Education Database); <http://www.csteep.bc.edu/TIMSS>.

Technical Note P.5 Guidelines for Assessing a Country’s Regulatory Framework for Education³

The regulatory framework for education refers to the set of instruments that governments use to influence the actions of individuals and firms involved in the education sector. Used in this manner, the definition of “regulatory framework” is broad in two respects. First, the term does not simply refer to what is written in legislation: the elements of the regulatory framework in practice may be set out in education and other legislation, in mandates, and in regulations such as orders-in-council and departmental policies.

The definition is also broad, in that it includes the rules that govern:

- ⊃ how providers are established;
- ⊃ the level and manner in which providers are subsidized;
- ⊃ the taxation and customs treatment of providers;
- ⊃ how providers are governed and managed;
- ⊃ the operational flexibility of providers;
- ⊃ information disclosure requirements on providers;
- ⊃ regulation of the teacher labor market, including teacher registration and contracting arrangements; and
- ⊃ the process of review and quality assurance of providers.

The regulatory framework for education sets the overall environment in which parents, students, teachers, schools, higher education institutions, and the government itself operate. It represents, in essence, the “rules of the game” for the various stakeholders in the education sector.

To be effective, design of the regulatory framework should be founded in a careful assessment of the appropriate role of government in the sector. This should involve an analysis of:

- ⊃ whether or not there is market failure;
- ⊃ the source of market failure (for example, capital market imperfections, information problems, or affordability problems); and
- ⊃ whether government intervention would produce a better result than the private market, after accounting for the fact that government intervention is itself not cost-free (for example, there are efficiency costs to raising taxes).

A range of policy instruments or tools are available to respond to market failure:

- ⊃ Governments can purchase goods and services for people or can subsidize a service or activity. This could include paying living allowances to students, subsidizing a school’s operating expenditures, or providing vouchers to students to attend public or private schools.
- ⊃ Governments can provide services directly (for example, governments generally own most schools and most universities).
- ⊃ Governments can mandate or require firms or individuals to do or not do certain things. This can include putting in place health and safety requirements for schools, limiting the fees that can be charged by schools, requiring particular governance structures for schools, and requiring that students attend school between certain ages, for example.

Technical Note P.6 Cost-Effectiveness of Educational Interventions

Countries aiming at reforming their education system should ideally select educational interventions based on a measure of their cost-effectiveness. This means that countries should assess which interventions have the greatest impact—that is, which factors most effectively improve student learning—and compare the unit cost of each intervention to ensure that they make the best use of their scarce resources. However, the reality is that too often educational investments are made on the basis of untested or partially tested assumptions about the cost-effectiveness of particular interventions, and that they therefore carry the risk of wasting limited human and financial resources.

Measuring cost-effectiveness requires that countries first adopt some assessment mechanisms to evaluate student learning (see “Student learning outcomes” under section 20.3.1 of the main chapter). The

use of a common assessment mechanism by several countries, such as TIMSS or the UNESCO/OREALC regional study for Latin American countries, enables the comparison of those countries' learning scores and as a result can facilitate the comparison of the cost-effectiveness of educational interventions. The second step is to single out and measure the impact of different inputs or factors on students' learning. For example, the availability and use of textbooks, the provision of preschooling, radio instruction, and some in-service training programs (Lockheed and Verspoor 1991) are often cited as important factors affecting learning and retention. The third step is to cost these different inputs. This step, however, is seldom undertaken, resulting in the measure of impact only rarely being related to costs.

The exercise of estimating costs and impacts should alert policymakers to the relative value of the strategies they are selecting and may oblige them to revise their presumptions (Schiefelbein and others 1999). Furthermore, the estimated costs of interventions can be used to provide an effective benchmark for the costing of the PRSP components in the education sector.

A Latin American study of cost-effectiveness of primary education policies examined the impact of 40 possible primary school interventions on learning (as defined by the score on a standardized test given at the end of sixth grade), as well as the percentage probability of successful implementation.⁴ The latter is another critical element to policy design, as educational policies cannot be selected only on the premise of cost-effectiveness, but should also be assessed on the technical capacity required for their successful implementation and on the degree of political support available (see section 4.3 of the main chapter).

The results of this study are presented below and summarized in tables P.3 through P.5. While the impact of each intervention on student learning and its unit cost will obviously differ from one country to the next—this, in fact, could explain some of the differences observed in the measurement of cost-effectiveness in the study itself—the results do provide a useful framework that countries might want to consider when selecting the appropriate package of educational interventions for their PRSP. Although this is difficult, time-consuming, and costly, it is recommended that each country undertake a cost-effectiveness analysis of its proposed educational interventions.

From a list of 40 possible interventions, the study assessed six as having the highest estimated impact on the target population in terms of learning achievement, if fully implemented. This conclusion was made without taking into account the unit cost of the interventions. The six interventions are defined in table P.3.

Taking into account implementation capacity based on technical and political considerations, the study produced a slightly different list of the six most effective interventions (table P.4). It is worth noting that in this new scenario, both preschooling and decentralization were considered so difficult to implement that they fell out of the prior list of the best six interventions.

Finally, taking into account the highest impact on learning achievement, implementation feasibility, and unit cost, a final list of six interventions emerged as being the most cost-effective (table P.5). As expected, this last list is quite different from the first two, due to the inclusion among the list of 40 interventions of a number of almost no-cost interventions that have at least some impact.

Table P.3

<i>Interventions with highest estimated impact if fully implemented</i>	<i>Expected increase in test score</i>
Multiple interventions: (1) learning packages, (2) school-based management, (3) training, (4) testing	26.8%
Assign best teachers to first grade	19.8%
Decentralization with supervision	19.4%
Pay rural teachers 50 percent more	18.6%
Provide standard textbooks and train teachers in usage	18.4%
Developmentally oriented preschooling (100 percent of primary school cost)	18.3%

Table P.4

<i>Interventions with highest estimated impact taking into account implementation feasibility</i>	<i>Probable increase in test score</i>
Provide standard textbooks and train teachers in usage	12.1%
Multiple interventions: (1) learning packages, (2) school-based management, (3) training, (4) testing	12.1%
Pay rural teachers 50 percent more	12.1%
Provide learning materials for individualized instruction	12.0%
Assign best teachers to first grade	19.8%
Extend daily schedule by one hour	11.4%

The authors of the study reached a set of recommendations with regard to the cost-effectiveness of educational interventions. These are as follows:

- 3) Undertake interventions with a significant impact, especially those related to multiple interventions, teaching materials, and differential support for rural education, even if they are of moderate to high cost. In spite of their cost, these interventions should be implemented because of their potential high impact. But be aware of implementation problems.
- 3) Undertake interventions that do not cost much but which have an impact and are often overlooked, such as enforcing school year regulations or assigning good teachers to the first grade.
- 3) Some interventions are expensive and, by themselves, without ancillary activities or other objectives, are not good investments. This is especially true in the case of increased salaries, computers, and school feeding programs.
- 3) Implement packages of interventions rather than isolated interventions.

Table P.5

<i>Interventions with highest expected cost-effectiveness</i>	<i>Cost-effectiveness score</i>
Assign best teachers to first grade	1,531.2
Enforce regulations on official length of school year	699.6
Policy not to switch classroom teachers during school year	480.0
Test 10 percent of fourth graders and distribute results to teachers	60.3
Decentralization (without strengthening supervision)	59.2
Media campaigns for parents to read to children	59.2

Notes

1. Despite the fact that those who reach secondary and tertiary education tend to come from well-to-do homes, government subsidies at these levels tend to be higher than in primary education, if only because unit costs are higher.
2. Recent examples include the Third International Mathematics and Science Survey (TIMSS), the Southern African Consortium for the Measurement of Educational Quality (SACMEQ), a UNESCO assessment of learning in Latin America, and the CONFEMEN assessment of learning in francophone Africa.
3. Compiled by Norman Laroque, Ayesha Vawda, and Harry Patrinos, November 1999.
4. Schiefelbein, E., L. Wolff, and Pauline Schiefelbein. 1999, August. "Cost-Effectiveness of Primary Education Policies in Latin America: A Survey of Expert Opinion." *The Major Project of Education*. Bulletin 49. Santiago, Chile: OREALC Publications.

Annex Q

Energy: Technical Note

Technical Note Q.1 Draft Guidance Country Note on Energy for the PRSP

The purpose of this volume, and this chapter, is to assist countries in the preparation of poverty reduction strategies. Following a consultative and participatory process, countries articulate these strategies in a Poverty Reduction Strategy Paper (PRSP). An Energy Note should be prepared for input into the PRSP process.

The Energy Note should:

- Identify the energy sector and identify energy service linkages to the priority poverty reduction strategies of the country.
- Propose energy sector goals and strategies to achieve them, and establish quantifiable indicators to measure progress in achieving those goals.

By way of example, table Q.2 illustrates these for a particular country in Sub-Saharan Africa.

Table Q.1. Assessing Energy-Poverty Linkages in the PRSP—Example for Country X

<i>Priority Poverty Reduction Objectives and Policies</i> (derived from the PRSP)	<i>Extent</i>	<i>Complementarity of Energy to Poverty Reduction Strategies</i> <i>Linkage and Rationale</i>
1. Poverty Reduction Broad Strategy		
Growth	High	Plans to expand manufacturing for exports are partly dependent on reliable energy supply Modern lighting that extends the working day, and partial mechanization can boost output and improve productivity Energy is needed for mechanical lift irrigation, for operation of minidairies, and for postharvest processing and marketing of some crops
<ul style="list-style-type: none"> ➤ Raise annual growth to 6 percent ➤ Ensure more equitable income and assets <p><i>Notes</i> Manufacturing (handicraft) is an important nonfarm business for the rural poor in country X Agriculture diversification is essential to growth in country X</p>		
Food security	High	Energy services to ensure a cold chain can improve productivity of dairying and boost consumption of milk products Plans for increased commercial farming will benefit from inputs like refrigeration and storage
<ul style="list-style-type: none"> ➤ Reduction of chronic and transitory food insecurity ➤ Increase agriculture production and the productivity of commercial farming <p><i>Notes</i> Country X's agriculture production system is largely rainfed and subject to periodic droughts, which lead to large variability in annual food output</p>		
2. Social Sector Development		
Education	Low	Modern lighting in the home that is accessible to all household members has strong correlation with improved literacy Energy services are needed in basic health care (to operate diagnostic equipment, for lighting, and for vaccine preservation) Energy is needed for expanded use of water from boreholes
<ul style="list-style-type: none"> ➤ Reduce illiteracy ➤ Improve teaching and learning in schools 		
Health	High	
<ul style="list-style-type: none"> ➤ Improve primary health services ➤ Improve water supply and sanitation services <p><i>Notes</i> In country X's drought-prone conditions, 65 percent of the population relies on rainfed water collection</p>		

(Table continues on the following page.)

Table Q.1. Assessing Energy-Poverty Linkages in the PRSP—Example for Country X (continued)

Priority Poverty Reduction Objectives and Policies (derived from the PRSP)	Extent	Complementarity of Energy to Poverty Reduction Strategies Linkage and Rationale
2. Social Sector Development (continued)		
Gender <ul style="list-style-type: none"> ➤ Mainstream gender issues in all government policies 	Medium	Women disproportionately bear the burden of gathering biomass fuels for cooking, and disproportionately bear the health and safety impacts of gathering and using these fuels. The opportunity costs to women are in terms of lost education, leisure, and productive activity because of time spent collecting, processing, and using these traditional fuels. Similarly, inadequate water supply (the result, in part, of inadequate energy supply) results in women having to carry containers of potable water long distances. The lack of farm mechanization results in women having to labor long hours in the fields
3. Economic Management		
Fiscal policy <ul style="list-style-type: none"> ➤ Promote macroeconomic stability and reduce size of government 	High	Borrowing for infrastructure investment by energy utilities in country X (specifically by the electricity utility) is directly incurred by the government. The electricity utility is unable to service its debts, placing the burden on the government budget. Reforms are needed to minimize the build-up of these public liabilities Direct taxes on energy enterprises and indirect taxes on energy commodities could provide an excellent tax base. However, taxes on fuels used by the poor should not be regressive
Expenditure policy <ul style="list-style-type: none"> ➤ Reduce total expenditure while reorienting the structure toward social sectors 	High	Direct budgetary support for the sector could squeeze out resources available for social investment Well-designed mechanisms that subsidize connection costs of energy access or equipment can be pro-poor
4. Private Sector Development		
Industry sector and investment promotion <ul style="list-style-type: none"> ➤ Manufacturing for exports; product diversification, and so forth 	High	The investment attractiveness of country X for export manufacturing will be influenced by the reliable supply of energy services Competition in the energy sector by allowing the entry of new, nonutility service providers can meet the energy needs of rural trading centers Rule-based economic regulation of the energy sector leads to increased investment by encouraging business confidence
Competition and consumer protection <ul style="list-style-type: none"> ➤ Increase efficiency and broaden ownership base by privatizing public enterprises 		
5. Natural Resources and the Environment		
Encourage comanagement of forest and forest resources and foster ownership	High	Wood is virtually the only cooking fuel in rural areas. Sustainable markets for fuelwood exploitation are implicit in sustainable forest management. Use of charcoal and improved stoves with chimneys for cooking and heating also has an impact on the sustainability of fuelwood exploitation

Table Q.2. Proposed Energy Sector Goals, Strategies, and Indicators—Example for Country X

Energy Sector Goals	Monitoring Indicators	Potential Energy Strategies
<p>Expand access (aggressively increase the availability and affordability of energy services)</p> <p><u>Notes</u></p> <ol style="list-style-type: none"> 1. Firewood is virtually the only cooking fuel in rural areas (85 percent of population) 2. 95 percent of households do not consume any electricity 3. Analysis of data from the proposed energy survey will help refine the access indicators (for example, by relating them to the poverty line determined in the Poverty Profile and to women's roles in the supply and use of energy) 4. Population growth rates exceed the rate at which households are being connected to grid-supplied electricity 5. The electricity tariff structure is such that it provides an incentive for the urban nonpoor to cook with electricity 	<p>Availability</p> <p><u>Cookstoves</u></p> <ul style="list-style-type: none"> ⊃ Ownership of improved cookstove increases from ___ to ___ of households <p><u>Electricity</u></p> <ul style="list-style-type: none"> ⊃ Increase in number of low-voltage points/transformers from ___ to ___ (by district) <p><u>Kerosene</u></p> <ul style="list-style-type: none"> ⊃ Increase in kerosene retail outlets from ___ to ___ (by district) <p>Affordability</p> <p><u>Biomass</u></p> <ul style="list-style-type: none"> ⊃ The cost of an improved cookstove to be made affordable to the poorest households <p><u>Electricity connection costs</u></p> <ul style="list-style-type: none"> ⊃ Payments by new customers of the cost of a home connection spread over a longer period (that is, increased from the present 12 months to ___ years) <p><i>Data sources:</i> utility; regular quick surveys of vendors</p>	<ol style="list-style-type: none"> 1. Implement an efficient licensing process for private firms to enter into production and distribution of electricity—particularly independent suppliers in areas outside the present grid 2. Revise excessively onerous equipment standards that raise the cost of service provision 3. Identify energy-use equipment eligible for microcredit (for example, improved cookstoves) 4. Make the program of consumer credit that spreads the cost of a home electricity connection more attractive to potential customers 5. Revise the electricity tariff structure. Introduce a lifeline tariff 6. Tariffs on imported kerosene (for lighting) to be maintained at reasonable levels—that is, not taxed regressively 7. Policies for sustainable forest use
<p>Improve reliability</p> <p>Increase the dependability of supply of energy services to raise the productive end use of energy by firms and households</p> <p><u>Note</u></p> <p>The goal addresses the competitiveness of firms and impacts on rural nonfarm incomes</p>	<ul style="list-style-type: none"> ⊃ Unplanned outages of 66kV transmission line reduced from ___ to ___ hours/month ⊃ Production time lost in a sample of the largest manufacturing firms reduced from ___ to ___ hours per month ⊃ Unplanned low-voltage (distribution level) outages reduced (specific targets for each district) <p><i>Data sources:</i> utility; regular quick surveys of firms</p>	<ol style="list-style-type: none"> 1. Competitively bid O&M contracting for utility operations 2. Carry out a feasibility study to identify potential improvement in reliability through power imports or exchanges with neighboring countries 3. Establish mechanisms to utilize electricity from neighboring countries
<p>Achieve fiscal sustainability</p> <ul style="list-style-type: none"> ⊃ Reduce claim of the sector on the budget ⊃ Reduce fiscal risk due to the sector ⊃ Achieve cost recovery in electricity supply (eliminate energy subsidies to the nonpoor) <p><u>Note</u></p> <p>The electric utility is currently unable to service debt to government, implying annual net increase in energy sector share of government liabilities</p>	<p>Fiscal discipline for energy utilities</p> <p><u>Set sector targets for reduction in:</u></p> <ul style="list-style-type: none"> ⊃ Direct budget transfers ⊃ Government domestic borrowing ⊃ International borrowing <p><u>Private sector participation</u></p> <ul style="list-style-type: none"> ⊃ Private ownership of electricity supply and distribution (Yes/No) <p><u>Cost of use</u></p> <ul style="list-style-type: none"> ⊃ Nonsubsistence consumption of electricity (that is > 30 kWh/month) priced to recover full costs <p><u>Collection</u></p> <ul style="list-style-type: none"> ⊃ Reduce receivables from ___ to ___ days <p><i>Data sources:</i> utility; government accounts</p>	<ol style="list-style-type: none"> 1. Revise the electricity tariff structure to ensure cost recovery 2. Improve collection rate for electricity billing 3. Define an open/competitive market structure 4. License new entrants 5. Implement deregulation and establish separate regulator 6. Encourage private sector ownership

**Table Q.2. Proposed Energy Sector Goals, Strategies, and Indicators—Example for Country X
(continued)**

Energy Sector Goals	Monitoring Indicators	Potential Energy Strategies
<p>Improve governance Promote market-based mechanisms, formal oversight institutions, and processes that lead to efficient investment, production, and energy service delivery</p>	<p>⇒ Are tariff orders implemented following a rule-based process? (Yes/No)</p> <p>⇒ Are licenses awarded through a public process of competitive bidding? (Yes/No)</p> <p>⇒ Increase in number of independent suppliers from ___ to ___ (specific targets for each district)</p> <p><i>Data sources:</i> public records of regulator; regular rapid survey of firms; confidential complaints mechanism</p>	<p>1. Improve regulatory mechanism</p> <p>2. Implement an efficient licensing process for private firms to enter into production and distribution of electricity (with performance conditions and incentives to expand service)</p>
<p>Ensure environmental sustainability Ensure the sustainable supply and use of biomass fuels Ensure the sustainable development of hydroelectricity</p>	<p>Increase in ratio of households using improved cookstoves from ___ to ___ (specific targets for each district)</p> <p><i>Data sources:</i> household survey; annual rapid survey of charcoal supply</p>	<p>1. Empower communities to manage forest resources</p> <p>2. Promote the leasing of plantation areas for tree planting and management by the private sector</p> <p>3. Promote use of improved stoves in microcredit schemes</p>

Annex R

Transport: Technical Note and Case Studies

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Technical Note R.1 The Sustainable Livelihoods Approach

The sustainable livelihoods approach can be thought of as an organizing principle. It draws on and combines existing development methods, such as participatory and community-based development, sector-wide approaches, integrated rural development, public-sector reform, and decentralization. The sustainable livelihoods approach recognizes the diversity of development: diversity of livelihood goals or outcomes (for example, more income, better health, or reduced vulnerability), and diversity in the complex strategies that households adopt to meet these goals. The approach also recognizes that household activities are driven by priorities that arise in a context of vulnerability, and that household options are influenced by structures (such as the form and organization of government and the private sector) and processes (such as policies, laws, and existing institutions). The framework focuses on people’s strengths and assets and how these can convert into positive outcomes. It identifies 5 types of assets people may build on or draw upon: human, natural, physical, financial, and social capital.

The sustainable livelihoods framework has three analytical components.¹

- **Structural conditions** are fixed in the medium to long term and delineate the physical, economic, and political environment in which poor people live and work.
- **Capital assets** are the common property—for example, roads—and individually owned resources that poor people can draw on for their livelihoods.
- **Institutions and processes** are the institutions (local, regional, and national government, private sector firms, and NGOs) and the processes and social norms (legal, judicial, and customary and gender relations) that provide opportunities and constraints for poor people to use and accumulate assets.

The ways in which the three analytical components can be linked to transport are demonstrated in tables R.1, R.2, and R.3. Figure R.1 additionally shows how assets, including transport infrastructure and services, lie at the heart of the sustainable livelihoods framework. The structural conditions and the institutional conditions govern how people use assets in their livelihood strategies. Livelihood outcomes feed into livelihood assets as they enable poor people to build up their assets (for example, by using more

income to invest in physical or human capital). Alternatively, livelihood outcomes may degrade the asset base (for example, through unsustainable use of natural resources).

Table R.1. Linkages between Structural Conditions and Transport

<i>Structural Condition</i>	<i>Transport Link</i>
Geography	Sets transport conditions (for example, access by road, rail, waterway, or sea). Determines choice of transport infrastructure (for example, bridges, tunnels, rails, roads, or paths). Influences cost of improving transport infrastructure
Location	Distance of households from such destinations as community center, towns, capital, coast; roads/infrastructure
Seasonality	Maintenance costs of infrastructure, need for all-weather access roads, seasonal demand for transport services
Population density	Level of demand for transport services
Shocks	Vulnerability to natural and manmade disasters (for example, floods, famine, war, and disease). Sufficiency of transport infrastructure for access in emergency. Potential of transport infrastructure to raise vulnerability by exposing communities to risk (for example, HIV/AIDS)

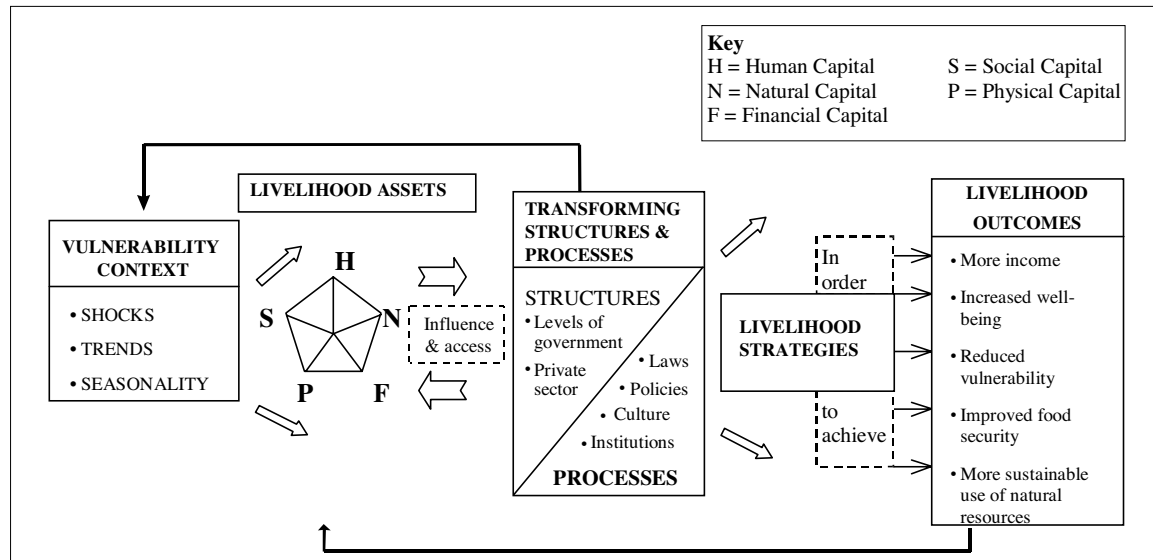
Table R.2. Linkages between Livelihood Assets and Transport

<i>Capital Asset</i>	<i>Transport Link</i>
Natural capital (natural-resource stocks from which resource flows useful for livelihoods are derived)	Developments may bring environmental degradation, ranging from air and noise pollution (urban) to slope instability and soil erosion (rural). Changes in land use and improved access can increase exploitation of local resources. Increased competition for land and resources
Social capital (social resources on which people draw in pursuit of livelihoods; for example, relationships and membership of networks)	Increased contact with other social groups. Access to information, technology, and new services. Lowers cost of social visits. Exposure to social problems (for example, alcohol and drugs)
Human capital (skills, knowledge, ability to work, and good health, which enable people to pursue different livelihood strategies)	Increased risk of road accidents, incapacitation or death, and loss of earnings. Formal and informal employment generation in construction, maintenance, and service industries. Improved access to health care, education, and extension services
Physical capital (basic infrastructure transport, shelter, water, energy and communications, production equipment)	Improved water, energy, and communications (telephone, radio, post office) service delivery. Seeds, fertilizer, machinery. Depends on quality of road versus benefits derived from improvements and affordability of transport services (especially by the poorest)
Financial capital (financial resources that provide livelihood options; for example, savings, credit, remittances, and pensions)	Reduced transport costs, travel times, and vehicle maintenance and operating costs, all of which increase labor productivity and decrease farm input costs and produce prices. Improved income and improved access to markets, credit, and savings facilities bolster financial capital

Table R.3. Linkages between Institutions and Processes and Transport

<i>Institution/Process</i>	<i>Transport Link</i>
Local government	Maintain responsibility for transport infrastructure at the district and local levels, linking communities to services, markets, and locations of political decisionmaking
National government	Maintain responsibility for national transport infrastructure network, linking community to cities, ports, and regional centers
Firms	Provide transport services, often in partnership with government; suppliers of infrastructure
NGOs	Carry out interventions to improve transport at the local level; for example, by promoting nonmotorized transport and planning community-based initiatives to meet locally defined transport needs
Laws	Regulate the provision of transport services, including public health and safety
Gender relations	Determine how transport assets and technologies are used (for example, whether it is acceptable for women to handle draught animals or use bicycles). Determine demand for mobility (for example, whether it is acceptable for women to travel outside the household and move freely in public)

Figure R.1. Livelihoods Framework



Source: Department for International Development (1999).

Case Studies

The case studies that follow illustrate the outcome and impact of transport interventions that have a direct effect on the poor. They also illustrate the operational tools used in each intervention that are replicable and may be of use in other countries.

Case Study R.1 Morocco—From Food Line to Lifeline: Surveys Find Predictable but also Unsuspected Impacts of Rural Roads

This case illustrates how improving basic transport accessibility can have a wide range of positive impacts, on transport, agriculture, education, and health. The case also highlights a well-designed impact assessment methodology.

Intervention. A rural-roads component of a major highway project (financed by the World Bank). A detailed impact study covered 4 roads, located in different geographic and climatic areas of the country, that were improved from a deteriorated gravel or track condition to an asphalt surface.

Objectives. The rural-road component aimed to alleviate rural poverty via improvements to the secondary and tertiary road network.

Rural transport and poverty. Although Morocco underwent a sustained urbanization process through the 1980s and 1990s, about 50 percent of Morocco's population remains rural. About 70 percent of the country's poor live in rural areas. Rural transport services are mostly provided by small trucks and by share-ride taxis.

Findings. The surveys found that by providing all-weather road access and by substantially lowering the cost of operation for motorized vehicles, the intervention helped farmers modernize their agriculture inputs with more fertilizers, insecticides, and mechanization, enabling them to produce higher-value outputs, such as perishable vegetables and fruits. These changes generated more on-farm as well as off-farm employment. As it became easier to recruit and retain staff and to move supplies, the all-weather road access also improved the quality of education and health. Women and girls benefited especially from the road improvements. Better roads made delivery of butane more affordable, reducing the need

for women to collect firewood and thus freeing up as much as 2 hours daily for them to earn income or pursue other activities and interests. Mechanization also provided women who previously labored in the wheat fields with more free time, opening up new opportunities, both work and nonwork. The new roads also made travel to schools safer, encouraging parents to send their daughters to school.

Impacts. The study found a wide range of impacts—a sample of these is listed below. The figures shown are values comparing the situation before and after the improvement. In all cases, the figures are higher in areas where the roads were improved than in the control areas where roads were not improved.

- **On transport.** Road closures, which ranged from 30 days to 90 days per year, were basically eliminated. Commercial trucking services' transport charges dropped, in some cases by as much as 50 percent. Traffic increased well beyond the national average—on one road, it increased fivefold as this road became a shortcut for long-distance traffic. The percentage of bigger, lower-operating-cost trucks on the project roads also increased fivefold. The quality and quantity of commercial rural transport services improved. For example, numerous affordable, high-frequency share-ride taxis went into business, supplementing an infrequent bus service.
- **On agriculture.** Agricultural yields increased—in the case of fruit orchards, by more than 30 percent. The production mix changed drastically, as land devoted to vegetables and fruit increased by between 8 percent and 40 percent. Use of fertilizers increased substantially, by 100 percent in one region. Use of extension services by small farms quadrupled.
- **On education and health.** Primary-school education enrollments reached 68 percent, compared with 28 percent prior to the improvements—despite the fact that among the poor the potential loss of children's labor or earnings is a key reason for keeping children out of school. The enrollment of girls in primary education more than trebled. Visits to hospitals and primary health care centers more than doubled.
- **On the environment.** Overall, no large impacts were observed because the road improvements did not involve new construction. There were negative changes, all related to increased traffic and economic activity: noise and air pollution and increased use of fertilizers and other chemicals. Positive impacts arose because people were able to substitute butane for fuelwood (demand for which exceeds supply from Morocco's sustainable forests) and because the agricultural output mix changed, curtailing the extensive goat and sheep herding that damaged the soil cover.

Lessons learned. The survey identified a wide range of impacts, some of which were unexpected. Impact survey methodologies must be stringent to determine cause and effect. Analyses used these methods:

- Preparation of an extensive list of hypotheses of possible effects of road improvements, and of data required to test the hypotheses. The hypotheses were divided into 4 major categories: (1) direct impact on transport infrastructure and services; (2) impact on the agricultural economy; (3) impact on education and health; and (4) impact on the environment.
- For each road, the impact study utilized 2 types of analyses: (1) "before and after" analysis, comparing conditions with those before the investments were made, and (2) "with and without" analysis, comparing conditions in the project road to a control road that did not benefit from improvements over the study period.
- Extensive socioeconomic surveys were conducted at the farm, regional, and village levels. Focus groups were carried out at the regional/local levels to help interpret the data.

Case Study R.2 Bangladesh—Integrating Rural Markets and Roads: Letting Local Communities Decide

This case illustrates how integrated rural infrastructure development can be designed to generate positive impacts on the transport system and on the rural economy, while making institutional improvements in the road agencies of direct relevance to the poor.

Intervention. Two projects, one closed and one ongoing, focusing on rural roads and rural markets, are financed by Switzerland, Germany, and the World Bank.

Objectives. In Bangladesh, rural infrastructure investment projects form part of a rural development strategy focused on rural growth centers. The growth centers are selected on the basis of their socioeconomic importance and potential. The project objectives supported this strategy through the reconstruction, upgrading, and maintenance of feeder roads and growth-center markets; the strengthening of rural

transport and market institutions; strong community and user participation in the planning, design, and implementation of road and market improvements; and the creation of employment and income-generating opportunities among the rural poor, particularly disadvantaged women.

Outcomes. By reducing the constraints on rural mobility and marketing, improvement of the rural roads and markets contributed to rural economic development and poverty reduction. The projects have encouraged the use of labor-intensive technologies and have provided poor women and men with jobs. The improved roads have provided the rural poor with much better access to market facilities, schools, health centers, and other social services. They have also reduced transport costs, reduced travel time, and increased revenues for the traders who use the improved markets.

The participatory approach used for the design, construction, and maintenance of rural roads created a deep sense of empowerment at all levels, since this process reached the smallest units of local and community governments. The economic opportunities opened by the projects reinforced the sense of empowerment. Women, in particular, benefited from this process. In the past, they had been barred from the market area, and were forced to sell their wares outside it, for lower prices. Now they overturned those bans, moving into the market itself to sell their products for full price.

Impacts.

- **On the transport system and services.** Traffic, motorized and nonmotorized, increased by 117 percent and 58 percent respectively after the roads were improved (2 or 3 times the average increase in traffic over Bangladesh’s road network). Cargo and passenger rickshaw pullers benefited financially because the higher traffic meant higher demand and income, and the smooth roads reduced the physical effort needed to propel the rickshaws. The number of buses and small trucks providing passenger and cargo services rose significantly in rural communities along the improved roads. The construction of culverts greatly improved accessibility by reducing the periods when roads were not passable.
- **On the rural economy.** The clean environment in the improved growth-center markets substantially reduced spoilage of produce and quality deterioration. (The economic return of market improvement investments is estimated at 22 percent.) The number of sellers in 10 sample markets increased by an average of 26 percent after improvement of the markets, although a part of this increase probably came from transfers from other markets to the more efficient, improved ones. The number of permanent shops around the improved markets has increased by an average of 13 percent per annum. Construction and maintenance of infrastructure created 18,600 jobs (Project 1). Women entered the road-maintenance job market (including tree planting) where they made US\$0.80 per day, compared with salaries of US\$0.35 as maidservants.
- **Institutional building in the road agencies of direct relevance to poor groups.** A socioeconomic monitoring and evaluation unit was created within the local government engineering department to monitor access to health and education and other important impacts. A national geographic information system was established for mapping purposes.

Key participatory features. In the ongoing project (Project 2), users participated in the selection, design, and implementation of all subprojects. The first step was an information dissemination and publicity campaign briefing local government (Union Parishads, or UP) representatives on:

- the nature of the participatory approach
- the roles of the UP in the process
- procedures and conditions for subproject proposals
- local financing contribution
- UP commitment for monitoring and maintenance

The information campaign made special efforts to reach residents of different wards (at the subunion level, comprising a few villages), village leaders, and organized groups. Ward meetings were organized to discuss subproject proposals. Decisions were made at a public meeting through a voting system that permitted representatives of each ward to vote for up to 3 proposals. In the meantime, the community raised a deposit on its required contribution (10 percent of the cost of the works). During implementation, periodic meetings were held among the UP, monitoring committees, and public works staff to discuss progress, problems, and actions required. A special feature of the rural markets was planning sessions held at proposed sites. About 100 stakeholders attended one such session, among them representatives of the UP, the market management committee, sellers and buyers of produce, shopkeepers, vehicle operators, and women representing sellers and workers.

During implementation, the community monitored contractors. Contractors were required to post signs describing the works, the cost, and the delivery date. Staffing of the projects included 99 community organizers (2 female), 15 district sociologists, and 2 NGOs to provide training.

Case Study R.3 India (Andhra Pradesh)—Appraising a Rural Access Road Program: Going Beyond Costs-Benefits Analysis

This case illustrates how a participatory approach and other practical tools can be used to supplement conventional road-project appraisal methodology in the design of a rural basic-access road project.

Intervention. This project is a rural-roads component of a larger project—the Andhra Pradesh Economic Restructuring Project—funded by the World Bank. The project is a pilot program being implemented in 3 selected poor rural districts: Adilabad, Karimnagar, and Warangal. It finances the civil works that will improve the rural access road network in the 3 districts to at least basic, all-weather motorable condition.

Objectives. The project's development objectives are to better the rural population's quality of life and to promote rural economic growth by improving the rural-road network, particularly by providing basic, reliable, all-weather road access to villages that currently do not have such access.

Adopting a participatory approach. A participatory approach proved useful in addressing policy issues and in designing and appraising the project. The participatory process comprised several workshops. At the initial stage of project preparation, a 2-day objectives-oriented consultation workshop was held with the participation of state and district governments and transport operators. Through the workshop, rural-road problems were identified and analyzed, project objectives discussed and prioritized, an overall description of the project established, and the rural-road policy framework formulated. As the project preparation advanced, district-level workshops were held in each of 3 districts to discuss and formulate the district-level investment program. The detailed scope of the project was defined through additional workshops held with government officials and technical staff from both the state and the districts.

The participatory process proposed a rural-road policy framework that emphasizes the importance of basic access and the need for any road upgrading to blacktop standard to economically justify itself. (Basic road accessibility in Andhra Pradesh is defined as basic, all-weather motorable access to villages; brief interruptions are seen as acceptable during heavy rains.) Stakeholders decided that bringing the core network to all-weather standard would have priority over upgrading individual links to blacktop standard. Road works related to the provision of basic access will be assigned priority according to cost per population served. Any additional investment beyond basic accessibility, such as blacktopping or construction of new links, will be subject to cost-benefit analysis and must meet the minimum economic rate of return (ERR) of 12 percent. The policy framework also emphasized the allocation of adequate funding for maintenance of the core network through the state-level rural-road maintenance budget,² and introduced district-based annual maintenance plans and a technical audit to verify the outcome of planned implementation. So far, the participatory process has been successful. The policy framework was passed as a state decree in December 1998 and has been adopted by the government of Andhra Pradesh throughout the state.

Selecting road works for financing. The program adopted a rural-road master planning process that chose, from a large number of rural roads in the project area, a core network that would provide the basic minimum road connectivity between villages and market centers. This involved looking at all the alternative routes connecting each village to a nearby main road, and selecting each village's best available connection. The process required careful consideration of several factors: the existing road network, location of markets, topography, and local travel patterns. Through this process, a core network comprising 700 individual links and totaling 9,000 kilometers (of a total rural network of 15,000 kilometers) was identified in the 3 districts.

The next step was to determine the type of improvement required so that each road in the core network would achieve the basic all-weather standard. Local engineers conducted a detailed road inventory and condition survey for the entire core network to establish the following data for each road: road name, road type, length, overall condition, jurisdiction, population served, number of bridges and cross-drainage facilities, passability during the rainy season, and current level of traffic. Once the road-condition data and relevant engineering cost data had been compiled, the various options for the work required to bring each road to standard were assessed. The resulting least-cost solution was then proposed for consideration of project financing. When roads had traffic levels that met an economically justifiable threshold, paving works were also proposed.

Most of the road works needed to bring a road up to the basic-access standard involved spot improvements, such as graveling, constructing cross-drainage structures, or placing one layer of water-bound macadam on sections of roads in poor surface condition. The necessary improvements were ranked for cost-effectiveness according to the number of people served per dollar of investment required to bring the road up to basic-access standard. District-level participatory stakeholder workshops selected for improvement 3,000 kilometers of road out of the core network (about 1,000 kilometers in each district). Based on the available funds, a maximum amount of US\$50 per person was identified as the threshold: above that, road works would not be financed.

From the 3,000 kilometers of roads identified, the district workshops also produced a wish list of roads with substantial traffic to be upgraded to bituminous standard. These roads were evaluated by a simple cost-benefit analysis method and were screened using the estimated economic rate of return. Roads with low ERR would not be considered for upgrading under the project.

About 1,700 kilometers of rural roads were finally selected for improvement to basic accessibility standard, with a cost-effectiveness ratio ranging from US\$14 to US\$50 equivalent outlay per person served. An additional 1,300 kilometers of roads were selected for blacktopping. The ERR of these roads ranged from 12 to 90 percent, with an overall ERR of 24 percent. A total of 2 million rural people are expected to benefit from the project.

Lessons learned.

- The participatory process for setting investment priorities and developing a policy framework was crucial to achieve a systematic approach to the investment and management of rural roads.
- Comprehensive master plans for rural-road network planning developed at the local government level are the ideal tool to increase the effectiveness of rural-road investment.
- A cost-effectiveness method combined with a least-cost engineering solution is a useful tool for designing, assessing, and selecting basic-accessibility road works.

Case Study R.4 Kenya and Tanzania—Sidewalks and Bicycle Paths Benefit Poor People

This case illustrates how low-cost measures can benefit pedestrians and cyclists by enhancing traffic safety and improving access to income-earning opportunities

Intervention. An experimental program implemented small-scale pilot projects on urban mobility and nonmotorized transport in 4 towns in Kenya (Eldoret and Nairobi) and Tanzania (Dar es Salaam and Morogoro) between 1995 and 1999. The projects were financed by a Dutch trust fund as part of the Sub-Saharan Africa Transport Policy program.

Objectives. The aim was to test various engineering solutions in favor of pedestrians and cyclists in African cities, and to develop local capacity to plan and implement low-cost mobility improvements.

Urban poor and low-cost mobility. In Kenya and Tanzania the urban poor travel predominantly on foot, but bicycle usage also is significant in small and medium-sized towns. Pedestrians and cyclists are particularly at risk as potential traffic-accident victims.

Findings. The low-cost infrastructure improvements succeeded in increasing traffic safety for pedestrian and cyclists. Safe cycle paths favored both passenger and goods transport. New pedestrian walkways also stimulated the creation of small informal retail activities, thus favoring economic growth.

Local participation in the planning and implementation stages of the pilot projects demonstrated to municipal executives and technical staff the importance of sidewalks and bicycle paths for safety and for low-cost mobility for poor people.

Impacts.

- **On traffic safety.** In Temeke ward, a poor area of Dar es Salaam, a set of traffic-calming measures, including raised pedestrian crossings, bus bays, realigned streets, and bollards to protect sidewalks, resulted in a tenfold reduction of traffic accidents along a 2-kilometer section of collector road. There are 3 main explanations: (1) the measures have virtually eliminated high vehicle speeds (exceeding 50 km/h); (2) newly added, frequent safe-crossing spots (requiring vehicle speeds under 25 km/h) now protect vulnerable pedestrians; and (3) informal bus traffic in the vi-

cinity is now significantly more disciplined—the buses usually make predictable stops at new bus bays.

- ③ *On walking speed.* The provision of flat, unobstructed, straight pedestrian walkways or tracks resulted in significantly increased walking speed.
- ③ *On use of nonmotorized transport.* In Eldoret, infrastructure improvements between the town center and a peripheral poor residential area included both traffic-calming measures on a collector road and a new pedestrian causeway on an alternative route. The combined improvements resulted in an increase of 3 percent in pedestrian traffic and of 30 percent in bicycle traffic.
- ③ *On access to nonmotorized vehicles.* In Eldoret, a microeconomic-financing pilot scheme successfully financed the purchase of 300 bicycles for employees of a local industrial firm, at a total cost of US\$22,000 (US\$73 per bicycle). The program subsidized about 10 percent of the purchase cost. Key to the success was the existence of a saving cooperative in the firm.
- ③ *On retail activities.* The improvement of pedestrian walkways in Eldoret resulted in a significant increase in informal retail activities.
- ③ *On user participation.* User participation varied from the highly successful involvement of users in Dar es Salaam to complete failure in Nairobi. In Nairobi, the process of selecting a user group lacked transparency, and the user group lost trust in the program (in large part because they had come to believe that money had been set aside to pay them). In Dar es Salaam, 2 dynamic women led the participatory process and gained the trust of residents. The experience acquired in these pilots led to the establishment of guidelines for user participation.

Lessons learned. User participation, when properly organized, can help plan and implement efficient infrastructure for pedestrians or cyclists. Key lessons from the participatory programs were:

- ③ Develop mutual trust between the initiating team and all participants
- ③ Implement at least some of the prioritized interventions
- ③ Make clear to members of user groups that there is no financial reward for their participation
- ③ Open all information, priorities, and actions to all stakeholders.
- ③ Organize national seminars to inform stakeholders of the efficiency of low-cost infrastructure interventions that favor urban, nonmotorized travelers.

Case Study R.5 India (Tamil Nadu)—Bicycles, Women’s Literacy, and Empowerment

This case study assesses the impact on women’s lives of the introduction of bicycles as part of a literacy campaign in the Pudukkottai region of Tamil Nadu State in India. The study shows that over a period of 5 years, it has become widely accepted that women can ride bicycles. Bicycles are now used to enhance economic activities, to reduce the burden of transporting water and fuel, to transport the sick, and to increase general mobility. Focus groups revealed that bicycles have contributed to the independence and empowerment of women. This was true even though, in many cases, bicycle use was controlled by male household members.

Intervention. The introduction of bicycles and bicycle-riding skills as part of a women’s literacy campaign by the National Literacy Mission in the early 1990s in Tamil Nadu.

Objectives. To increase women’s mobility, through cycling, so they may take advantage of the literacy campaign. The initial campaign enlisted the help of men to teach women how to bicycle. Loans were made available for women to buy bicycles. Women with a regular income (such as NGO extension workers and childcare workers) were quick to take these up. As more women were seen regularly cycling, the opposition and the male jokes died away. Bicycling became acceptable, then a widespread movement.

Impact assessment methodology. The impact study relied on key informant interviews, a focus group discussion, and a village survey. Forty-nine women were interviewed in 12 villages. Out of these 49, only 3 did not know how to ride a bicycle. Most of the women were Scheduled and Backward caste women, half of them barely literate and the others educated up to middle school. They earned their living through their labor. They were mostly between 20 and 30 years old, and had a heavy workload, with children and families to care for in addition to their income-earning activities.

Impacts.

- **On women's self-esteem.** The women reported how taking a sick relative or child to hospital themselves on the bicycle gave them a feeling of independence, and of being a useful member of society. The motivation to learn among the women who do not yet know how to bicycle is high.
- **On control of bicycles and women's access in a male-dominated culture.** Only 4 out of the sample of 49 women actually owned their own bicycle. While access to bicycles for women now seems widespread, what is more problematic is the issue of control. Most women are dependent on others for the use of a bicycle, and have to adjust their work according to the needs of the bicycle owner—usually a man who exercises priority over its use. A related problem was that, while bicycles greatly reduce the time and labor women expend on several essential household tasks, men do not attach high priority to these unpaid tasks. Women also said the distance to the bicycle-hire shop was a problem.
- **On the economy.** With the greater acceptance of cycling, the profitability of bicycle shops has increased. A bicycle shop is now seen as a facility every village should have.
- **On gender relations.** In more than two-thirds of the sample, women's cycling does not seem to have significantly changed gender relations in the household. Large numbers of girls now cycle to school every day in Pudukkottai, suggesting there will be even higher bicycle use in the next generation. But bicycles have actually increased the workloads of almost 40 percent of the women interviewed. Tasks that the men would do before, such as marketing, taking the children to school, or running errands, have all now shifted to women. Bicycles do, however, help women complete their jobs faster and more easily. Despite their extra burdens, these women report having more time for leisure.
- **On expanding the functions of bicycles.** The study found that all women who had access to bicycles, whether their own or that of a husband, father, or brother, came to use them for a broad range of tasks related to all areas of their responsibilities. The most common uses were fetching water from the well or tank, taking paddy to the rice mill, collecting fuel and fodder, going to the hospital in an emergency, and, for younger girls, going to school. A few use the bicycle for productive work, such as selling flowers in the market, purchasing and selling gems, and caring for plants in a government nursery.

A bicycle is now common property in most rural homes of Pudukkottai. A door-to-door survey of 50 households found that two-thirds owned a bicycle. Almost all men asked knew how to cycle, as did one-third out of 100 women. Cycling is now generally viewed as a cheap and efficient means of transport, particularly for women in low-access villages distant from essential services.

Source: Nitya Rao, 1999: "Cycling into the Future: The Experience of Women in Pudukkottai, Tamil Nadu." (Case study presented at the International Forum for Rural Transport and Development (IFRTD) workshop in Sri Lanka. June 1999.)

See also the case study section of the World Bank Gender and Transport Web site: <http://www.worldbank.org/gender/transport>.

Case Study R.6 Brazil—Paving Roads in Poor Urban Areas

Road investments to improve the public transport on which poor people depend can be both economically and politically attractive. However, this case also illustrates that such investments require careful preparation, as well as support and flexibility in implementation.

Intervention. The third Brazil Urban Transport Project included a \$63 million component—Programa da pavimentação, PROPAV—to pave 500 kilometers of bus route in low-income areas between 1981 and 1984. A central government agency was responsible for selecting the roads and supervising the execution of the project. It would later embody its experience in a revision of the existing manual for low-cost paving. The project extensively used local labor and local materials.

Objectives. The first Brazil Urban Transport Project included an extensive program of paving in low-income areas. Under this project, design agencies produced designs for drainage and basic pavement structures that were excessively elaborate. The result was serious cost and time overruns. As a consequence, *Empresa Metropolitana de Transportes Urbanos* in Sao Paulo undertook a comprehensive study of low-cost paving, producing a manual about low-cost paving and an economic feasibility study. In parallel, the central government agency responsible for road selection and supervision commissioned a study of regional experiences in low-cost paving, concluding that the benefits from an extensive bus-

route paving program would be substantial and establishing guidelines for the selection of roads in a paving program.

The importance of public transport to the urban poor. Bus transport (generally by private operators) is the dominant form of public transport in all Brazilian cities. In low-income city areas, many unpaved roads are impassable in wet weather—a serious impediment to the access of buses and emergency vehicles. In Sao Paulo alone, there were 800 kilometers of unpaved bus route in the early 1980s.

Findings. The economic rate of return on the individual projects exceeded 11 percent in 93 percent of cases and more than 40 percent in 27 percent of the schemes. The costs were much lower than anticipated, averaging only US\$40,000 per kilometer—the estimate had predicted US\$150,000. Costs were held down because planners used local materials and because they deferred to local judgment on appropriate design and on the selection of projects. The program was in the end so successful that it was extended to more than 1,000 kilometers in 146 cities, not all Bank financed.

Impacts. Bus operating costs were substantially reduced by the program, and passenger comfort increased. The program also made it possible to introduce bus services in poor areas that had hitherto been inaccessible to formal public transport. Similar programs were launched in Chile, Jamaica, Peru, and Mexico. Impassability due to rain was not a problem in some of those cases, allowing the use of even simpler surfacing techniques. Subsequent savings allowed coverage to extend to roads outside the original program. The most recent developments include local community participation in the selection of road segments for inclusion in a project in Lima, Peru.

Lessons learned.

- ⊃ The successful implementation of the program in many small cities owed much to the strong central technical support provided in the form of a design and appraisal manual.
- ⊃ While design guides are important, they should be flexible. Detailed local involvement in project selection and design, together with the use of local materials, can increase the cost effectiveness of relatively small-scale local road investments.
- ⊃ A programmatic approach, in which neither the physical schemes nor their locations are defined at the outset, can contribute to effective project selection and design, so long as it is done in the context of clear guidelines and evaluation criteria.
- ⊃ Since municipal administrations will eventually have to assume the debt liabilities for transport infrastructure and for maintenance expenditures from municipal revenues, it is desirable that such projects attend to the financial health of the beneficiary municipalities. It may therefore be more cost effective to incorporate such projects in municipal development projects, rather than as independent urban transport projects

Case Study R.7 Kazakhstan—Urban Public Transport Reform Serving Poor Users

This case illustrates how public transport deregulation and liberalization improved public transport service availability and affordability to poor groups, and how these reforms provided entrepreneurial and employment opportunities for poor people. It also shows how the government was able to reallocate subsidies from public transport to other social services.

Intervention. The policy and institutional reforms component of a World Bank-financed urban-transport project to liberalize the urban public transport system in order to improve the efficiency of the system and provide adequate and affordable services.

Objectives. To restore and improve public transport capacity, performance, and services to the travelling public in Kazakhstan's major cities, in part by designing and implementing institutional and policy reforms.

Urban transport and poverty. Public transport is an important economic and social service in Kazakhstan and other former Soviet Union countries. Ninety percent of Kazakhs, many of whom are poor, rely on public transport services to reach employment centers and educational and health facilities. Without an adequate and affordable public transport service, many people would be unable to hold jobs, go to school, or visit health facilities.

The urban-transport project was approved when Kazakhstan was undergoing a transition to a liberalized market economy underpinned by a system of private ownership. The rationale for the project was to mitigate the effect of the prevailing adverse macroeconomic conditions on the performance of the public transport system. Before the reforms took place, the public transport system was characterized by inadequate services; long waiting times, often in severe weather conditions; crowded buses; and large government subsidies.

Impacts. The deregulation and liberalization of the public transport system in Kazakhstan had 3 distinct benefits for the poor and for the travelling public in general:

- ***Adequate and affordable services for the poor.*** The main beneficiaries of deregulation were the members of the travelling public, who were given affordable service of acceptable quality. Overcrowded buses and long delays at bus stops were virtually eliminated. The service network expanded to permeate the cities, so that it was within a short walk of almost all users.
- ***Reallocation of government subsidies for social services.*** The government was relieved of the need to subsidize public transport services, enabling the reallocation of scarce resources to other social services to benefit the poor.
- ***Entrepreneurial and employment opportunities for the poor.*** After decades of central planning and service provision by state-owned corporations, the public transport sector became an entry point for many aspiring small entrepreneurs. Many people who became unemployed or underemployed because of the transition to a market democracy found new employment and business opportunities in the liberalized public transport industry.

Lessons learned. Policy and institutional reforms capable of unleashing private entrepreneurship and competition can improve the quality and quantity of services available to the poor.

Notes

1. This summary of the sustainable livelihoods approach derives from ODI (2000), prepared for the World Bank and the Department for International Development (DFID), U.K.
2. Funding for the maintenance of noncore roads is mostly from the central government and is channeled directly to the community through various poverty alleviation and employment generation programs. The policy framework encourages the creation of community road associations for the management of noncore community roads.

Annex S

Water and Sanitation: Technical Notes

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Technical Note S.1 Global Indicators on Access to Safe Water and Adequate Sanitation

	Year	Population with access to safe water (%)		Population with access to adequate sanitation (%)	
		Urban	Rural	Urban	Rural
Afghanistan	1989-90	38	17	2	0.3
Albania	1994	97	70	97	10
Algeria	1986-88	86	55	...	...
Angola	1990-95	69	15	71	4
Argentina	1995	71	24	80	42
Austria	1989-90	...	...	100	100
Azerbaijan	1991-93	...	...	67	0.1
Bahamas	1995	95	86	100	100
Bahrain	1996	100	100	100	100
Bangladesh	1995	49	96	41	36
Belgium	1989-90	100 ^a	91 ^a	100	100
Benin	1995	82	69	60	11
Bhutan	1995	54 ^b	26 ^b	90	70
Bolivia	1995	88	43	77	39
Bosnia and Herzegovina	1991-93	...	...	71	12
Botswana	1995	100	77	91	41
Brazil	1995	80	28	74	43
Brunei Darussalam	1991-93	100	92	71	51
Bulgaria	1989-90	...	...	100	96
Burkina Faso	1986-88	50	26	38	5
Burundi	1991-93	97	55	71	47
Cambodia	1995	20	12	...	...
Cameroon	1996	...	30	73 ^b	21 ^b
Cape Verde	1989-90	75	34	42	10
Central African Rep.	1994	20	25	...	...
Chad	1994	48	17	74	7
Chile	1995	99	47	95	...
China ^c	1995	...	...	68	16
Colombia	1995	90	32	70	27
Comoros	1996	74	41	40	16
Congo	1995	...	11	15 ^b	4 ^b
Costa Rica	1995	100	99	100	95
Croatia	1995	75	41	71	26
Cuba	1995	98	72	92	74
Cyprus	1996	100	99	100	100
Dem. Rep. of the Congo	1995	89	26	53	6
Djibouti	1989-90	26	14	94	50
Dominican Republic	1995	88	55	89	68
Ecuador	1995	81	10	70	26
Egypt	1996	95	74	95	49
El Salvador	1995	82	24	89	65
Equatorial Guinea	1996	41	31	...	40
Eritrea	1996	...	...	12	0.3
Finland	1995	100 ^b	85 ^b	100	100
France	1989-90	...	...	100	90
Gabon	1991-93	80	30	79	67
Gambia, The	1991-93	64	39	99 ^d	79 ^d
Ghana	1996	88	52	75	...
Greece	1989-90	...	...	100	94
Guatemala	1995	97	48	91	50

	Year	Population with access to safe water (%)		Population with access to adequate sanitation (%)	
		Urban	Rural	Urban	Rural
Guinea	1995	55	44	24	10
Guinea-Bissau	1990-95	38	57	32	17
Guyana	1991-93	100	75	87	30
Haiti	1995	38	39	43	16
Honduras	1995	91	66	91	71
Hungary	1989-90	...	...	100	85
Iceland	1995	100	100	100	100
India	1995	...	82	...	4
Indonesia	1995	87	57	88	61
Iran	1995	98	82	86	74
Iraq	1994	92	44	85	37
Ireland	1989-90	...	...	100	100
Israel	1995	100	95	100	99
Italy	1989-90	...	...	100	100
Jamaica	1995	92 ^b	48 ^b	99	...
Kiribati	1996	70	80	83	45
Korea, Dem. People's Rep.	1995	100	100	100	100
Korea, Republic of	1995	93	77	100	100
Kuwait	1995	100	100	100	100
Kyrgyzstan	1991-93	93	42	87	31
Latvia	1994	92	...	90	...
Lesotho	1995	64	60	76	32
Liberia	1986-88	50	25	...	...
Libyan Arab Jamahiriya	1995	90	91	90	75
Luxembourg	1989-90	...	...	100	100
Madagascar	1991-93	54	4	64	25
Malawi	1996	97	52	94	61
Malaysia	1995	100	86	94	66
Maldives	1995	94	78	98	26
Mali	1996	56 ^e	20 ^e	61	22
Malta	1989-90	100 ^a	...	100	100
Marshall Islands	1991-93	100 ^d	33 ^d	88	57
Mauritania	1996	86	41	44	19
Mauritius	1989-90	100	95	100	100
Mexico	1995	90 ^b	66 ^b	93	29
Monaco	1995	100	...	100	...
Mongolia	1996	100	68	100	54
Morocco	1995	97	20	97	39
Mozambique	1994	...	40	68	...
Myanmar	1995-96	78	50	56	36
Namibia	1991-93	62	45	78	37
Nepal	1996	61	59	74	18
New Zealand	1986-88	...	...	100	...
Nicaragua	1995	93	28	88	28
Niger	1997	70	44	79	5
Nigeria	1995	80	39	82	48
Norway	1995	100	100	100	100
Pakistan	1996	85	56	75	24
Panama	1995	99	73	99	81
Papua New Guinea	1991-93	97	18	95	12
Paraguay	1995	70	6	...	44
Peru	1995	91	31	78	23

(Table continues on the following page.)

	Year	Population with access to safe water (%)		Population with access to adequate sanitation (%)	
		Urban	Rural	Urban	Rural
Philippines	1995	94	...	...	...
Poland	1989-90	89 ^a	...	100	100
Portugal	1989-90	...	...	100	100
Qatar	1996	100	100	100	100
Republic of Moldova	1995	98	18	96	9
Romania	1991-93	70	10	81	3
Rwanda	1995	79	44	...	...
San Marino	1989-90	...	...	100	...
Senegal	1996	90	44	68	12
Sierra Leone	1989-90	86 ^a	20 ^a	90	...
Slovenia	1994	100 ^b	97 ^b	100	95
Solomon Islands	1996	...	...	60	9
South Africa	1994	90	33	78	12
Sri Lanka	1995	88	65	81	70
Sudan	1995	84	41	79	4
Surinam	1995	100	70	95	36
Swaziland	1996	80	46	...	...
Sweden	1989-90	...	...	100	100
Switzerland	1989-90	100 ^a	100 ^a	100	100
Syrian Arab Republic	1996	96	79	...	...
Tajikistan	1991-93	86	32	83	14
Thailand	1995	94	88	98	95
The FYR of Macedonia	1989-90	...	...	68	13
Togo	1995	82	41	76	22
Tonga	1986-88	100	100	...	...
Trinidad and Tobago	1995	100	88	97	92
Tunisia	1994	100	76	100	50
Turkey	1989-90	72 ^a	63 ^a	99	90
Turkmenistan	1991-93	80	5	70	5
Uganda	1995	60	36	60	50
Ukraine	1991-93	77	12	70	8
United Rep. of Tanzania	1991-93	65	45	97	83
Uruguay	1995	99	...	56	...
Uzbekistan	1991-93	72	46	46	5
Vanuatu	1989-90	95	67	90	88
Venezuela	1995	79	79	74	60
Yemen	1995	74	14	40	14
Zambia	1995	66	37	66	37
Zimbabwe	1991-93	99	64	99	48

... Not available.

Notes: Data on population with access to safe water and access to sanitation are obtained from the third evaluation of the Health for All strategy. For the latest evaluation, data were collected in 1997. The World Health Organization (WHO) collects this information from member states through questionnaires as part of their continuous effort in monitoring and evaluation of safe drinking water and sanitation.

a. Data refer to 1986-88.

b. Data refer to 1991-93.

c. For statistical purposes the data for China do not include Hong Kong Special Administrative Region (Hong Kong SAR), Macao Special Administrative Region (Macao SAR), and Taiwan province of China.

d. Data refer to 1989-90.

e. Data refer to 1995-96.

Percentage of population with safe water refers to the proportion of the population with access to an adequate amount of safe drinking water in a dwelling or located within a convenient distance of the user's dwelling. The relevant definitions follow.

Population covered. Includes urban population served by house connections, urban population without house connections but with reasonable access to public standposts, and rural population with reasonable access to safe water.

Reasonable access to safe water. In the home or within 15 minutes walking distance. A proper definition should be adopted taking local conditions into account: in urban areas, a distance of not more than 200 meters from a house to a public standpost may be considered reasonable access; in rural areas, reasonable access implies that the housewife does not have to spend a disproportionate part of the day fetching water for the family's needs.

Convenient distance. Convenient distance and access are distinct in a sense that there may be access to water, but it is not necessarily convenient to fetch water because of distance. The water should be within a reasonable distance of the home, that is, 200 meters to fetch 20 liters of safe water per person per day.

Adequate amount of water. Amount of water needed to satisfy metabolic, hygienic, and domestic requirements, that is, 20 liters of safe water per person per day.

Safe water. Does not contain biological or chemical agents at concentration levels directly detrimental to health. "Safe" includes treated surface water and untreated but uncontaminated water such as that from protected boreholes, springs, and sanitary wells. Untreated surface waters, such as streams and lakes, should be considered safe only if the water quality is regularly monitored and considered acceptable by public health officials.

Percentage of population with adequate sanitation refers to the proportion of the population with access to a sanitary facility for human excreta disposal in the dwelling or immediate vicinity. A sanitary facility is a unit for the disposal of human excreta that isolates feces from contact with people, animals, crops, and water sources. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. To be effective, all facilities must be correctly constructed and properly maintained.

Sources: WHO 1997. Other Web sites with relevant statistical information on water, sanitation, and health include the following:

http://www.who.int/water_sanitation_health/Globassessment/GlobalTOC.htm.

<http://www.unicef.org/pon97/league1.htm>.

Technical Note S.2 Approaches to Assessing Health Impacts

Attempts to measure the health impact of water supplies and sanitation have a long and checkered history. Many of them have been made by amateur epidemiologists at the behest of the agencies funding the construction of the facilities and with insufficient planning and rigor. Even some studies supervised by eminent specialists have produced almost useless or meaningless results after taking years to complete and costing substantial sums of money. This unhappy experience led a panel of experts, convened in 1975 by the World Bank, to conclude that the Bank should not undertake any long-term longitudinal studies of the question.

There were brief hopes during the 1980s, the International Water Decade, that a new technique, the case-control method, would provide a quicker, cheaper means of measuring the impact on diarrheal disease. However, several experimental studies of this type produced disappointing results, and it became clear that they suffered from shortcomings similar to studies of the more conventional design.

Methodological Problems

One review of the literature listed eight common errors found in health impact studies; one or more of these shortcomings was found in every one of the studies reviewed.

Epidemiological studies depend on the intervention studied (in this case water and sanitation) and an outcome measure (the health impact). Part of the problem is the nature of the intervention. The ideal way to measure the impact of any health intervention, the double-blind, randomized, controlled trial, is not feasible for water and sanitation. There is no placebo for a pit latrine. Moreover, the unit of intervention usually has to be the community rather than the household. Moreover, it is nearly impossible—ethically, politically, and practically—to allocate water supplies and sanitation at random.

Box S.1. Confounding Factors

An epidemiological study might find that television ownership was associated with reduced incidence of diarrhea, but this does not, of course, mean that televisions prevent the disease, but rather that people who own televisions are likely to be richer and better educated than their neighbors, and these along with other factors help to protect them from illness, causing an apparent association. This is called *confounding* and is a major problem in health impact studies. For example, people who own latrines may have less diarrheal disease, but this does not necessarily prove that latrines prevent diarrheal disease.

The principal outcome is diarrheal disease; by any reckoning, more than 90 percent of the health benefits of improved water supplies and sanitation arise from reduced diarrheal illness, most of it in children less than five years' old. This raises other problems. Diarrhea is caused by a wide variety of micro-organisms, transmitted by a wide range of different routes. Water supply and sanitation affect only some of these. For these reasons well-designed water supply and sanitation interventions typically reduce diarrhea incidence by about 25 percent.

With more than 3 million children dying of diarrheal disease each year, a 25 percent reduction is a very substantial public health benefit; however, with many other factors (education, nutrition, climate) also affecting diarrhea rates, a percentage reduction of only 25 percent is extremely hard to measure reliably. Moreover, if detected, it is very difficult to attribute a reduction unambiguously to improved water and sanitation.

For these reasons a review of the published and unpublished results of the best health impact studies of the Water Decade concluded that health impact studies are not an operational tool for project evaluation or fine-tuning of interventions. The results are not only unpredictable; they frequently offer no firm interpretation.

Moreover, by their very nature epidemiological studies have little power to diagnose deficiencies and suggest improvements, a normal requirement of operational project evaluations. If no health impact is found, it could be because the water and sanitation facilities are not functioning, or because they are not used correctly. Functioning and use are the first questions to ask in any evaluation of a water and sanitation project. Whether or not a health impact is found, the study itself does not offer any guidance on how the project, and hence the impact, might be improved.

An alternative approach

What is known from the existing literature on impact studies is that in those cases where a significant health impact was found, the provision of water supply or sanitation had been accompanied by improvements in hygiene. *Hygiene* in this context refers to practices such as the washing of hands, food, and utensils, or the disposal of children's stools. It may be promoted by better access to water and sanitation or by hygiene education. Improvements in hygiene may be reflected in increased water consumption. If no such change in behavior results from improved water supply or sanitation, the only benefits likely to occur are those stemming from improved water quality; in many settings, these are relatively minor or even negligible.

Instead of attempting to measure disease rates, studying patterns of hygiene behavior has far greater diagnostic power in indicating opportunities for project improvement. Since it is farther back up the causal chain, it is easier to attribute to the project intervention. It is also quicker and cheaper than epidemiological studies. It can also be done at the project design stage. This will not only help to establish a baseline yardstick against which to compare evaluation results, but it will also improve project design. A convenient, user-friendly manual is available, as is a more detailed account with case studies.

Box S.2. Minimum Evaluation Procedure

Health improvements are only the culmination of a long chain of cause and effect. This runs from the original construction of the water supplies or sanitation facilities through their operation and, hence, their use, permitting changes in hygiene behavior and thus the prevention of disease transmission. The principle of the World Health Organization (WHO) Minimum Evaluation Procedure is to examine the intermediate links in the chain—functioning and use. Hygiene behavior is another such link.

Source: Cairncross (1999), reprinted with permission. Available at <http://www.lboro.ac.uk/orgs/well/resources/fact-sheets/fact-sheets-htm/mthiws.htm>.

improvements to a wide variety of different services such as water, drainage, roads, etc., are considered by the communities who express their relative demand for these services. Total funds available for each community area should be reasonably fixed.

Community volunteers are encouraged and trained to undertake a participatory survey in their own community. Preferences and commitments are then agreed on in meetings.

A variety of PRA techniques are used by trained researchers or facilitators to triangulate and confirm the preferences of different community groups, who are also involved in the analyses.

RFS estimate time and financial costs of current household behavior (e.g., payments to water vendors and time saved in collecting water).

A questionnaire survey to determine the maximum willingness to pay of individuals for various options for level of service (including improved reliability), payment arrangements, within the context of the current or specified institutional regime.

Detailed options and their implications (costs, operations and maintenance [O&M], institutional, etc.) are considered by communities using PRA or ballot.

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| <ul style="list-style-type: none"> ⊃ simple and easily understood ⊃ expresses "real" demand if only in relative terms ⊃ preferences can be refined during micro-planning ⊃ inexpensive ⊃ compatible with PRA work | <ul style="list-style-type: none"> ⊃ very good community sense of ownership ⊃ enhances empowerment ⊃ useful if demand assessment involves ongoing negotiation | <ul style="list-style-type: none"> ⊃ good community sense of ownership ⊃ extension staff can assess appropriate time to elicit demand ⊃ can enhance empowerment ⊃ can be used in changing institutional environment | <ul style="list-style-type: none"> ⊃ can provide reasonably accurate estimates of current time and cost expenditure and hence possible willingness to pay for service improvements ⊃ data and analysis requirements are modest ⊃ good baseline data for impact assessment ⊃ compatible with PRA | <ul style="list-style-type: none"> ⊃ provides good data for project appraisal ⊃ good data on willingness to pay (WTP) and potential revenues for different service levels, assuming a thorough survey is undertaken ⊃ can guide tariff subsidy and cost-recovery policy ⊃ similarity to public opinion polls means results conceptually easy for nonspecialists and politicians to understand | <ul style="list-style-type: none"> ⊃ more precise cost estimates lead to less confusion ⊃ institutional charging of O&M implications can be thoroughly assessed ⊃ can be used in a changing institutional environment |
|--|--|---|---|---|--|

Description of technique

Potential benefits

<ul style="list-style-type: none"> ⊃ WTP for different service levels not readily known ⊃ process can be manipulated by extension workers who do not use sufficient technical or financial rigor 	<ul style="list-style-type: none"> ⊃ financial rigor ⊃ reliant on skills being in the community ⊃ requires substantial flexibility by external funding agencies and local support institutions 	<ul style="list-style-type: none"> ⊃ extension workers who may not use sufficient technical/financial rigor if not adequately supervised ⊃ extension workers with good facilitation skills are required 	<ul style="list-style-type: none"> ⊃ (including for new levels of service options) ⊃ poverty may constrain ability of poor people to convert time savings resulting from service improvements into cash payment for them ⊃ rarely useful for sanitation projects 	<ul style="list-style-type: none"> ⊃ by, for instance, raising expectations about particular options ⊃ relatively high cost and requires specialized consultant for reliable results ⊃ inaccuracies may occur in a changing institutional environment 	<ul style="list-style-type: none"> ⊃ from an unrepresentative group unless care is taken to avoid group bias ⊃ requires detailed cost information, so earlier demand assessment may need to use other method ⊃ detailed work on some options can be redundant ⊃ requires flexibility by funding agency 	<p>potential risks and constraints</p>
<p>suitable for village or slum general improvement projects. Nongovernmental organizations (NGOs) often use this technique.</p>	<p>more suitable where low-tech, low-cost solutions are definitely viable, e.g., handpumps and latrines</p>	<p>suitable in most situations, possibly complemented by other methods</p>	<p>suitable where substantial water supply problems exist; to be used in conjunction with PRA methods.</p>	<p>suitable for informing strategic decisions on levels of service, cost-recovery policy, etc., in large investment programs, e.g., urban systems or policy framework for small rural supply schemes</p>	<p>suitable where difficult choices are to be made between different options</p>	<p>Typical usage</p>

^a Estimated costs of technically viable options are needed for these techniques.

^b PRA = Participatory rapid appraisal.

Source: DFID 1998.

participation, weak regulation, and conflicting priorities.

Response:

- Prioritization of areas where policy reform is in place, or where there is a demonstrated commitment to it
- Government should clearly articulate and disseminate policies, regulations, and programs
- Role of stakeholders should be clearly defined
- Broad consultation in policy review should be promoted

Demand for services is increasing, but service expansion has been constrained by insufficient resource allocation from the public sector, inefficient investments in costly schemes, and a lack of capacity to mobilize resources from users, local government, private sector, and others.

Response:

- Financial policy should link prices charged to costs of services. Users should pay more for higher levels of service
- Tariff policy is important and should be designed to meet financial viability of each system
- Subsidies should only be transitional and targeted to communities on a onetime basis
- Balance capital investments with long-term O&M

- whether to participate in project,
- preferred level of service based on willingness to pay;
- how services are planned, implemented, operated, and maintained; and
- how funds are managed and accounted for.

Promote institutional reform based on clear roles for key stakeholders where communities own their facilities, the private sector provides goods and services, and government facilitates the process.

- Community owns, manages, and helps finance services
- Government at all levels facilitates the process by encouraging stakeholder participation, setting policies and standards, and financing facilities
- Private sector and NGOs provide goods, services, and financing
- External support agencies: financing, technical assistance, policy coordination
- Civil society provides policy and implementation support

Ensure appropriate legal framework for ownership and management.

- Ownership (water resources plus assets)
- Recognition and autonomy of community-elected Water Users Associations (WUAs) to operate, set tariffs, manage funds, especially in relation to local government

Implement CWS projects within the context of broader community and local government development.

- Support decentralization reforms
- Recognize and promote cross-sectoral linkages (education, health, rural development, energy, etc.)

Establish financial policies that underpin demand-responsive approach where communities pay part of the capital cost in proportion to the cost of the facilities, and all operations and maintenance costs.

- Promote increased capital cost recovery from users
- An upfront cash contribution based on their willingness to pay is required from users to demonstrate demand and develop community capacity to administer funds and tariffs
- Ensure 100 percent recovery of operation and maintenance costs
- Improve community-level financial management and resource mobilization, especially for major repairs/replacements and service expansion
- Set up robust financing mechanisms (public and private sector) and explore financial intermediation options (such as household credit for on-site sanitation) to increase internal resource mobilization
- Small towns may need specific assistance for tariff setting and financial management plan for service expansion and upgrading
- Provide detailed information on costs to allow for informed choice and seek to reduce

Policy environment

Financing options

Service delivery options

Response:

- Promote community ownership and management and support a range of delivery and management options based on service levels, population size, etc.
- Promote policies and institutional reform that remove barriers to private sector participation and other support and management arrangements
- Develop mechanisms for allowing users to make informed choices (social intermediation)
- Promote flexible standards that open up choice, support appropriate technologies and equipment standardization (where required for spare part network)
- Consider management and O&M issues as an integral element of the community planning and decision process

Full economic and health impact of improved CWS are often not achieved because of lack of attention to hygiene education and sanitation (HES). Approaches to sanitation have focused mostly on technology aspects rather than on behavior changes and creating a market (supply and demand) for sanitation facilities

Response:

- Ensure that HES components are included in national policy dialogue and resources provided in CWS programs

Lack of community involvement, especially of women, has been the main reason for poor service sustainability. Traditional project design did not consider the required project rules and incentives to achieve full participation.

Response:

- DRA requires ample information flow and processes for the community to make all investment decisions

- hood options in small towns. The larger and more complex the system, the greater the need for professional operators.
- Ensure long-term support and technical assistance to community management (private and public sector support, association of WUAs, etc.), appropriate technology, availability of spare parts in the local market, etc.

Create competitive environment for allowing communities to access a range of providers of goods and services for all aspects of the project cycle.

- Community organization and formation of representative WUA, resource mobilization
- Service planning: Estimating costs, engineering designs, financing plans
- WUA training in financial management, contract administration, operations and maintenance
- Community awareness raising, hygiene education, sanitation promotion
- Contracting, procurement, and construction supervision
- Long-term support to management, operation, maintenance
- Small towns are institutionally, technically, and financially more complex than rural areas and require additional support and training

Integrate water, sanitation, and hygiene education in CWS projects.

- Hygiene education and sanitation need clear objectives, performance indicators, and monitoring and evaluation processes
- Hygiene education should build on existing beliefs and community priorities and seek to achieve effective and sustained use of improved water and sanitation services and hygiene practices
- Schools and family units are both important in HES programs

Promote user investment in sanitation through public awareness and HES education and strengthen private sector's ability to construct facilities.

- Subsidy programs for sanitation are not sustainable; however, targeted subsidies may be appropriate to demonstrate approaches and stimulate demand
- Include a wide range of technology options for waste water and excreta disposal and treatment
- Interventions should be coordinated with and supplement national health programs

Ensure representative and informed participation of all stakeholders.

- Place the community at the forefront of decisionmaking and management through appropriate project rules, incentives, and social intermediation
- Ensure participation of women and minority groups
- Promote exchanges (meetings, newsletters, e-mail, associations of WUAs)
- Facilitate stakeholder participation in policy formulation and program design and evaluation
- Monitoring and evaluation should include participation of all stakeholder groups

Hygiene and sanitation

Participation and gender

<ul style="list-style-type: none"> 3 Capacity building is central to Bank support in sector 3 Capacity building requires a commitment to long-term support 3 Projects must have realistic objectives consistent with local capacity and build in local knowledge 3 DRA recognizes the need to support community outreach, social intermediation, and training 	<ul style="list-style-type: none"> 3 Community outreach, intermediation, and training are required before, during, and after facility construction 3 Selection of trainers and community development workers should be done in a cost-effective and competitive manner, with the community involved in the contracting process, as appropriate 3 Capacity is most required in social intermediation skills and informing communities about choices 3 Training should be time-bound, output and impact oriented, with performance monitoring and targets to measure capacity and achieve goals 3 Develop opportunities for local stakeholders (private sector, local government, NGOs) to participate and build their capacity 	Capacity building
<p>Most clients are the poor, poorest are outside cash economy and politically weak; it is easier to provide services to rich; population is increasing; and there are decreased services and resources as well as lack of political commitment toward the poor</p> <p>Response:</p> <ul style="list-style-type: none"> 3 Design CWS programs to reach the poorer segments of the population 3 Expand range of technology and management options that are affordable to the poor 	<p>Set rules to target poor, unserved communities, and vulnerable groups in these communities.</p> <ul style="list-style-type: none"> 3 Develop baseline information, identify vulnerable groups, and monitor access of the poorer communities to project services 3 Expand range of technology options, building on existing community resources 3 Ensure adequate flow of information to all eligible communities and ensure adequate social intermediation and participation by all groups, including women, poor, and minorities 3 Recognize and build on informal safety nets within communities 3 Involve women and minority groups in community decisions and management 	Poverty and access
<p>Improper excreta and solid waste disposal are increasingly a source of pollution and related disease. Growing demand for water coupled with high variability of supply contributes to increased competition for scarce water resources and degradation of resource.</p> <p>Response:</p> <ul style="list-style-type: none"> 3 Consider environmental aspects of CWS: water resources and waste management 3 Promote holistic view of integrated water resources management (IWRM) in designing CWS policies and programs 	<p>Support community-based environmental management to improve living conditions and protect water resources.</p> <ul style="list-style-type: none"> 3 Consider source protection, conservation, and education of water users as stewards of water resources, watershed management, and appropriate water resource allocation among competing sectors, etc. 3 Promote waste management as an integral part of IWRM 3 Support public awareness and community education programs on environmental protection and IWRM 3 Rely on groundwater rather than surface water, which must be treated to protect water quality 	Environmental management

Technical Note S.5 Design of Pro-Poor Tariff Structures and Subsidy Mechanisms

Box S.3. Do Cross-Subsidies Help the Poor to Benefit from Water and Wastewater Services?

Cross-subsidies form a common element of tariff policy designed to help the poor gain access to reliable water and sewerage services. The utility charges low-income groups and residences a tariff below cost (often well below) and attempts to offset the revenue loss by charging industrial and commercial users a tariff above average cost. This study looks at the outcome of this approach in Guayaquil, Ecuador. Guayaquil has large, unmet water needs, with 500,000 out of 2 million people lacking house connections. With an estimated average tariff of US\$0.94/m³ needed to meet supply costs and expansion needs, the utility charges residential users only US\$0.02/m³, but industrial and commercial users US\$1.76/m³.

The tariffs paid by the poor and residential consumers in Guayaquil do not cover the costs of even collecting the tariff much less providing services. Apart from the economic “welfare loss” of inefficient water distribution, the tariff structure gives the utility no incentive to extend residential service. Indeed, the utility lacks interest even in government grant financing of new connections, since each connection simply increases the utility’s monthly losses. The poor have no alternative but to depend on unreliable sources of non-network water that are either costly or poor quality, or both. At the same time, industrial and commercial operators appear to increasingly invest in self-supply, opting out of the (for them) expensive network system.

Source: Yepes 1999. Available at http://www.wsp.org/English/index.html?wps_subsidy.pdf.

Box S.4. Designing Direct Subsidies for the Poor: A Water and Sanitation Case Study in Panama

Direct subsidies are an increasingly popular means of making infrastructure services more affordable to the poor. Under the direct subsidy approach, governments pay part of the water bill of poor households that meet certain criteria. This approach was first used in water sector reforms in Chile in the early 1990s and is an alternative to the traditional method in which governments pay subsidies directly to utilities, often allowing the price of water to fall below economic costs indiscriminately. This note illustrates how simulation techniques can be used to inform the design of direct subsidy schemes, ensuring that they are both cost effective and accurate in reaching the target population.

Source: Foster 2000. Available at <http://www.worldbank.org/html/fpd/notes/211/211foste.pdf>.

Box S.5. Better Household Surveys for Better Design of Infrastructure Subsidies

Reform of the water, electricity, and telecommunications sectors is gathering momentum in nearly all developing countries. Reform should include an assessment of whether subsidies are necessary and, if so, how to design subsidies that accurately reach their intended beneficiaries and that do not distort the market. A major challenge for reforming governments is to build the capability to do this fast enough for subsidy redesign to be incorporated in sector reform. Clearly, it would save time to use existing sources of information. Potentially, one of the most useful sources is the Living Standards Measurement Study (LSMS) survey. However, the LSMS questionnaires do not generate all the information needed for subsidy design. Fortunately, with a few simple and inexpensive changes, these surveys could be made much more useful for the design of subsidies and for devising policies that would give the poor better access to infrastructure services.

Source: Gómez-Lobo, Foster, and Halpern 2000b.
Available at <http://www.worldbank.org/html/fpd/notes/213/213summary.html>.

Box S.6. Water and Sanitation Subsidies in the Former Soviet Union

Utility subsidies can serve many objectives. Sometimes governments want to ensure that all households receive a basic (universal) level of service because of the perceived positive externalities associated with it, or as an attempt to win support from the electorate. A temporary subsidy may be an acceptable price to pay for making a large tariff increase politically palatable. Subsidies to certain classes of consumers may facilitate a systematic effort to strengthen payment discipline and reduce the stock of outstanding receivables. Finally, subsidies may help to redistribute income and enable the poor to receive utility services without having to sacrifice other essential needs.

Source: Mitric 1999. Available at <http://www.worldbank.org/ecspf/ecsin/Papers/WP5.htm>.

Technical Note S.6 Learning from Good and Bad Practice

Box S.7. Water and Sanitation and the Poor: Case Studies Available Online

Asian Development Bank: <http://www.adb.org/Publications/Online/>
 EHP (Environmental Health Project): <http://www.ehproject.org/live/Rptspub.html>
 GARNET (Global Applied Research Network—Water and Sanitation): <http://www.lboro.ac.uk/garnet/>
 Hydroconseil (in French): <http://www.hydroconseil.com>
 IRC (International Water and Sanitation Centre): <http://www.irc.nl>
 Programme Solidarité Eau (in French): <http://www.gret.org/pseau>
 SANDEC (Department of Water and Sanitation in Developing Countries at the Swiss Federal Institute for Environmental Science and Technology): <http://www.sandec.ch>
 Water and Sanitation Program: <http://www.wsp.org>
 WEDC (Water, Engineering and Development Centre): <http://info.lboro.ac.uk/departments/cv/wedc>
 WELL (Water and Environmental Health at London and Loughborough): <http://www.lboro.ac.uk/well/>
 World Bank: <http://www.worldbank.org/watsan>
 WSSCC (Water Supply and Sanitation Collaborative Council): <http://www.wsscc.org>

Box S.8. DFID Guidance Manual on Water Supply and Sanitation Programs

The Department for International Development (DFID) commissioned this Guidance Manual to assist staff and partners to develop effective and sustainable water supply and sanitation programs. The manual comprises three chapters and appendices. These take the reader from an overview of the sector through specific development perspectives to detailed recommendations for each stage of the project cycle. The guidelines are concerned with household water supply and sanitation, with the emphasis on meeting the basic needs of the poor in rural and peri-urban areas, inner-city informal settlements and slums, and small towns.

Source: WELL (Water and Environmental Health at London and Loughborough). 1999.
 Available at <http://info.lboro.ac.uk/orgs/well/gm/contents.htm>.

Africa

Box S.9. Independent Water and Sanitation Providers in African Cities

When walking through the low-income neighborhoods of large African cities, one is struck by the presence of countless small artisans going about their business to perform the most basic of public services: delivery of water and removal of sanitation wastes.

Whether they are operators of standpipes or public toilets, water carters, resellers of water, or latrine cleaners, these self-employed individual entrepreneurs and small businesses are the ones who distribute water for domestic use and perform sanitation services for most families in these neighborhoods. Though the water they sell may be drawn from the city-piped water network, these private operators rarely have any official status. Most of the time, they work for themselves, independent of the city water agency or concessionaire and of the modern formal sector. In the case of sanitation, they are virtually the only providers, since piped sewerage systems are virtually nonexistent in Sub-Saharan Africa. Mostly unregulated and untaxed, they belong rather to the nonformal sector of the economy, which employs 70 to 90 percent of all urban workers in Africa.

In contrast to parastatal or multinational companies that seek new urban service concessions, these independent entrepreneurs reap no monopolistic benefits or rents. They must win their customers' loyalty and maintain their equipment on a daily basis. They must be ready to innovate and adapt in order to stay in business in this competitive market.

These women and men provide a public service without any subsidy. They are responding to the demand for water and sanitation services from most poor households. This clientele is often ignored by the city water authorities because they are said to be too poor to pay for their services. In fact, they are able to pay, but for a lower cost, lower standard, more adaptable range of services, as offered by the independent providers.

The provision of water and sanitation services to low-income urban areas in the developing world is a major focus of the Water and Sanitation Program (WSP). The program's objective is to improve the involvement of independent providers as partners with formal utilities, with the ultimate goal of improving the supply of water and sanitation services to low-income and informal urban settlements. This means encouraging operators who can sustain low-cost provision of these services to this clientele—not creating new enterprises but supporting existing ones that have been catering to this market for many years.

As part of this program, surveys were carried out in 10 Sub-Saharan African countries during July 1998 and July 1999. The countries covered were Benin, Burkina Faso, Côte d'Ivoire, Guinea, Kenya, Mali, Mauritania, Uganda, Senegal, and Tanzania. The report consolidates the results of the 10-city studies and seeks to answer the big questions about independent water and sanitation providers:

Box S.9. Independent Water and Sanitation Providers in African Cities (*continued*)

How do they provide water service in areas where city water authorities and concessionaires hesitate to invest?

How important are the services they supply—how many households do they serve, how many people do they employ, and what is the volume of their business?

How do they finance their investments in an infrastructure-intensive sector of business?

What kinds of relationships do they have with local authorities and with large water producers, both public and private?

What are their main advantages, what obstacles do they face in seeking to expand their activities or improve the quality of service, and what policies would be likely to improve their services and benefit the low-income urban consumers they serve?

The overall picture that emerges from the study suggests that by recognizing and regularizing the activities, roles, and institutional position of independent providers, and by facilitating intermediation, coordination, and partnership between citywide operators and independent providers, municipal and national authorities can set the stage for better delivery of water and sanitation services to the urban poor.

Source: Collignon and Vézina 2000. Available at <http://www.wsp.org/English/pdf/providers.pdf>.

Box S.10. The Welfare Effects of Private Sector Participation in Guinea's Urban Water Supply

In 1989 the government of Guinea enacted far-reaching reform of its water sector, which had been dominated by a poorly run public agency. The government signed a lease contract for operations and maintenance with a private operator, making a separate public enterprise responsible for ownership of assets and investment. Although based on a successful model that had operated in Côte d'Ivoire for nearly 30 years, the reform had many highly innovative features.

It is being transplanted to several other developing countries, so the authors evaluate its successes and failures in the early years of reform. They present standard performance measures and results from a cost-benefit analysis to assess reforms' net effect on various stakeholders in the sector.

They conclude that, compared with what might have been expected under continued public ownership, reform benefited consumers, the government, and, to a lesser extent, the foreign owners or the private operator.

Most sector performance indicators improved, but some problems remain. The three most troublesome areas are water that is unaccounted for (there are many illegal connections and the quality of infrastructure is poor), poor collection rates, and high prices.

The weak institutional environment makes it difficult to improve collection rates, but the government could take some steps to correct the problem. To begin with, it could pay its own bills on time. Furthermore, the legislature could authorize the collection of unpaid bills from private individuals.

Sources: Clarke, Ménard, and Zuluaga 2000; Ménard and Clarke 2000.
Available at <http://www.worldbank.org/research/>.

Box S.11. Reforming the Water Supply in Abidjan, Côte d'Ivoire

Compared with other urban water systems in West Africa, the water supply system in Abidjan performs very well. Documenting the recent history of that system, the authors try to answer three questions: What motivated reform in a system that was already performing well? How and why did the reform affect sector performance, and what additional changes might further improve performance? And what explains the relatively strong performance of Abidjan's water system? Is the success attributable primarily to an efficient contractual arrangement or to Côte d'Ivoire's institutional environment generally?

In a region plagued by political instability, Ivorian political institutions were remarkably stable for close to 40 years. In part, the success of the Ivorian model is the result of these institutions' stability and credibility.

The single-party system in place at the time of reform might suggest that there were few restraints in place to prevent the government from behaving opportunistically. But several features of the institutional environment protected against such opportunism. Consequently, and because reform was based on a system already performing well, the contractual arrangement with a private operator proved exceptionally capable of adjusting even in the face of dramatic changes in the external environment.

Reform in Côte d'Ivoire was motivated primarily by a macroeconomic crisis, which reduced the resources available for public investment. Without either a sector crisis or a realignment of political forces, the will for reform was weak. Opportunities for improvement were therefore missed and some problems remain.

Among the ways in which the system could be improved: splitting the water system into autonomous subsystems for different cities and allowing bidding for investment contracts, increasing the chances of competition for investment, which does not currently exist.

Source: Ménard and Clarke 2000. Available at <http://www.worldbank.org/research/>.

Box S.12. Promoting Urban Sanitation in Lesotho

It is generally accepted that improved health starts with the basics of clean water, good sanitation, and health education. But in any given developing country, how many people understand this? How many are prepared to divert their very limited resources to sanitation when they also have the priorities of food, shelter, clothing, transport, medical costs, and school fees to pay for? Is it necessary for people to fully appreciate the health benefits? If they desire improved sanitation, does the motivation matter?

Good sanitation can be viewed as a product that must be marketed to the public. It is likely to be quite low among their priorities, and it is the job of the community workers, public health workers, health assistants, sanitation teams, and so forth to create a demand for improved sanitation.

At the start of any sanitation project, it cannot be assumed that people will automatically desire the product being promoted. The product must be adequate, acceptable, and affordable. After that, much hard work must go into convincing people that they need or want improved sanitation. An initial lack of willingness to pay for improved sanitation can be changed by education and promotion.

Two primary approaches were successfully used to advertise the ventilated improved pit (VIP) latrine. The first was to publicize the health, hygiene, and cleanliness benefits of improved sanitation, and the second was to heighten the status of a VIP latrine as a new, desirable, modern, and convenient product.

In Lesotho people place a lot of emphasis on status, prestige, and position. Therefore, the project team promotes the VIP latrine as affordable but not cheap. Pictures are shown of neatly constructed and painted VIPs that have attractive doors and plastering inside and outside. Mirrors, potted plants, a tiled floor, and toilet paper holders can be added to improve the appearance and status value. These extras add prestige to the basic affordable latrine.

Source: Blackett 1994.

Box S.13. Ghana: The Community Water and Sanitation Project

When Ghana's Community Water and Sanitation Program was launched, the country was undergoing considerable social and economic reform. This made the introduction of a new demand-responsive approach to rural water and sanitation acceptable to most small towns and rural communities, particularly as delays in service delivery had developed under the old policies.

Despite the government's initial concerns about managing extensive change in small, illiterate, low-income rural communities, acceptance of the demand-responsive approach has been swift: community involvement (including women) is high, and there is overwhelming evidence that communities regard the facilities as their own. Having the project coincide with the government's efforts at decentralization and good governance showed excellent timing, particularly as demand had shot far above the ability of the government to meet it.

Under the new program, the community initiates and makes informed choices about service options. Based on its willingness to pay for the service level chosen, it also accepts responsibilities for all operation and maintenance costs. Poorer communities would also benefit from the program if technical options were more varied and flexible. The Community Water and Sanitation Division sets national policies and strategies and creates an enabling environment for all stakeholders, and the community (along with its legal representative, the district assembly) owns and is responsible for sustaining the water facilities.

Source: Asamoah 1998. Available at http://www.wsp.org/English/Conference/main_ghana.pdf.

East Asia and Pacific**Box S.14. Community-Based Sewer Systems in Malang, Indonesia**

Indonesia has one of the lowest rates of urban sewerage coverage in Asia, causing widespread contamination of surface and ground waters. As a result, the country has experienced repeated local epidemics of gastrointestinal infections, and it has the highest incidence of typhoid in Asia. Economic losses attributable to inadequate sewerage are conservatively estimated at US\$4.7 billion per year, or 2.4 percent of 1997 gross domestic product, roughly equivalent to US\$12 per household per month.

The low coverage is partly the result of government of Indonesia policy, which currently assigns responsibility for sanitation to households. This policy, which is a result of the poor past performance of large centralized sewer systems, has inhibited the evolution of effective local government institutions for the planning, implementing, and operating of sewer systems.

Since about 1980, the proportion of the urban population in Indonesia served by sewer systems has stagnated. Yet in 1995, 73 percent of urban households had some form of private on-site sanitation. The partially treated, or untreated, effluent from these facilities typically flows into open drains or directly into water bodies. Proper disposal of human waste, either septage or sullage, is a rare exception. Given the scale of the problem, interest in neighborhood or community-based sewer systems (CBSS) is increasing. This study summarizes one of the more successful examples of CBSS in Indonesia.

The main lesson that has emerged is a familiar one: *there is a direct relationship between community participation in all aspects of decisionmaking, construction, and operation of a CBSS and its operational success.*

Source: Foley, Soedjarwo, and Pollard 2000.

Available at http://www.wsp.org/English/Regional/eap/eap_malang.pdf.

Box S.15. Determinants of Diarrheal Disease in Jakarta, Indonesia

An empirical investigation of the effects of engineering variables (water supply, proxies for the risk of contamination) and individual behavior on diarrheal disease was conducted in Jakarta, Indonesia. The survey elicited information on the households' socioeconomic and demographic circumstances, local environmental conditions and practices, and the health of those household members (the mother and children under six) most likely to be adversely affected by the household environment. Diarrhea was one of the health conditions monitored, and many of the environmental variables were relevant to the fecal-oral routes through which diarrheal diseases typically spread. Complementing the questionnaire surveys, water samples were tested for fecal contamination.

Among the engineering variables, poor reliability of the water supply is most strongly associated with diarrheal illness. Interruptions in the supply are consistently found to interfere with defensive behavior (washing hands after using the toilet) and to result in higher incidence of diarrhea. Surprisingly, the water sources that supply wealthier households (government-piped water and private wells) have the highest interruption rates, making those households particularly vulnerable to diarrhea. The availability of a waterbasin near the toilet area (another "engineering" variable) appears to significantly increase defensive behavior and reduce the risk of diarrheal illness. While they should be viewed more as exploratory than definitive, the results of the study highlight the importance of looking at both economic and behavioral factors and engineering approaches to reducing diarrheal disease, particularly maintenance of a reliable water supply and assuring that housing affords people options for taking defensive measures. Wealthier, better educated households are generally better able to undertake defensive behavior. However, it was found that for the specific case of Jakarta economic development strategies that raise personal incomes and education do not necessarily guarantee lower rates of diarrhea. This paradox is at least in part resolved by noting that the most convenient supplies of water sought as incomes rise (household connections) are not necessarily uncontaminated or exempt from interruptions.

Source: Alberini, Eskeland, Krupnick, and McGranaham 1996.

Available at <http://www.worldbank.org/html/dec/Publications/Workpapers/wps1568-abstract.html>.

Latin America and The Caribbean

Box S.16. Providing Water and Sanitation for the Urban Poor in Brazil's Urban Slums

One of the hardest things about life in Brazil's urban slums is the lack of clean water and sewage disposal systems. In a crowded neighborhood, these two simple urban services can mean the difference between health and disease, cleanliness and filth, convenience and daily backbreaking labor. These shantytown neighborhoods—called *favelas*—that dot the urban landscape in Brazil have grown so explosively and so haphazardly that urban services are either nonexistent or plainly inadequate.

The favelas are a water engineer's nightmare. They are crowded and chaotic. Flimsy tin shacks are stacked on one another along forbiddingly steep hillsides—or are mired together in muddy swamplands. They often lack strong local organizations, and too often they are plagued by drug-related violence. Brazil's state-owned water companies find it impossible to maintain water systems or collect bills in the favelas. Thus, even as Brazil greatly improved its water and sanitation services throughout the country in the 1980s, the urban favelas have remained unconnected. Instead of clean water piped directly to their homes, favela residents often pay 10 times the legal rate from water pirates who tap illegally into the main systems. And instead of sewage being piped safely away for sanitary treatment, wastewater flows down favela streets in stinking rivers, or is dumped into natural drainage channels to feed polluted streams and lagoons. About 21 million Brazilians do not have access to safe water, and twice as many lack access to sewerage networks or septic tanks. Most of them live in the favelas.

New success means new hope. An innovative project offers new hope for bringing water and sewerage services to Brazil's favelas—and perhaps to poor urban neighborhoods around the world. Brazil recently completed PROSANEAR, a pilot program that developed a new approach to delivering water and sanitation services to the urban poor—and enjoyed a whole new level of success. PROSANEAR provided 900,000 poor people with fresh water piped directly into their homes, and 1 million people were also connected to sewerage systems. This is more than four times the number of new connections that project planners hoped for when PROSANEAR began, and all for a cost below original estimates: less than US\$98 per person for water connections and less than US\$140 for sewerage.

Cost-effective technology and community participation. PROSANEAR worked so well by combining two novel approaches to delivering urban services: cost-effective, appropriate technologies and community participation. By putting engineers and social experts on the same team, PROSANEAR found a way to overcome the usual shortcomings of top-down infrastructure planning. In the favelas, standard designs are foiled by the haphazard layout of the houses. Furthermore, favela residents are poorly equipped to pay for and maintain systems that have never been explained to them and that in many cases they never requested.

Instead of implementing a predesigned project, PROSANEAR teams went into communities to ask what kind of water project the people wanted—if any—and what kind they would be willing to support with their money and labor.

Instead of expensive, high-tech systems, neighborhoods were able to choose from a range of simple, innovative systems that made water and sanitation affordable and more environmentally appropriate for poor, crowded settlements. In many places, groups of households were batched together in a creative "condominium" approach that not only made the networks more efficient and affordable, but also forged new bonds among neighbors.

PROSANEAR sought a more permanent impact by mobilizing local clubs—women's, sports, and religious groups, for example, to educate people about the importance of sanitation and to teach them how to operate and maintain their new systems.

Box S.16. Providing Water and Sanitation for the Urban Poor in Brazil's Urban Slums (continued)

With all of these innovative elements at work, PROSANEAR projects became more than just infrastructure projects; they became neighborhood projects, fueled by the creative energy of fully informed and involved local residents.

The results: Cleaner water and stronger communities. The results were powerful, and they went far beyond the better health and greater convenience enjoyed by 1 million people newly connected to water taps and toilets.

For many residents, getting a formal postal address and a water bill in one's own name meant they had graduated from squatter status to permanent citizenship—a new level of identity within the society. Many went on to make additional improvements to their houses.

Some groups that came together to build water systems stayed together to work for other neighborhood needs, such as garbage removal or income-generating activities.

Women—deeply involved at all stages of the PROSANEAR project—found an unusual chance to speak and gain respect in the community.

PROSANEAR cured many water companies of the misconception that the poor would not pay for water and sanitation services. The poor will pay, as long as they understand for what they're paying and receive adequate services for their payments.

Local construction and consulting firms have adjusted their business practices to include the community consultation and low-cost technology alternatives that worked so well in PROSANEAR.

Source: Katakura and Bakalian 1998. Available at http://www.wsp.org/English/index.html?wps_prosan.pdf.

Box S.17. Management Contracts and Water Utilities: The Case of Monagas State in Venezuela

The management contract for water and sanitation services in the Venezuelan state of Monagas, awarded in early 1997 to a Spanish firm, is one of the very few signed and active management contracts in the water sector. The early operational results are very positive, and the experience sheds light on when a management contract is the right choice, how it should be designed to introduce the right incentives for the contractor and the public representatives, and what steps to take in awarding it.

Source: Mariño, Stein, and Wulff 1998.

Available at <http://www.worldbank.org/html/fpd/notes/166/166marin.pdf>.

Box S.18. Competition in Water and Sanitation: The Role of Small-Scale Entrepreneurs

There has long been a belief that the water and sanitation sector has a high degree of natural monopoly. But competition is widespread in the low-income retail market in developing countries. There is no inherent monopoly in such small-scale activities as reselling water by the bucket. This note explores the diversity of small-scale entrepreneurs supplying unserved niches of the water and sanitation market. Small enterprises often account for a larger share of the market than do incumbent utilities, and they are well placed to complement and even compete with trunk concessions and public companies in tailoring services to the poor. So in designing concessions or any long-term rules for the sector, governments should take account of existing or potential small providers.

Source: Solo 1998. Available at <http://www.worldbank.org/html/fpd/notes/165/165solo.pdf>.

Box S.19. Designing Pro-Poor Water and Sewer Concessions: The Case of El Alto and La Paz, Bolivia

Bolivia is one of a growing number of developing countries turning to the private sector to improve urban water and sanitation services. The country's first major contract in the sector, a 25-year concession for the neighboring cities of La Paz and El Alto, was implemented in August 1997. The public utility in La Paz–El Alto provided center city residents with in-house water and sewer connections but did not serve lower income residents in outlying areas. Unserved households relied on alternative water and sanitation services—often at high cost. A primary objective in moving to a private concession was to turn this situation around, expanding services to low-income households while holding down costs by increasing efficiency. Because the La Paz–El Alto concession was explicitly designed to expand service to the poor, this concession is a good case study for evaluating how different provisions in the contract and the sector regulation may help or hinder service expansion.

To date the La Paz–El Alto concessionaire has met its service expansion obligations. But certain features of the contract could make it unnecessarily difficult to achieve the broad objective of universal service—as well as unnecessarily painful for some households. For example, the contract mandates a uniform and costly level of service, the tariff provides disincentives to meet expansion goals, and exclusivity provisions have the potential to restrict water and sanitation options before in-house connections become available.

The author finds that outcomes in services can be affected by the concession contracts, by the contract bid process, by sector regulations, and by regulatory arrangements. To increase the likelihood of improvements in low-income areas, policymakers should consider the following:

Make contract objectives clear and easily measurable.

Eliminate policy barriers to serving the poor (including property title requirements and service boundaries that exclude poor neighborhoods).

Box S.20. Designing Pro-Poor Water and Sewer Concessions: The Case of El Alto and La Paz, Bolivia

Design financial incentives consistent with service expansion or improved objectives for low-income areas.

Contracts are subject to negotiation, so expansion or connection mandates alone do not guarantee that concessionaires will serve poor areas. Provisions and standards that reduce service options (for example, requirements that eliminate all alternatives to in-house connections) or restrict the emergence of new service providers (for example, granting exclusivity in the service area) could do more harm than good.

In two years of operation, Aguas del Illimani met its first expansion mandate and took many steps to facilitate the expansion of in-house water connections in low-income areas. The company and the Bolivian water regulator were willing to discuss and seek possible solutions to problems associated with servicing poor neighborhoods.

It is too early to tell whether these gains will be sustainable or to predict how privatization will ultimately affect poor households in La Paz and El Alto.

Source: Komives 1999. Available at <http://www.worldbank.org/research/>.

Box S.21. The Buenos Aires Concession

The signing of a concession contract for the Buenos Aires water and sanitation system in December 1992 attracted worldwide attention and caused considerable controversy in Argentina.

It was one of the world's largest concessions, but the case was also interesting for other reasons. The concession was implemented rapidly, in contrast with slow implementation of privatization in Santiago, for example. And reform generated major improvements in the sector, including wider coverage, better service, more efficient company operations, and reduced waste. Moreover, the winning bid brought an immediate 26.9 percent reduction in water system tariffs.

Consumers benefited from the system's expansion and from the immediate drop in real prices, which was only partly reversed by subsequent changes in tariffs and access charges. And these improvements would probably not have occurred under public administration of the system.

Still, as the authors show, information asymmetries, perverse incentives, and weak regulatory institutions could threaten the concession's sustainability. Opportunities for the company to act opportunistically—and the regulator to act arbitrarily—exist because of politicized regulation, a poor information base, serious flaws in the concession contract, a lumpy and ad hoc tariff system, and a general lack of transparency in the regulatory process.

Because of these circumstances, public confidence in the process has eroded. The Buenos Aires concession shows how important transparent, rule-based decisionmaking is to maintaining public trust in regulated infrastructure.

Source: Alcázar, Abdala, and Shirley 2000. Available at <http://www.worldbank.org/research/>.

Box S.22. From Pilot (Yacupaj) to National Program (PROSABAR) in Bolivia

This case study on the scaling up of the Yacupaj pilot project into the National Rural Water and Sanitation Project (PROSABAR) in Bolivia assesses the contribution of both Yacupaj and PROSABAR to reforming Bolivia's rural water and sanitation sector. The study analyzes how the institutional arrangements established in the Yacupaj project created behavioral incentives that led to demand-driven investments and long-term sustainability. It describes the project's rules, processes, and implementation strategy and presents results on the impact of the project at the community and institutional levels. In addition, the study shows how working through nongovernmental organizations and other agencies led to the institutionalization of the project.

Source: Sara, Gross, and van den Berg 1996. Available at <http://www.wsp.org>.

Box S.23. Infrastructure Reform, Better Subsidies, and the Information Deficit: A Case Study of Panama

In developing countries the provision of water and sanitation services is often subsidized. These subsidies take the form of a general underpricing of water, numerous cross-subsidies, and inefficient billing and collection. An essential part of infrastructure reform is the redesign of subsidies. In the design of an optimal subsidy scheme, the key decisions are the choice of eligibility criteria, the level of the subsidy, and the budgetary requirements. However, the lack of consistent and reliable datasets that combine socioeconomic and water consumption information may be an important obstacle to making good decisions, undermining efforts to provide affordable water services for the poor. This note discusses the type of information required, where it can be found, and ways to deal with shortcomings in the data. To illustrate, the note draws on data from work in Panama.

Source: Gómez-Lobo, Foster, and Halpern 2000a.

Available at <http://www.worldbank.org/html/fpd/notes/212/212gomez.pdf>.

Box S.24. Designing Direct Subsidies for the Poor: A Water and Sanitation Case Study in Panama

Direct subsidies are an increasingly popular means of making infrastructure services more affordable to the poor. Under the direct subsidy approach, governments pay part of the water bill of poor households that meet certain criteria. This approach was first used in water sector reforms in Chile in the early 1990s and is an alternative to the traditional method in which governments pay subsidies directly to utilities, often allowing the price of water to fall indiscriminately below economic costs. This note illustrates how simulation techniques can be used to inform the design of direct subsidy schemes, ensuring that they are both cost-effective and accurate in reaching the target population.

Source: Foster 2000. Available at <http://www.worldbank.org/html/fpd/notes/211/211foste.pdf>.

Middle East and North Africa**Box S.25. Management Contracts in Water and Sanitation: Gaza's Experience**

In 1996 a management contract was awarded to help the local government service providers and the Palestinian Water Authority improve water service. Since the contract became active, water quality has improved, water losses have fallen, and consumption and revenues have increased. Despite the improved performance, the management contract has illustrated some of the limitations of this approach to private participation in water supply. This note reviews the contract design and discusses the lessons.

Source: Saghir, Sherwood, and Macoun 1999.

Available at <http://www.worldbank.org/html/fpd/notes/177/177saghi.pdf>.

South Asia**Box S.26. Small Private Initiatives in the Water and Sanitation Sector in India**

In India water and sanitation services are predominantly provided by the government and parastatal agencies. There are very few instances of large-scale formal private sector participation. Where they exist they are mostly service contracts or management contracts. However, a number of small-scale informal private initiatives have emerged to fill the gaps in the existing delivery system. Some of these private initiatives are in partnership with the government, and others have come about on their own in response to demand from clients. See:

Privatizing the Operation and Maintenance of Urban Water Supply: The Experience of Ajmer, Rajasthan, India
http://www.wsp.org/English/Regional/sa/sa_amjer.pdf

Sustainable Community Management of a Multi-Village Water Supply Scheme in Kolhapur, Maharashtra, India
http://www.wsp.org/English/Regional/sa/sa_kolhapur.pdf

Profits from Waste: An NGO-led Initiative for Solid Waste Management in Lucknow, Uttar Pradesh, India
http://www.wsp.org/English/Regional/sa/sa_lucknow.pdf

Villagers Treat Water as an Economic Good, Olavanna, Kerala, India
http://www.wsp.org/English/Regional/sa/sa_olavanna.pdf

Box S.27. Environmental Health Successes in Surat, India

Environmental health problems in Surat, the oldest municipality in India, were at their worst in the early 1990s. This city of 2.2 million was incurring nearly one-half of all diarrheal cases in Gujarat, even though it represented only 5 percent of the state's population. Then, in 1994, it had an outbreak of the plague that made international headlines and cost the city both lives and an estimated US\$1.5 billion in disrupted commerce and trade. Considered one of the dirtiest cities in India, it was mobilized into action despite the tight fiscal constraints common to all Indian municipalities. By 1997 Surat was voted the second cleanest city in India. As a result of prudent actions over four years, water supply and sanitation coverage has improved considerably, and the incidence of diarrheal disease has dropped to only 10 percent of the state total. The plague disappeared. Incidents of malaria—correlated with stagnant surface water and poor drainage—dropped significantly. These health gains were achieved largely through decentralization, improving efficiency, enhancing infrastructure performance standards, and strengthening health services.

In addition, sanitation and drainage infrastructure in the city has been extended: 217 of the previously 253 unserved slum communities have been provided with proper sanitation (including toilets) and drainage facilities. The city has upgraded two sewage treatment plants, which now meet discharge standards. Solid waste management has dramatically improved, to a collection efficiency of nearly 98 percent, and has been partly contracted out in order to make it financially viable. The city also operates a controlled landfill. To combat air pollution, traffic management has been streamlined with the intention of reducing congestion and hence vehicular emissions, but reductions in ambient levels are yet to be recorded. Unleaded gasoline will be introduced shortly.

Box S.26. Environmental Health Successes in Surat, India (continued)

The municipal corporation collects 85 percent of its property tax—the highest rate for any city in India—and has earned an investment grade credit rating. Its infrastructure policies and investment planning have met its urgent environmental needs in a way that is consistent with sound urban fiscal management. To continue making progress in badly needed infrastructure, the city has made ambitious plans to reach full coverage in the provision of piped water supply, expand the sewerage system to cover one-half the city's population, and introduce buses fueled by natural gas.

Source: Carter 1998. Available at <http://www-esd.worldbank.org/envmat/vol1s96/>.

Box S.28. Health Impact of Water Supply, Sanitation, and Hygiene Education in Mirzapur, Bangladesh

The United Nations Development Program–World Bank Water and Sanitation Program undertook a study of an integrated project comprising handpumps, improved latrines, and hygiene education in the Mirzapur area, a rural area some 60 kilometers north of Dhaka, Bangladesh. The cost of the three project components was US\$15.16 per inhabitant (slightly less than 10 percent of per capita gross domestic product), and was distributed as follows: \$6.89 for handpumps, \$4.67 for latrines, and \$3.60 for hygiene education. The study involved longitudinal follow-up over four years of an intervention area and a control area, some 5 kilometers apart, each with a population of about 5,000. Regular questionnaire surveys, combined with occasional observational studies to confirm the accuracy of responses, were used to investigate the use of the new facilities and compliance with hygiene education messages.

The results showed substantial differences compared to the control area regarding handpump water use, latrine use, use of ash for hand cleansing after defecation. The project had a significant impact on childhood diarrheal disease in the intervention area, where the incidence of diarrhea fell to three-quarters of that in the control area. The prevalence of diarrhea in small children and the proportion of days on which the average child suffered from diarrhea were both reduced by almost half. Analysis of diarrhea rates in subgroups within the intervention area suggested that they were lower among households within 25 meters of a handpump and among those using handpump water exclusively for all major domestic activities in the wet season. The rates were also lower among those disposing hygienically of the feces of children under three years of age. In spite of the project's impact on diarrhea, no impact was detected on the nutritional status of small children in the intervention area. Finally, the project interventions reduced the prevalence of *Ascaris* infection by more than one-third.

Source: Aziz and others 1990.

Box S.29. Lessons from Sri Lanka on Community Water Supply and Sanitation

The Community Water Supply and Sanitation Project (CWSSP) in Sri Lanka is one of the few examples of a large-scale project that has attempted to establish project rules that respond to user demand and community preferences. The project employs "structured learning" as a tool to modify the project's rules and processes. Structured learning is the process of establishing monitoring mechanisms, collecting data, and analyzing a project as it progresses. This study explores CWSSP's experience with structured learning and examines how project staff created a culture of learning and flexibility among all stakeholders, including the government, project staff, partner organizations, and communities.

The study examines how structured learning and an adaptive project design has helped to achieve the objectives of the project. It describes how the project's rules and processes were originally established, monitored, and later modified, and how the project gradually moved away from predefined needs and closer to user demand. The study illustrates how the project rules have changed and why and what more needs to be done to design investments that respond to demand.

Source: Minnatullah, Hewawasam, and Gross 1998.

Technical Note S.7 Design of Pro-Poor Private Sector Participation Arrangements

Shared Responsibilities: Possible Roles for Government and the Private Sector

An increasing number of low-income countries have turned to the private sector to finance, implement, and operate infrastructure systems, notably in the telecoms, power, and transport sectors. The experience in these sectors has mostly been positive, as increased competition and large efficiency gains have led to the emergence of innovative technologies and performing systems, substantially decreasing unit cost, thus granting more users, especially the poor, access to services. Macroeconomic effects also have been significant. Removing a number of infrastructure bottlenecks has stimulated growth, which in turn has benefited the poor.

Success in these sectors has led to a rethinking of the role of government in the provision of water and sanitation services. Indeed, in recent years a number of private sector projects have emerged in the water and sanitation sectors.

The more risk and responsibility a government hands over to the private sector in water and sanitation, the more powerful the incentives for better performance. At the same time, the government must accept increased responsibility for negotiating an appropriate contractual arrangement and then regulating and monitoring the new service provider. A government about to enter into a long partnership for a water concession or build-operate-transfer arrangement—typically for 25 to 30 years—needs to be sure that it does not overlook details that will later land it in messy renegotiations. A lease is less demanding, but it offers smaller gains and will not fix such problems as chronic underinvestment. It will, however, give the government time to prepare a longer-term option.

Tables S.1 and S.2 below set out the range of options for involving the private sector in water and sanitation and document the lessons learned regarding private participation in water and sanitation services provision.

Addressing Concerns about the Implications of Private Sector Participation

Most poor communities are served by the private sector, especially at the retail level by water vendors. The establishment of a public-private partnership may provide proper incentives to improve service in poor communities, if appropriate regulatory and monitoring systems are incorporated into contracts and effectively implemented. Effective management and oversight of private operators has been the key challenge to improving service to the poor. Some of the lessons learned about the design of pro-poor, private sector service arrangements can be found in papers presented at a recent conference on this subject (see <http://www.ppiaf.org/ppiandthepoor/presentations.html>).

There is always reluctance to consider the private sector for addressing the service gap for the poor. The belief is that water is a basic need, a social good that can best be provided by the public sector at low cost. In practice, the public sector, because of a lack of finance and incentives, has often failed to reach the poor, and the poor have instead relied on a number of private options. Indeed, the private sector (small scale) is generally already present in poor areas. The question, therefore, is whether existing arrangements should be fully replaced, or whether the formal sector—public or private—could capitalize on the strengths of the small-scale sector.

Service arrangements should be analyzed on the basis of comparative advantage. For instance, the formal sector is much better placed in terms of access to the resource, and it could sell bulk water to poor neighborhoods. This design could go a long way toward reducing the cost of water for the poor (removing bottlenecks, such as a water truck having to travel long distances, increasing water costs, and problems of water quality).

Table S.1. The Main Options for Private Sector Participation and Their Allocation of Responsibilities

<i>Option</i>	<i>Asset ownership</i>	<i>Operations and maintenance</i>	<i>Capital investment</i>	<i>Commercial risk</i>	<i>Duration</i>	<i>Provision by government</i>
Public provision	Public	Public	Public	Public	Indefinite ?	
Service contract	Public	Public and private	Public	Public	1–2 years	
Management contract	Public	Private	Public	Public	3–5 years	
Lease	Public	Private	Public	Shared	8–15 years	
Concession	Public	Private	Private	Private	25–30 years	
Build-operate-transfer	Private (bulk services)	Private	Private	Private	20–30 years	
Divestiture	Private	Private	Private	Private	Indefinite	

Table S.2. Prerequisites for Successful Implementation of Different Private Sector Options

Option	Stakeholder support and political commitment	Cost-recovering tariffs	Good information about the system	Developed regulatory framework	Good country credit rating	Potential benefits of the option
Service contract	Unimportant	Not necessary in the short term	Possible to proceed only with limited information	Minimal monitoring capacity needed	Not necessary	
Management contract	Low to moderate levels needed	Preferred but not necessary in the short term	Sufficient information required to set incentives	Moderate monitoring capacity needed	Not necessary	
Lease	Moderate to high levels needed	Necessary	Good information required	Strong capacity for regulation and coordination needed	Not necessary	
Build-operate-transfer	Moderate to high levels needed	Preferred	Good information required	Strong capacity for regulation and coordination needed	Higher rating will reduce costs	
Concession	High levels needed	Necessary	Good information required	Strong regulatory capacity needed	Higher rating will reduce costs	
Divestiture	High levels needed	Necessary	Good information required	Strong regulatory capacity needed	Higher rating will reduce costs	

Not significant (white), low (gray), moderate (medium gray), high (dark gray)

Note: The shading signals the degree of importance:

Conversely, local water vendors are probably better placed to provide tailored water services to poor neighborhoods, peri-urban areas with uncertain land tenure, and so forth. They know their customers better and can tailor services to them from technical and financial standpoints.

Successful private sector participation (PSP) requires a balanced partnership between the private sector and the government client. The regulatory role is crucial: if the government or utility is not well versed in the practice of measuring financial and technical performance in the sector, they are not likely to make good clients and regulators without substantial institutional development. Well-designed contracts containing the right balance of minimum standards with penalties and success incentives are key factors. Where substantial PSP contracts are being considered, the regulatory authority will need to focus on services to the low-income areas, because the operator will be inclined to focus on the richer areas to maximize income.

The PSP scheme can combine concession incentives and partial private financing with targeted use of government sources for such activities as service expansion to the poor, household subsidies, or time-bound revenue deficiency funds.

Some ideas to consider in the analysis include the following:

- ⊃ Tailor service delivery modes to different groups (for instance, bulk service with community retailing for untenured slums).
- ⊃ Leave space for small scale private providers.
- ⊃ Prompt the concessionaires to offer users a range of technology options at different prices.
- ⊃ Target any subsidies to new connections rather than water usage.
- ⊃ Before designing a PSP scheme, talk to users, including the poor, and look at the ways in which they have been obtaining services.
- ⊃ Implement “micro-liberalization” of the services the poor receive from informal vendors to facilitate entry in this business and deter water cartels.

- ⊃ In designing the contractual service targets, think about those people who will not get hooked up before the outer years of a concession, and define interim solutions that could improve service and reduce costs to them (such as bulk service by the concessionaire with local retailing by community-based organizations (CBOs) and NGOs).
- ⊃ Waive legal restrictions on serving people (with at least standpipes or yard taps) who do not have land title.
- ⊃ In very poor countries consider projects in which the private sector would finance trunk infrastructure and services to the more affluent parts of town, and donors or government would finance targeted programs for service expansion in slums (the concessionaire could execute these programs, then operate the services).
- ⊃ Encourage partnerships between utilities and CBOs and NGOs.

Table S.3. Characteristics of the Most Recent Approach to PSP Contracts

<i>“New” PSP paradigm</i>	
Financial incentives	Universal service obligation as a principle, but flexibility in implementing it (output indicators, redefinition of coverage); realistic timeframe
Users’ contributions	Tailored financing arrangements; allowing the poor to pay in kind through labor
Technology	Differentiated and tailored service standards
Standards	More reliance on output standards (e.g., user satisfaction)
Market structure	Allowing entry of large- and small-scale competition, notably at the retail level
Legal framework	More flexible but effective regulation
Subsidies	One-time subsidies on capital investments (e.g., water connection, latrine)
Expansion	Use of unconventional means to reach out to the poor, or combination (e.g., conventional bulk supply, retailing by small-scale independent providers, either network- or non-network-based solutions)
Pricing	Full cost tariffs (uniform tariffs) with rebates, or subsidy for connection
System integration	System is unbundled, multiple players in financing and operation of tertiary networks (or non-network retailing); need to pay attention to interconnection with effective partnerships
Regulation	<ul style="list-style-type: none"> ⊃ Output based ⊃ Monitor competition and prices at retail level (for all types of water provision) and bulk supply ⊃ Water quality both at production site and at point of use (network or not) ⊃ Promote participation and community involvement

If care is taken in analyzing the distribution of benefits, and this is done early, private intervention can help improve contract designs and yield more socially sustainable outcomes. Table S.4 shows how up-front analysis of economic and financial outcomes can help design concessions that more effectively achieve distribution objectives.

Table S.4. Possible Pro-Poor Modifications to Concession Structures

<i>Concession structure initially proposed</i>	<i>Problems identified</i>	<i>Adjustments made to draft concession documents</i>
Ambitious service expansion targets in the initial years of concession	<ul style="list-style-type: none"> ⊃ Concessionaires will suffer liquidity problems in the early years of concession ⊃ Concessionaires will not get sufficient rates of return on investments ⊃ Expansion targets are unlikely to meet customers' willingness to pay for services 	<ul style="list-style-type: none"> ⊃ Expansion targets in the initial years were reduced ⊃ Capital subsidy, especially for sewage treatment, was introduced ⊃ Secondary network costs charged to all customers, through a surcharge, instead of being charged to new and mostly poor customers
No clear strategy to address the issue of the poor	<ul style="list-style-type: none"> ⊃ New and poor customers may be losers of the reform program 	<ul style="list-style-type: none"> ⊃ Secondary network costs charged to all customers, through a surcharge, instead of being charged to new and mostly poor customers ⊃ Use of canon payments to provide direct investment subsidies to the poor ⊃ Introduction of appropriate technologies to reduce cost of service to the poor ⊃ In very special cases, the possible introduction of lifeline rates can be considered

Source: Van den Berg 2000.

Child mortality	<ul style="list-style-type: none"> ➤ mortality rate (deaths per 1,000 live births) of children under five years ➤ diarrhea-caused mortality of children under five years (ratio of deaths caused by diarrhea in children under five to all deaths in the same under-five group) 	Demographic and Health Surveys (DHS), vital registries, World Health Organization (WHO)	Records from vital registries may be unreliable.
Prevalence of malnutrition in children <ul style="list-style-type: none"> ➤ stunting (chronic) ➤ wasting (acute) ➤ underweight (combined) 	<ul style="list-style-type: none"> ➤ Percentage of children below minus two standard deviations from the reference median in terms of <ul style="list-style-type: none"> – height for age, – weight for height, and – weight for age 	DHS, multi-topic household surveys (LSMS/IS), CWIQ with the National Center for Health Statistics/WHO providing benchmarks	Stunting, wasting, and underweight can be more accurately measured than the incidence of diarrhea or other water-related diseases. They also better capture the chronic harmful effects of lack of adequate access to water and sanitation. However, these measures of malnutrition depend on factors such as food availability that are beyond the scope of water and sanitation interventions.
Incidence of water-related or sanitation-related diseases	<ul style="list-style-type: none"> ➤ Incidence of diarrhea within last 15 days ➤ Number of episodes of diarrhea per year ➤ Prevalence of parasitic infections, for example: <ul style="list-style-type: none"> – Ascaris – Trichuris – Hookworm ➤ Prevalence of other diseases: <ul style="list-style-type: none"> – Hepatitis A – Malaria 	DHS and multi-topic household surveys such as the LSMS regularly collect information on diarrhea incidence. Data collection on the incidence of other diseases varies by country.	Collection of information on some diseases may require laboratory equipment and substantial expertise.

Goal: To achieve gender equality in education

<i>Impact indicators</i>	<i>Definition</i>	<i>Data sources</i>	<i>Remarks</i>
Ratio of girls to boys in primary and secondary education	<ul style="list-style-type: none"> ➤ Primary gross enrollment ratio for girls as a percentage of the primary gross enrollment ratio for boys ➤ Secondary gross enrollment ratio for girls as a percentage of the secondary gross enrollment ratio for boys 	Census, multi-topic household surveys (LSMS/IS), CWIQ, EMIS	Enrollment rates are usually considered as outcome indicators. However, for goals related to water and sanitation, they may be a more relevant impact indicator than, for example, literacy rates or learning achievement.

Use of sanitation facilities	<ul style="list-style-type: none"> 3 Percentage of household in which all members three years and older use a sanitary facility for defecation 3 Percentage of household with surroundings free of human wastes 	<p>price and expenditures information: income/expenditure surveys; multi-topic household surveys (LSMS/IS)</p> <p>Specialized surveys</p>	<p>For urban areas, water consumption may be estimated by using price and expenditure information on water from household surveys.</p> <p>Information infrequently collected; generally not representative at the national level</p>
Access to safe water	<ul style="list-style-type: none"> 3 Percentage of household with access to safe water supply (rural/urban): <ul style="list-style-type: none"> – with private access – with shared access (within 30 meters of residence) 3 Percentage of primary and secondary schools without <ul style="list-style-type: none"> – water supply – latrines 	<p>Census, multi-topic household surveys; DHS, CWIQ/PS</p> <p>Facilities surveys (conducted as part of some multi-topic household surveys)</p>	<p>Proxy indicators for water consumption.</p> <p>A consistent definition of what is considered “safe water and convenient access” needs to be established.</p>
Access to adequate sanitation	<ul style="list-style-type: none"> 3 Percentage of households connected to piped sewer system (rural/urban) 3 Percentage of households with access to sanitary latrine within 10 meters of residence (rural/urban) 	<p>Census, multi-topic households surveys, CWIQ/PS</p>	<p>Proxy indicators for use of sanitation facilities.</p> <p>A consistent definition of what is considered “adequate sanitation and convenient access” needs to be established.</p>
Quality of service	<ul style="list-style-type: none"> 3 Percentage of households without continuous water supply during the day 3 Percentage of households with water shortages during the dry season 3 Percentage of households reporting satisfaction with water and sanitation 	<p>Multi-topic household surveys (LSMS)</p> <p>Qualitative studies</p>	<p>Complement access indicators; capture issues of seasonality and satisfaction with services</p>
Hygienic practices	<ul style="list-style-type: none"> 3 Percentage of households washing hands after defecation <ul style="list-style-type: none"> – before and after cleaning children – before handling food 	<p>Knowledge, Attitude and Practices (KAP) survey; qualitative studies</p>	<p>Hygienic practices are an intermediate link in the chain that leads to disease prevention. Since they are promoted in part by better access to water and sanitation, they can be used as a proxy for water</p>

	› Utility staff per 1000 connections	installed by small local communities.
Expenditures/ investment level	› Capital investments (public and private) in water supply (rural/urban) › Capital investments (public and private) in sanitation (rural/urban)	Utility records, government statistics
Goods/services generated	› Percentage of wastewater captured › Percentage of wastewater treated › Number of newly installed water points (connections or other): shared private › Number of newly installed sanitary latrines	Ministry responsible for water and sanitation, utility records

Notes: CWIQ: Core Welfare Indicators Questionnaire; DHS: Demographic and Health Surveys; EMIS: Education Management Information Systems; IS: Integrated Survey; LSMS: Living Standards Measurement Survey; PS: Priority Survey; WHO: World Health Organization.

Sources and further reading: Gómez-Lobo, Foster, and Halpern (2000a); Gómez-Lobo, Foster, and Halpern (2000b); Jalan and Ravallion (2001); World Bank (1999, 2000).

Web sites: WHO, Water supply and sanitation sector monitoring at http://www.who.int/water_sanitation_health/wss/Monitoring1.html; WHO/UNICEF, Joint Monitoring Program for Water Supply and Sanitation at http://www.who.int/water_sanitation_health/Archives/Monitoring3.html; UNICEF, Sanitation access: Data dilemmas at <http://www.unicef.org/pon97/p10a.htm>.

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