Global Consultation on Safe Water and Sanitation for the 1990s

FINANCING WATER SUPPLY AND SANITATION SERVICES

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FINANCING WATER SUPPLY AND SANITATION SERVICES

A Contribution from the Collaborative Council
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on Financial Resources Generation
Based on a Draft Paper Prepared by
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EXECUTIVE SUMMARY

The paper is about financing water supply and sanitation services in developing countries. The intended audience for the paper is decision-makers in the Collaborative Council, other ESAs, governments, NGO's, and the private sector who make policy and allocation choices affecting the water supply and sanitation sectors (WSS). The paper identifies key financial issues, suggests reasons for their persistence, and considers how they might be resolved. This summary highlights major points in the paper.

PRIMARY FINANCIAL ISSUES

1. The levels of finance currently mobilized by the sector are, even at current per capita costs, insufficient to achieve even a modest rate of expansion of coverage.

2. The weaknesses of service institutions create grave doubts whether all of those currently served will continue to receive reliable and sustainable services.

3. Those providing the services often do not make effective use of the resources available.

4. Too frequently, inappropriate design levels of service are adopted and cost recovery inadequate.

5. Current practice on the allocation of financial resources and user charges in many countries results in a situation in which a limited number of people receive a comparatively high level of service (for which they pay little relative to its cost) while many others have a very poor level of service (often at high cost).

PRIMARY CAUSES

1. Funds available to the sector have been less than expected largely because of the severe economic downturn experienced by a majority of developing countries in the 1980s.

2. Although in some cases, higher priority was assigned to the sector by governments and ESAs, funds on a global basis were insufficient to cope with the high rates of population growth.

3. Real costs have risen, especially owing to increasingly limited water resources, inappropriate design standards or poor management.

4. Service institutions are given little incentive to operate efficiently; government regulations and policies often act a disincentives.

5. Willingness to pay of potential users is often inadequately understood, tested, and mobilized, leading either to inadequate cost recovery or exaggerated forecasts of tariff revenue.

POSSIBLE SOLUTIONS

1. In practice, the objectives of universal coverage of the population and of ensuring the sustainability of services have been in conflict. In future, investment choice (level of service, size, and timing of investment) should be more closely linked to willingness to pay and sustainability of services.

2. Users themselves may bear a greater proportion of the cost, by conventional tariff systems supported by metering, billing, and collecting improvements or, where this is inappropriate, through alternative methods of cost recovery.

3. A high priority is to encourage more effective use of <u>available</u> financial resources, which includes:

   a. increasing the efficiency of sector institutions by:
      1. improving the incentive environment;
      2. encouraging decentralization of responsibility to the extent appropriate; and
      3. effective human resource development.

   b. improving operational performance and maintenance of existing systems; user charges can contribute to improved performance by creating incentives to supply institutions to be responsive to user concerns about service quantity and reliability.

4. Increasing the awareness of the importance of the sector, in particular in its relevance to environmental and health concerns, in order to mobilize <u>additional</u> financial resources.

FUTURE ACTIONS

The future financial status of the sector depends upon concerted efforts by supply institutions, governments, and ESA's to address the major sources of financial weakness in the sector. To this end, the following actions are recommended:

1. Decide on investment choices only after having carefully assessed the users' willingness to contribute or pay.

2. Ensure that communities, particularly rural and low income communities, are fully involved in initial investment

decisions.

3. Initiate hygiene education and other programs to increase the awareness of benefits and hence their effective demand for services, provided such increase has no adverse effect on the sustainability of water resources and the environment.

4. Components for institutional and human resource development should be included in projects to improve the operation and management of service facilities.

5. Governments and ESAs are to study systematically how to create an institutional environment which clarifies the responsibilities of the different actors and rewards efficient behavior and apply the findings to future actions.

6. Governments and ESAs, in designing programs in the sector, are to document and emphasize the benefits to socio-economic development and environmental protection to policy and decision-makers to help generate additional resources.

7. In project identification, governments and ESAs should give priority to rehabilitation measures versus new investments, if these measures lead to extension of service coverage to the unserved.

FINANCING WATER SUPPLY AND SANITATION SERVICES

I. INTRODUCTION

This paper is about financing water supply and sanitation services in developing countries. Its intended audience is decision-makers in the Collaborative Council, other ESAs and NGOs, government and in the private sector who make policy and financial allocation choices affecting the water supply and sanitation sectors (WSS). The paper will identify some key financial issues, suggest reasons for their persistence, and consider how they might be resolved.

The problems, and possible solutions, can best be viewed in relation to those involved; whether as users, suppliers of services or providers of finance. Some may have more than one role, and interests may conflict. The major actors are as follows:

- o individuals and households;
- o institutions responsible for delivering services;[1]
- o other government organizations;[2]
- o other providers of finance; and
- o the private sector.

Individuals and households clearly have a dual interest--as service users and as managers of their own money and time. Service institutions require financial resources sufficient to meet their on-going financial obligations (for operations and maintenance and for repayment of principle and interest on past debts). Service institutions sometimes have the responsibility, also, to obtain financial resources for investment in new facilities and the rehabilitation of existing facilities. The

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[1] There is no ideal term to cover the great variety of institutions which might be responsible for local provision of services and for meeting financial obligations for these services. In this paper, terms such as "supply institution" or "providing institution" for whomever has the two sets of responsibilities just mentioned. In different contexts, these terms can refer to individual households (self-provision), community groups, local government departments, or formally structured public or private utilities.

[2] References to governments are to developing country governments unless otherwise noted.

interests of other government organizations may be expressed through a variety of roles: (1) regulation and sector policy; (2) allocation of total public sector expenditures and investment; (3) direct investment in the sector; (4) provision of finance from government revenues to local institutions for meeting investment costs and operation and maintenance cost; and (5) mobilization of financial resources (grants and loans) from other sources. Other sources of finance also have a variety of developmental and financial interests and are willing to provide funds, on the basis of agreements which reflect these interests, with those responsible for mobilizing resources for provision of services. The private sector's interests include construction contracting, materials provision, and (increasingly) contracts for operation and maintenance of facilities.

The decade of the 1980's, unfortunately, has been an extremely difficult one for both domestic resource mobilization and expenditure. Nor has it been a good period for increasing external resource mobilization. Extensive external borrowing in previous decades has resulted in large outflows to meet debt obligations. In 1988, heavily indebted countries paid out about 4.7 percent of GDP. From 1986 to 1988, the net outflow from these countries was over $100 billion. Sub-Saharan Africa has been a particularly hard-hit region. These countries, while not as heavily indebted in total, have a much larger debt to export ratio and debt to GNP ratio than the seventeen most heavily indebted developing countries.

During the 15 year period from 1965 to 1980, income grew rapidly enough that 9 out of 10 developing countries had positive growth in per capita income. During the 1980's over half of them experienced a reduction in per capita income and in more than 80 percent of these the decline was more than 1.5 percent a year (See Tables 1 and 2 for details).

Many countries have reduced or eliminated spending that does not have a direct positive impact on macroeconomic growth. To date, the sector has generally not been able to make a strong case for additional allocations based on macro-economic impact. A major unresolved question is the effect of the overall financial situation on investment in the water supply and sanitation sector.

Comprehensive data is not available on the changes in public investment and the share of that investment allocated to water supply and sanitation. This paper provides an estimate, however, based on recent public investment and expenditure reviews conducted by the World Bank. Data on 29 countries, with each major region represented, were included in the estimate. This research shows that total public investment declined, on average, from 10.9% of GDP in 1985 to 8.7% in 1988. Over this same period, investment in water and sanitation held virtually

constant at about 0.4% of GDP or about 4.3% of public investment. If these shares are taken to be representative of all developing countries, total investment in water supply and sanitation averaged about US $9 billion (1985 dollars) per year over the period (see Figures 1-3). Research by WHO, based on the CESI system, has suggested that ESA's have increased their allocations to the sector slightly and have provided about US $3 billion a year of the $9 billion total.

The positive aspects of these figures--the relative stability of the shares of GDP and a slightly increased share of public investment allocated to the sector--are overshadowed by their negative implications for future coverage. These levels of investment are insufficient to provide services to cover projected population growth at current per capita costs even without any increase in coverage for those currently unserved. Moreover, the financial problems of local institutions, to be discussed below, create grave doubts that all of those currently served will be provided with reliable and sustainable services.

The financial situation may well be even more severe than these figures suggest since additional cost increasing pressures should be expected over the next decade. Because of an explosive combination of factors -- growing water scarcity, deteriorating water quality, limited investment in waste collection, treatment, and reuse of water, as well as continued rapid growth in water demand for competing uses of available water -- the only reasonable assumption to make for the 1990's is that the cost of water provision and its environmentally safe collection and disposal will rise dramatically. This is likely to pose major financial requirements if water supply services are to be expanded at the higher costs and, at the same time, the relatively neglected requirement for improved sanitation, waste collection, and its disposal is to be met at even larger costs.

The conclusion is that virtually all developing country governments will be forced by financial pressures in the coming decade to substantially rethink their investment and expenditure priorities in the sector. There is unlikely to be financial leeway for the sector. There will be little financial room for strategies which adopt levels of service that create larger financial burdens on users than they are willing to shoulder, and there will be insufficient financial capacity to support even a modest rate of expansion of coverage.

The primary financial issues which remain, at the end of the Decade, substantially unresolved in many countries appear to be these:

- The level of finance mobilized by the sector relative to population coverage targets of governments is inadequate.

- The capability of service institutions to sustain and improve services from available financial resources is often insufficient.

- In the provision of water and sanitation services (WSS) the effective use of the resources which are available to extend coverage and to sustain and improve services once provided is often not made.

- The willingness to pay for services is often inadequately understood, mobilized, and tested and this has lead to use of inappropriate levels of service and inadequate cost recovery.

The question of equity relates to all the above issues. Current practice in the allocation of financial resources and user charges in many countries results in a situation in which a limited number of people receive a comparatively high level of service (for which they often pay little relative to its cost) while many others have a very poor level of service (often at high cost).

There are many reasons these issues remain unresolved. The text will discuss the most important of these relating to: (1) government and ESA roles in sector policy, regulation, and as providers of sector finance; (2) service institution behavior and performance; and (3) potential consumer willingness to use and pay for services. The paper will then explore where and how to look for solutions, and will conclude with a recommended future action agenda.

II. REASONS FOR PERSISTENCE OF UNRESOLVED ISSUES

A. Governments and External Support Agencies

Governments and External Support Agencies as Providers of Finance

Since government and external support agencies provide most of the finances available to the sector, the aggregate level of sectoral finance depends on the mobilization of public sector finance (predominantly taxes, public sector borrowing, external loans and grants, and user charges) and its allocation across sectors. The private sector has had a limited role up to now in either the provision of services or in providing finance. It should be noted, however, that large numbers of people are essentially providing for their own water and sanitation services in their private capacities (often at greater private expense in time and money for inadequate services than the expenses of those covered).

Levels of investment during the 1985-90 period provide only about $4 for each person who is not now adequately served plus the new population during the period. For comparison, the World Bank has estimated, however, that per capita investment costs in urban areas average about $120 for water supply and $150 for sanitation, even with extensive adoption of low cost technologies. Equivalent rural costs are estimated to be $40 for water supply and $20 for sanitation.

The degree of future coverage achievable with a given level of sector finance is sensitive to (1) the allocation of investments between urban and rural areas and between water supply and sanitation, (2) to the rate of change in per capita costs, and (3) to the rate of future growth in GDP. It is estimated, for example, that the allocation of sufficient funds to provide water to only the additional population between 1985 and 1990 (with no increase in coverage for those currently unserved), assuming per capita cost increases were to be held to 2% a year and GDP were to grow by 3% a year, would leave only enough investment funds to provide sanitation services to a little over a third of the additional population. If per capita costs grow by 3% a year and growth of GDP were to be only 2% a year, the level of investment funds would be only able to achieve water coverage to about 90% of the additional population and sanitation to less than a quarter of them.

Current financial mobilization strategies rely predominantly on central government subsidies generated from a variety of sources such as tax revenues, intersectoral transfers, and external grant and credit assistance. The mechanisms used to channel these funds to the sector are highly variable and cannot all be covered by this paper. Most commonly, however, funds are used for direct central government investment or made available through formally structured or discretionary grants and transfers to local organizations and administrations. Increasingly widespread is the creation of special funds using earmarked funds to provide support to sector projects.

A major problem with all of these mechanisms is that they encourage a top-down approach to decision making which does not always take the ultimate beneficiaries into consideration. Resources end up being provided without proper concerns for user perceptions of the value of the improvement, for recurrent cost implications, and for selection of service levels for which users are willing to pay. The result may be the construction of facilities which are underutilized by the intended beneficiaries or are excessively costly.

In addition, weak planning and budgeting capacity as well as competing claims on restricted central resources often means that government and external funding can be both limited and erratic leaving service agencies unable to depend on a regular flow of

resources. Resultant cash flow restrictions make it difficult for such institutions to provide adequate and reliable service, let alone meet additional financial requirements. The situation is often made worse since agencies' revenues are not necessarily related to the quality of service they provide but, rather, to the case that each agency can make to the central authorities for more funds to cover costs. Poor performance is thus often rewarded by additional funds, undermining sector incentives to control costs, raise revenues or improve financial performance.

Government Roles in Setting "Rules of the Game"

The preceding discussion should help make it clear that significant expansion of service coverage and the continued provision of services to those with access to services will require more than an increase in the aggregate level of funds. It will require,also, efficient performance of local supply institutions and an increased willingness of those who benefit from water and sanitation services to pay for the services. Consideration needs to be given, therefore, to how ESA conditions, government priorities and "rules of the game" are likely to affect institutional performance and beneficiary willingness to pay.

Sector-wide policies, institutional structures, the "rules of the game" under which the institutions operate, the relative roles of the public and private sectors, the tax and transfer mechanisms employed by governments, the roles of financial intermediaries, and the sectoral activities of external support agencies, all have impacts on the operational and financial performance of service providers. These influences can be loosely described as forming the 'incentive environment' in which the local supply institutions operate.

Some of the "rules of the game" directly affect what supply institutions can and cannot do; while, in other cases, they influence the behavior of supply institutions through the incentives and disincentives they provide for efficient performance. Although we cannot explore these incentive effects in great detail here, their implications reach well beyond the debates about cost recovery which have tended to characterize sectoral discussion of financial issues. Government policies and other rules which have reduced incentives for efficient performance include, but are not limited to, the following examples:

- Restrictions on the types and spatial locations of service institutions which are eligible for financing which inhibit access to funds to institutions which have a demonstrable capacity to perform efficiently and meet agreed financial obligations.

- Direct investment in facilities to be turned over to local institutions to operate and maintain without local involvement or prior identification of the life-cycle costs of the facilities and agreement with the local institution on system selection and on who will bear what costs.

- Widely differing conditionality on the granting or onlending of resources from ESAs to local institutions.

- Non-transparent procedures and practices in allocating public sector transfers to local institutions.

- Exclusive or preponderant use of grants rather than loans to supplement local institution revenues from users, particularly when the funds are to be used for investment in new or rehabilitated facilities.

- Non-transparent and inconsistent policies for setting and adjusting the levels and structure of user charges.

B. Local Supply Institutions

The financial performance of many, if not most, of the supply institutions in the sector, particularly in rural areas, is precarious at best. On almost any recognized financial criterion, performance is very low.

The most glaring deficiencies are the following: (1) lower numbers of users or customer connections than had been expected; (2) lower sales volumes than expected both in absolute terms and on a per-connection basis; (3) much larger increases in operations and maintenance costs than had been expected; (4) low revenues as a result of inadequate billing and non-payment of tariffs in urban areas and failure to develop appropriate charging systems in rural areas; and (5) system deterioration due to inadequate maintenance practices. The direct financial consequences of these results are easy to understand--substantially reduced ability to meet financial obligations from cash flow, the need for unanticipated additional financial assistance, the reduction or elimination of cash flows to cover depreciation or to finance expansion, and pressure to further increase charges to users. What is much more difficult to understand and deal with are the causes of this poor performance.

The causes of poor investment choices (i.e. those not tailored to effective demand and willingness to pay) and inefficient management can be viewed in two fundamentally

different, although not necessarily mutually exclusive, ways. The predominant view suggests that poor performance is the result of management and staff being improperly or inadequately prepared to (1) cope with the advanced technologies frequently employed, or (2) perform in an efficient manner. From this perspective, the problems can be remedied by better technology choices, improved technical assistance, training, improved personnel practices, higher salaries and the like. No doubt these inadequacies contribute to the problem and can be addressed by these methods.

The second view, which was suggested above and seems to offer a more profound explanation, is that managers and staff in the sector approach their tasks quite rationally and attempt to respond effectively to the "incentive environment" created by "the rules of the game" implicit in sector policy and financial strategies. This suggests that poor performance can be addressed by changing the incentive environment and is unlikely to be improved significantly by pleas to perform more efficiently. The signals which most significantly shape the incentive environment originate with ESA and government regulations and conditionality determined independently from the local service institution and must be addressed where they originate.

Whatever the causes, observed performance of local institutions shows a low degree of efficiency in investment and in management:

- Inefficient Investment and Inadequate Attention to Demand: A major source of the financial and coverage problems in urban areas (and to somewhat lesser extent in rural areas) has been overestimation of consumer demand and willingness to pay for service improvement at the time of investment. Neither the number of users nor per capita consumption have matched expectations. This implies that perceived benefits by potential users were not as great as expected, income levels were lower than expected, and probably that the prices charged to meet the financial obligations were higher than expected. The degree of over-estimation has often been substantial and has lead to premature or oversized investments in some places and to the deferral of other investments elsewhere. In some rural areas, the problem has been underestimation of willingness to pay and, therefore, failure to provide services at levels for which people are willing to pay; and, more often, a reluctance of governments to charge rural users even when they are willing to pay for services provided.

- Inefficient Operations, Maintenance, and Financial Management of Existing Assets: To be sure, a substantial share of the blame for inefficient management can be laid at the door of the institutions themselves. Produced water is lost through leakage. Illegal connections, inadequate metering, and poor financial practices result in lost revenue. Water usage is not properly billed and, if billed, collection rates are low and delinquencies are high. In rural areas this is a particular problem when dealing with often widely dispersed settlements and where payment for communal water points raises its own problems relating to perceived benefits and value for money. Effective managers and staff are underpaid and leave the institution too early. Neither management nor staff rewards are linked to efficient performance. Maintenance tends to be neglected when there are cash-flow crunches particularly in rural areas. The resulting decrease in quality of service inevitably has an adverse effect on people's willingness to pay which in turn affects revenue. Improvements in institutional efficiency thus have to be viewed as one of the major financial resource generation strategies; both in terms of holding down costs and increasing the revenue from production.

C. Users of Services

Rationale for User Charges

It is difficult to overestimate the importance of user payment for services in providing a regular source of revenue for the sector and to help provide incentives for improvement of service institutions. One of the most promising features of the Water Supply and Sanitation Decade has been the much broader recognition by governments and external support agencies alike, that both effective provision of services and financial realities imply that users should bear, at least part of the costs, for the services they receive. However, it is unrealistic to expect users to pay for services that they do not value as highly as the level of payment which they are expected to make. This implies that supply institutions must understand user willingness to pay, in making their operational and investment choices and in their financial planning. Supply institutions have the responsibility to choose appropriate standards and levels of services and to adequately operate and maintain the systems.

For many years it was believed that people in developing countries, particularly those in rural areas, could not afford to pay for water. Furthermore, it was often perceived that access to water was a social right which the Government was obliged to

freely provide. However, increasingly it has been recognized that supplying free water does not necessarily ensure greater equity. Limited resources make it impossible for entire populations to be reached and those most likely to remain without access to clean water or adequate sanitation are the poorest and most vulnerable sections of the population. 'Free' water often ends up being more costly to the poor than to the rich in terms of time and energy lost in obtaining adequate sources of drinking water; and, for some severely affected areas, in terms of money required to buy water from private vendors during water scarce seasons of the year. Moreover, large scale subsidies that are involved in providing free water often undermine financial discipline, lead to higher overall costs and result in inefficient use of scarce resources. As a result of difficulties encountered from relying only on limited government resources for the long-term sustainability of water and sanitation services, the need to recover costs from alternative resources i.e. the users, has become imperative.

Full cost recovery is not always feasible in disadvantaged communities, certainly if this is defined to include initial capital costs and replacement of depreciated items. Moreover, where there are public benefits to be obtained which exceed the immediate private benefits perceived by individual households, less than full cost recovery from user charges may clearly be justified. This consideration applies with particular force to sanitation services. Even in such cases, however, knowledge of user willingness to pay is crucial for estimating expected revenues. If expected revenue from users is accurately estimated, supply institutions and their other financial supporters will be better able to realistically assess the feasibility of meeting financial burdens assumed by the institution on a sustainable basis and to plan in advance for additional resources to supplement these revenues.

In addition to providing a basis for revenue estimation, user willingness to pay represents at least a minimum estimate of the benefits perceived by users. Supply institutions should be reluctant to take on new financial obligations and ESAs reluctant to press them to do so, unless there is a strong indication that the benefits equal or exceed the new obligations. A perhaps more provocative way to say this is that the availability of financial resources is no guarantee that the activities which result in new financial obligations are sensible to undertake.

Basis of User Willingness to Pay

The willingness of users to pay for sector services depends on the perceived benefits, user income, and the price of services, primarily. Other factors are important, of course, in influencing these variables. In general, willingness to pay (and, therefore, supply institution revenues) increases with

larger perceived benefits and income and declines with increased prices. The scope for generating additional resources from users depends on the direction and magnitude of change in these variables. Some important aspects of these variables are:

- Perceived Benefits: The degree to which users perceive benefits from improved sectoral services is more problematic than sectoral proponents may have believed and is a constraint in sectoral financing and expansion of coverage. The improvements must be seen to be significantly better or more reliable than previously used water sources and sanitation practices or they will not be used or paid for. Although this is true to some extent for all sectoral services, it appears to be especially true for sanitation services in both urban and rural areas and, to a somewhat lesser extent, for water supply in rural areas.

  Recent World Bank research on willingness to pay for water supply in rural areas suggests that it is probably higher than expected by many sector professionals. The research also shows, however, that perceived benefits and willingness to pay are conditioned by important factors which have often been given too little attention by sector professionals. In rural areas in particular, such considerations as distance, convenience, reliability and quality can be more significant influences than either money price or income. It should also be noted that many rural communities already have free access to traditional sources of water and have become accustomed to the taste and other properties of such water. People are often reluctant to give up these sources regardless of the health hazards incurred by their use. This conclusion strongly supports efforts to develop and more broadly disseminate benefit information and suggests that explicit marketing of services may be a cost-effective mechanism for revenue generation.

- Income: As already discussed above, income growth is weak in most developing countries. The consequence is slow growth or reduction in willingness to pay of affected groups, particularly the low income groups already experiencing the lowest rates of coverage. In countries with declining income, greater stress should be placed on use of technologies and levels of service for which users are willing to pay. Current projections are for more rapid growth into the 1990's. If this occurs, additional revenue generation from users can be planned; but it is unlikely to be large unless more attention is given to system designs and

operations which are perceived to be more beneficial by users and at reasonable prices.

- Price: Partly as a result of trying to meet past financial burdens assumed by supply institutions, as well as increases in the real cost of providing services; the cost of service provision is rising. The key factors increasing real costs are inappropriate design standards, poor managerial practices, and reduced availability and quality of water resources due to current usage practices and inadequate treatment of wastes. To the extent that user charges reflect these cost increases -- which they must to help ensure financial viability -- user prices are going up.

The only major factor working against this trend is the possibility of using a wider range of standards and levels of service through intermediate and lower cost technological options than have been conventional. It has been a major contribution to the sector of the WSS Decade to focus attention on these kinds of options. Although it is clear that their adoption, where more consistent with effective demand than conventional solutions, can reduce costs; their rate of adoption may not be sufficient to achieve net price reductions for sector services, given other factors increasing costs.

It is important also to notice that subsidization of the price of services relative to their cost for some or all users, even when well-justified, does not reduce the overall financial burden of provision of services. Someone must bear these costs; whether it is households as taxpayers, the supply institution, the government or other internal financial sources, or external financial sources. The view that the costs can somehow be avoided by subsidizing user charges can only be described as a much too partial view of the financial issues. It is more realistic to expect that the service prices that users will be expected to pay will rise as costs increase. This adds urgency to the need for supply institutions to reduce unnecessary costs, for governments to come to grips with the water resource use and allocation issues which are increasing costs and give a renewed emphasis to adopting lower cost options. It is recognized that governments face political problems in raising prices to reflect true costs. This is particularly true in countries where people have become accustomed to paying low water tariffs or none at all, and thus find it difficult to adjust to new and higher rates. Experience has shown that political problems can be reduced by providing consumer information about the basis of charges and by

the establishment of regular procedures for tariff setting and adjustment. In addition to the above, method of payment, as well as to whom the payments are made, matter a great deal when user charges are expected to finance services and need to be given close attention as a factor influencing willingness to pay.

III. WHERE AND HOW TO LOOK FOR SOLUTIONS

The entire discussion leads to the conclusion that the generation of financial resources for the provision of water supply and sanitation services is now and will remain a significant sectoral constraint. It would be unrealistic to expect that there is some not-yet-discovered mechanism or financial gimmick that will solve the problem. Rather, improving financial resource mobilization will require concerted efforts on a number of fronts simultaneously. In this section, we will try to suggest where such future efforts can best be focused.

Increasing the Level of Accessible Finance for the Sector

Increasing the level of accessible finance implies the development of new sources or more intensive mobilization of resources from existing sources. The primary sources of funds currently used are government (primarily central governments), ESAs, and users.

A major possible source of funds that is far less frequently used in developing countries than in developed countries is the private sector. In most developing countries private bond and equity markets are not developed sufficiently to expect any major increase in funds from such sources in the near term. Moreover, many governments have established regulations which limit sectoral institutions use of such markets even when they are developed.

In a later section it will be argued that additional financial contribution can and should be made by service users through user charges. However, it is unrealistic to expect that direct user charges on existing services will be sufficient to cover the full costs of sustaining services and expanding coverage for those currently unserved. It is necessary, therefore, to assess the prospects and implications of increasing the financial contributions of governments and ESAs.

In assessing the implications of and mechanisms for increasing sectoral finance from governments and ESAs, it is important to remember that the provision of sector services requires the expenditure of real resources for which someone will have to pay--in the end, all costs are covered by someone. One key criterion, therefore, is the distributional question of <u>who</u>

pays under different arrangements. Those who initially pay for ESA grant finance are taxpayers in the providing country (or contributors to the funds for NGOs). Those who pay for government grants depend on the specific sources used by the government--general taxpayers for general revenue transfers, those paying the specific taxes or charges in the case of funds earmarked for the sector, and service users in some places to provide funds for investment elsewhere in the case of cross-subsidies, for example. Who pays for establishment of revolving funds depends on the allocation of responsibility for initial capitalization of the fund and, if the fund does not really revolve, the allocation of responsibility for fund replenishment. Being clear about who pays is important to governments in order to assess whether or not the arrangements used, in fact, do promote distributional objectives; and also to those who pay since non-user payments, in general, are not linked directly to benefits for those making the payments.

This suggests a second criteria for judging strategies for mobilization of financial resources; namely, the degree to which financial resources are raised from those who benefit from the allocation of the resources. A high degree of mismatch increases the likelihood that the mobilization mechanism will create distortions that work against efficient use of financial resources. On this criterion, the least distorting resource mobilization strategy is one which generates required resources from those who are directly benefited. Where user charges are feasible (as is the case for water supply and sanitation) this criteria is an argument for mobilizing most of the resources from users or from taxes (for "local" goods, such as water supply and sanitation, such a tax is the local property or land use tax) which derive from the jurisdictions which most closely approximate the locations of those who benefit. It is likely, therefore, that resource mobilization strategies that focus on getting "others" to pay for sectoral improvements will reduce efficiency in general and inhibit improvements in sectoral operations in particular.

Nevertheless, sectoral advocates may promote resource mobilization strategies which emphasize getting "others" to pay. Such a choice will carry with it, however, substantial costs in terms of efficient use of resources in the sector and, more broadly, efficient uses of financial resources across all sectors. This consideration suggest a further criterion (the share of finances provided by users) to be applied to the assessment of alternative means of generating financial resources for the sector. There are powerful incentive effects for using financial resources efficiently when the activities undertaken--in this case, the provision of water supply and sanitation services--are the primary means of mobilizing additional financial resources.

Causally, this works two ways. Firstly, if the primary means of mobilizing resources is from those who benefit; it is obvious that more attention will be given to potential users than would otherwise be the case. Increased reliance on beneficiary finance tends to be translated into greater concern with beneficiary interests and needs. The greater the distance between those who provide the finance and those who benefit from the service, the less likely it is that investment priorities will accurately reflect local demand and that the services will be efficiently provided and sustained.

Secondly, the degree to which financial resources are mobilized from other sources than the beneficiaries the more likely it is that the uses of the resources, technologies employed, and other conditions will be determined by the priorities of the funding source which may or may not coincide with the priorities of the supply institutions which need the funds. This is a continuing source of tension, for example, when ESA funds are a major or, as in the case of Africa, the predominant source of finance for sectoral investment. What often happens in these cases is that shifting the burden of who pays to ESAs and consequently to the taxpayers or other contributors to ESAs is accompanied by distortions in the recipient government's priorities relative to both its efficiency and internal distributional objectives.

In summary, most countries rely to a greater or lesser extent on financial resources mobilized from other sources than the direct beneficiaries in order to increase the level of resources available to the sector. Realistically, it must be expected that this will continue to be the case. It turns out to be true, however, that the mechanisms employed to shift the financial burden of who pays to someone else have their own: (1) distributional consequences, (2) implications for the efficiency of service delivery, and (3) distortion effects on priorities and financial resource allocation. The general rule is that the more closely related are the resource mobilization strategies and the cost recovery strategies from those who benefit, the greater the likelihood of efficient allocation of resources and the provision of reliable, sustainable services. When supplementary finances are required on income redistribution or other grounds, the mechanisms employed should be selected after careful consideration of the consequences described above.

Improving the "Incentive Environment"

As suggested earlier, governments and ESA's must not be content simply with providing financial resources to the sector. In particular, governments and ESA's must take more seriously the "incentive environment" which their policies and practices help create in the supply institutions being supported. In this context the importance of consistency in approaches of different

ESA's should not be underestimated in ensuring that sound financing strategies can be implemented. For example, communities will not be willing to contribute to capital or operation and maintenance costs for an externally sponsored scheme if they know that other neighboring communities are being provided facilities free of charge or for markedly lower prices by another external international organization or NGO.

There are many possible ways to improve the "incentive environment" (or "rules of the game") for institutional efficiency. The central idea of most of them is to clarify the rights and relative responsibilities of governments, ESAs, local supply institutions, community organizations, and users and then to hold each to the agreed responsibilities. The aim of the allocation of responsibilities is to contribute to outcomes which reward effective behavior and penalize ineffective behavior.

On these grounds, financial support should be based mainly on the merits of the specific case rather than on a prior determination by central authorities or ESAs to allocate resources to a particular locality. Obtaining a commitment from users in the form of either a financial or non-monetary contribution towards initial investment costs will also help to ensure that the proposed investment is demand driven and that the community concerned will not only agree to the financial implications, but will also have a stake in sustaining the initial investment made.

In some instances, decentralization of responsibility for the provision and management of WSS to levels of government below the central government or to communities themselves has been shown to have a number of advantages. However,such arrangements will work better if they are accompanied by a clarification of the rules of and mechanisms for providing financial resources to supplement, when necessary, direct payments from users. Particularly important in this context is the need to plan for and obtain assurances of minimally necessary subsidies well in advance and not allow them to creep in at a later stage to compensate for weaknesses and shortfalls. The problem is obviously complicated because this would require clarification in many countries of the tax and transfer systems and to regularize their functioning so that supply institutions and community organizations would have a better sense of the regularity and size of financial flows which they can expect.

Lumpiness of investment in the sector and the longevity of the assets creates a situation where borrowing to meet investment costs may be a useful financing strategy for supply institutions and governments. This suggests that the operation of the financial sector is likely to have a significant impact on the "incentive environment". The use of a larger share of loan funds relative to grant funds to finance investment would have a

tendency to encourage supply institutions to take account of the cost burdens which they are capable of accepting and would serve to improve efficiency.

Clarifying government policies with regard to financial intermediaries is important in the financing strategy of the sector. Many people in the sector believe that governments should establish financial intermediaries to direct credit to the sector, particularly to public utilities. International experience, however, has tended to show that proliferation of directed credit activities (especially when accompanied by subsidized interest rates) inhibits the broadening and deepening of the domestic financial sector that is essential to mobilize savings and allocate the mobilized resources to the most efficient uses. Over the long term, the payoff to the sector of fully functioning capital markets as a source of loan funds could be enormous and care should be exercised, in the near term, in establishing financial intermediaries for the sector which work against this aim.

A policy of encouraging private sector activity, if carefully structured to protect the public interest and to encourage competition, could substantially affect the "incentive environment" in positive ways. Promoting greater private sector contracting for operation and maintenance, for example, can be an effective way of generating greater efficiency and accountability in the sector.

Institutional Efficiency

A major part of the financial problem is that the costs which need to be met are higher than necessary due to inefficient management and operations in the sector particularly by government departments and public utilities. Over-staffing, lack of trained managers and staff, inappropriate administrative structures and inadequate metering, billing, and collecting, are endemic in the sector and all contribute to unnecessarily high costs. Furthermore institutional inefficiency often results in poor service which in turn adversely affects consumer's willingness to pay and thus the capacity of the supply institution to recover costs. Lack of funding further aggravates the capacity of the institution to provide adequate service thus creating a vicious circle of low revenues and poor service.

Although, it is important not to oversimplify the causes of these problems, more consistent attention to human resource development, reducing institutional constraints on personnel management and pay scales could help reduce unnecessary costs. Also, the introduction of simplified and streamlined financial practices could help ensure a more effective management of resources available. In many instances the centralized nature of

supply institutions makes it difficult to be responsive to the needs of the rural communities, particularly when cash constraints limit the ability of these institutions to provide necessary technical support, spare parts and overall operational service. One possible approach is to decentralize responsibility for investment, operations and financing to levels of government below the central or regional governments, and to more autonomous public utilities. However, lack of economies of scale often make it difficult for small and scattered settlements to be viably served by any formal public supply institution. In such cases, private sector or community-based efforts often provide the only solution.

Efficient Investment Choices

In practice the objectives of universal coverage of the population and of ensuring the sustainability of services (in terms of well maintained assets and financial viability) have been in conflict. Supply institutions have been encouraged to extend coverage without taking full account of the financial consequences of the extensions. The financial difficulties are increased if the extensions of service are made using only high-cost conventional technologies. Progress in the utilization of lower cost technologies, however, has been slower than might be hoped. An important reason for this has been a general reluctance to face up to the implications of the availability of these alternatives for strategic planning of future investments and their institutional implications. The key principle to be employed is to link investment choice (level of service, size and timing of investment) and the life-cycle costs associated with the investment to assessments of varying levels of effective demand and willingness to pay. The intent is to undertake investments which impose financial obligations on users which are more consistent with their willingness to pay.

Generating Additional Financial Resources from Users

To increase financial flows to the sector, two distinct groups of people must be persuaded that the benefits of improved water and sanitation services are worth the costs. The first are actual and potential users of the services. The second are government and ESA officials who determine the allocation of financial resources among sectors.

Current and potential users of improved services, however, must and do decide on expenditure priorities for themselves out of their available income. It is simply inadequate analysis of the problem to suggest that users will be willing to pay if the charge to them is within some arbitrarily defined share of income which is considered affordable. Moreover, revenue estimates

based on such arbitrary criteria have a high probability of not being achieved.

As mentioned earlier, greater awareness of benefits can bear significantly on consumer's willingness to pay. Improved documentation of benefits, demonstrations of the benefits through the provision of safe, reliable services and educational and marketing efforts, can and should be considered important elements in financing strategies. In this connection, persuading governments that there are public as well as private benefits in improved sanitation (even if the sanitation facilities are privately owned) is especially important. Also, in the case of sanitation, many people are unaware of the health hazards posed by indiscriminate disposal of wastes. Furthermore, other priorities such as the need for better education facilities and direct income generating capital tend to take precedence over expenditure on sanitation. Too rarely is a connection made between better sanitation and improved health or productivity.

In rural communities the manner in which consumers are charged for the construction and use of water or sanitation facilities, and the method of collecting funds for this purpose can play a key role in determining the extent of recovery from users. When a supply institution such as a public utility or government agency has chief responsibility for providing water and sanitation services, the usual practice is to levy a tariff on individual households or the community collectively. Where communities have been organized to take direct responsibility for operation and maintenance of local water and sanitation facilities a variety of approaches might be used.

In either case it should be noted that charge structures and payment mechanisms which may work well in urban areas are not always readily applicable in rural areas. For example, experience has shown that monthly payments are seldom appropriate in rural communities except for metered house connections and where a monthly cash income can be assured. Similarly, spot payments for the use of communal water points which may work well in urban or semi-urban areas may not always be practical in some rural communities where seasonality of income means that communities sometimes face extended periods of limited access to cash. In such cases seasonal charges levied once or twice a year to coincide with harvest periods may be more conducive than monthly charges for ensuring that user charges can be met.

Communities who are directly responsible for managing local systems may have greater flexibility to devise payment systems that suit the socio-economic situation of the community. Particularly where some households may find making a contribution especially burdensome, alternative innovative methods have been used, such as farming of communal plots and using the proceeds towards the operation and maintenance of communal facilities, or

utilizing water directly for productive purposes and channeling part of the proceeds to cover operation and maintenance costs of water and sanitation facilities. In addition, non-monetary inputs such as labor and materials can constitute a significant contribution towards cost recovery particularly when inputs are required for the expansion or diversification of existing facilities. In some instances communities prefer to organize specific fund raising drives to pay for major repairs or expansion of existing systems when the need arises. Routine preventive maintenance and operation costs can then be covered by relatively smaller seasonal or monthly charges. In fact considerable scope exists in many communities for drawing on traditional fund raising mechanisms.

Cost recovery for large scale capital costs incurred when an entirely new facility is constructed is in many instances, more difficult than cost recovery for operation and maintenance. For rural communities in particular the per capita costs involved may be well beyond the reach of most individuals. Credit schemes for the construction of systems are not always easy to implement as water and sanitation is not generally viewed by financial institutions as a productive investment. In any case such institutions are generally rather weak in rural areas where the working capital tends to be low and the rate of default high. Credit if granted at all, is usually provided on a short term basis and at very high interest rates. Rural people are themselves often reluctant to borrow for water and sanitation purposes unless it is directly tied to an income generating activity. It has been noted that in many communities where funds must be raised for specific capital projects, the preference is to save over a certain period of time then pay in advance rather than borrowing and committing the community to a fixed repayment. This is understandable in many societies where living conditions can be unpredictable and control over ones outlay of funds becomes of major practical and psychological importance.

In view of the above difficulties, supplementary funds or other support from the government or ESAs often becomes the only means of financing investment in new facilities. However, Governments and ESA officials charged with allocating resources among sectors and facing overall financial constraints themselves, are reluctant to put funds into activities which imply a continuing and uncertain subsidy level to sustain. For this reason it is important that communities are fully involved in the initial investment decision and agree to the financial implications, preferably through a clear demonstration that the users can and will pay the costs for subsequent operation and maintenance costs (at least, partial cost recovery).

Summary Conclusions: Government and external support agencies are the major sources of sectoral finance for investment and, to a somewhat lesser extent, finance for recurring operation and

maintenance costs in developing countries. The private sector has had a very limited role up to now in either providing finances or services. Government agencies responsible for determining the "rules of the game" and those providing funds for sector services need to recognize the links of such rules to effective institutional performance and the ultimate provision of sustainable, beneficial services as they collaborate and agree on sectoral policies and strategies. Major efforts are needed to tailor investments to effective demand and willingness to pay; to enhance demand by providing reliable services and assisting users to perceive the benefits of improved services; and to ensure that the methods of financing and regulatory, legal rules promote more responsive and effective institutional performance rather than serve as impediments to such performance or as encouragement of the belief that poor performance will be excused or rewarded with additional subsidies. Usually, the central government plays the leading role in setting financial conditions and priorities as well as the institutional and financial "rules of the game" under which local institutions operate. Both the direct role of central governments in providing finance and the more indirect roles in setting the sectoral "rules of the game" have powerful effects on the performance and financial viability of local supply institutions.

The effectiveness of the performance of local institutions is influenced, in turn, by the type of institution it is, by the types of financing available to it, and by the regulatory and legal framework (the "rules of the game") within which it operates. A central point of the paper is that it is necessary to go beyond the traditional and somewhat narrow focus on cost recovery from users to these broader concerns in order to increase the prospects for financial viability and sustainability of service provision. In particular, creating "rules of the game" which force the supply institution to be responsive to users and efficient in its own use of resources available to it are important financing strategies. Examples of such "rules" include: provision of investment funds to supply institutions which can demonstrate effective demand for the services to be provided rather than to localities arbitrarily selected by some central authority; greater transparency in procedures for allocating tax-based transfers to supplement user charges; regularized procedures for setting and adjusting user charges; and increased use of loans relative to grants for financing system expansions and new investments.

The paper concludes also that user payment for water and sanitation services is crucial for financial viability; while recognizing that the willingness to pay for services varies considerably among users and that, in some cases, less than full cost recovery from user charges may be justified. Willingness to pay is influenced by many factors: user perception of benefits; income; the accessibility, reliability and quality of services

relative to existing sources; the price of services; and the method of payment, for example. Supply institutions have an important role in marketing services--increasing user awareness and perception of benefits-- and in insuring that unnecessary costs are minimized by appropriate choice of levels of service and reduction of unnecessary expenditures on operations and maintenance.

IV. SUMMARY OF RECOMMENDED FUTURE ACTIONS

The future financial status of the sector depends upon concerted efforts by supply institutions, governments, and ESA's to address the major sources of financial weakness in the sector. To this end, the following actions are recommended:

1. Decide on investment choices only after having carefully assessed the users' willingness to contribute or pay.

2. Ensure that communities, particularly rural and low income communities, are fully involved in initial investment decisions.

3. Initiate hygiene education and other programs to increase the awareness of benefits and hence their effective demand for services, provided such increase has no adverse effect on the sustainability of water resources and the environment.

4. Components for institutional and human resource development should be included in projects to improve the operation and management of service facilities.

5. Governments and ESAs are to study systematically how to create an institutional environment which clarifies the responsibilities of the different actors and rewards efficient behavior and apply the findings to future actions.

6. Governments and ESAs in designing programs in the sector are to document and emphasize the benefits to socio-economic development and environmental protection to policy and decision-makers to help generate additional resources.

7. In project identification, governments and ESAs should give priority to rehabilitation measures versus new investments, if these measures lead to extension of service coverage to the unserved.

AVERAGE ANNUAL GROWTH RATE OF GNP PER CAPITA IN SEVENTY THREE COUNTRIES, 1965-1980'

ANNUAL GROWTH RATE RANGES						
With less than -1.5%	With -1.5% or less than 0%	With 0% or less than 1.5%	With 1.5% or less than 3.0%	With 3% or less than 4.5%	With more than 4.5%	Avg. All
Chad Niger	Madagascar Somalia * Sudan Uganda	Bangladesh * Benin C.Africa Rep. Ethiopia Haiti India Nepal Sierra Leona * Zaire	Burundi Malawi Pakistan Rwanda Sri Lanka Tanzania	Togo	China *	1.2%
	Ghana Senegal	Congo Honduras Jamaica Nicaragua Peru Zambia Zimbabwe	Bolivia Cameroon Cote d'Ivoire El Salvador Guatemala Liberia Kenya Mauritania Morocco Papua New G. Philippines	Colombia Dominican Rep. Egypt Indonesia Malaysia Nigeria Paraguay Syria Turkey	Ecuador Korea Lesotho Thailand Tunisia	3.8%
		Uruguay	Argentina Chile Mexico South Africa Venezuela	Algeria Costa Rica Panama Trin.&Tobago	Brazil Greece Hungary Libya Portugal Yugoslavia	
3%	8%	23%	30%	19%	17%	
As Percent of Total						

ce: INUWS calculations from: The World Bank: "World Development Report 1982, 1983 and 1989"

The asterisk refers to growth rate for 1965-1981, not 1965-1980.

AVERAGE ANNUAL GROWTH RATE OF GNP PER CAPITA IN SEVENTY THREE COUNTRIES, 1980-1987[1]

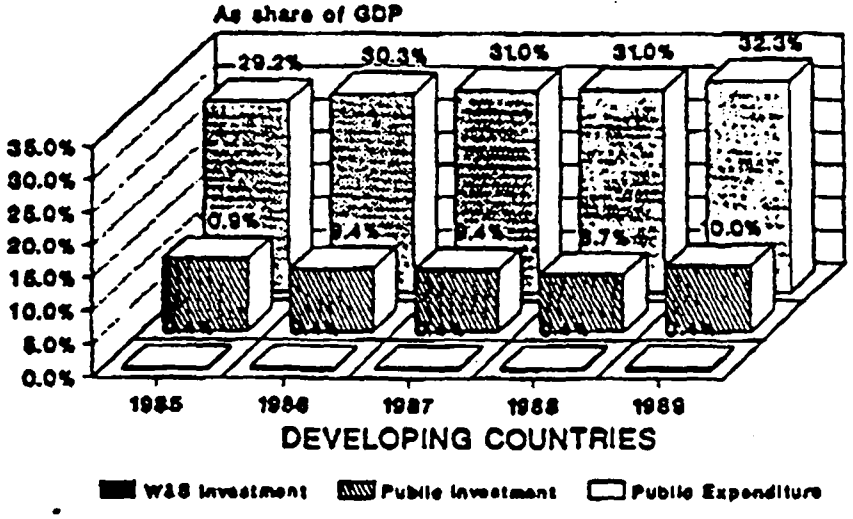
GROUP	ANNUAL GROWTH RATE RANGES					
	With less than -1.5%	With -1.5% or less than 0%	With 0% or less than 1.5%	With 1.5% or less than 3.0%	With 3% or less than 4.5%	With more than 4.5%
LOW INCOME	Chad C.Africa Rep. Ethiopia Ghana Liberia Madagascar Malawi Mauritania Niger Nigeria Tanzania Togo Uganda Zaire Zambia	Benin Burundi Sierra Leona * Sudan	Bangladesh * Haiti Kenya Nepal Somalia *	India Lesotho Pakistan Rwanda	Sir Lanka	Indonesia China *
LOWER MIDDLE	Bolivia Chile Costa Rica Cote d'Ivoire El Salvador Guatemala Jamaica Nicaragua Papua New G. Peru South Africa	Honduras Philippines Senegal	Dominican Rep. Ecuador Morocco Tunisia Turkey Zimbabwe	Colombia Mexico Syria Thailand	Egypt Malaysia Paraguay	Cameroon Congo
UPPER MIDDLE	Argentina Greece Libya Trin.&Tobago Venezuela	Portugal	Panama Uruguay Yugoslavia	Brazil Hungary	Algeria	Korea
	42%	11%	19%	14%	7%	7%
	As Percent of Total					

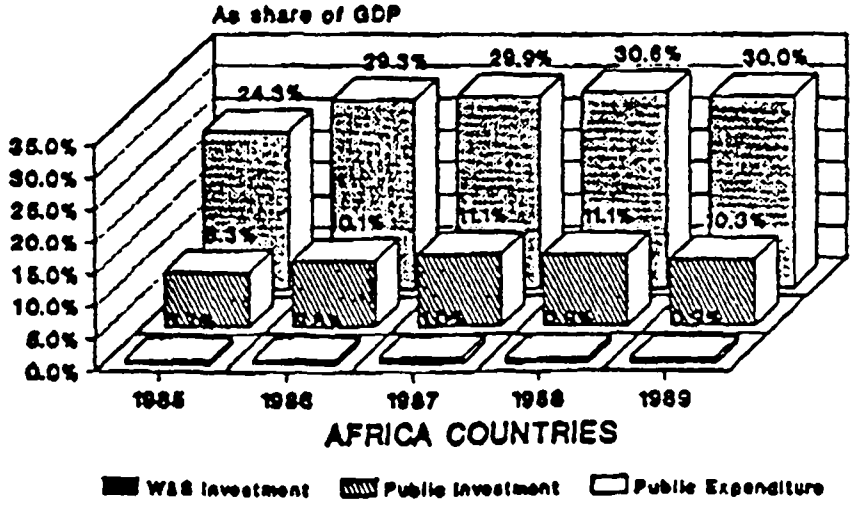
Source: INUWS calculations from: The World Bank, "World Development Report 1982, 1983 and 198

[1] The asterisk refers to growth rate for 1981-1987, not 1980-1987.

FIGURE 1

PUBLIC EXPENDITURE/INVESTMENT AND WATER & SANITATION INVESTMENT

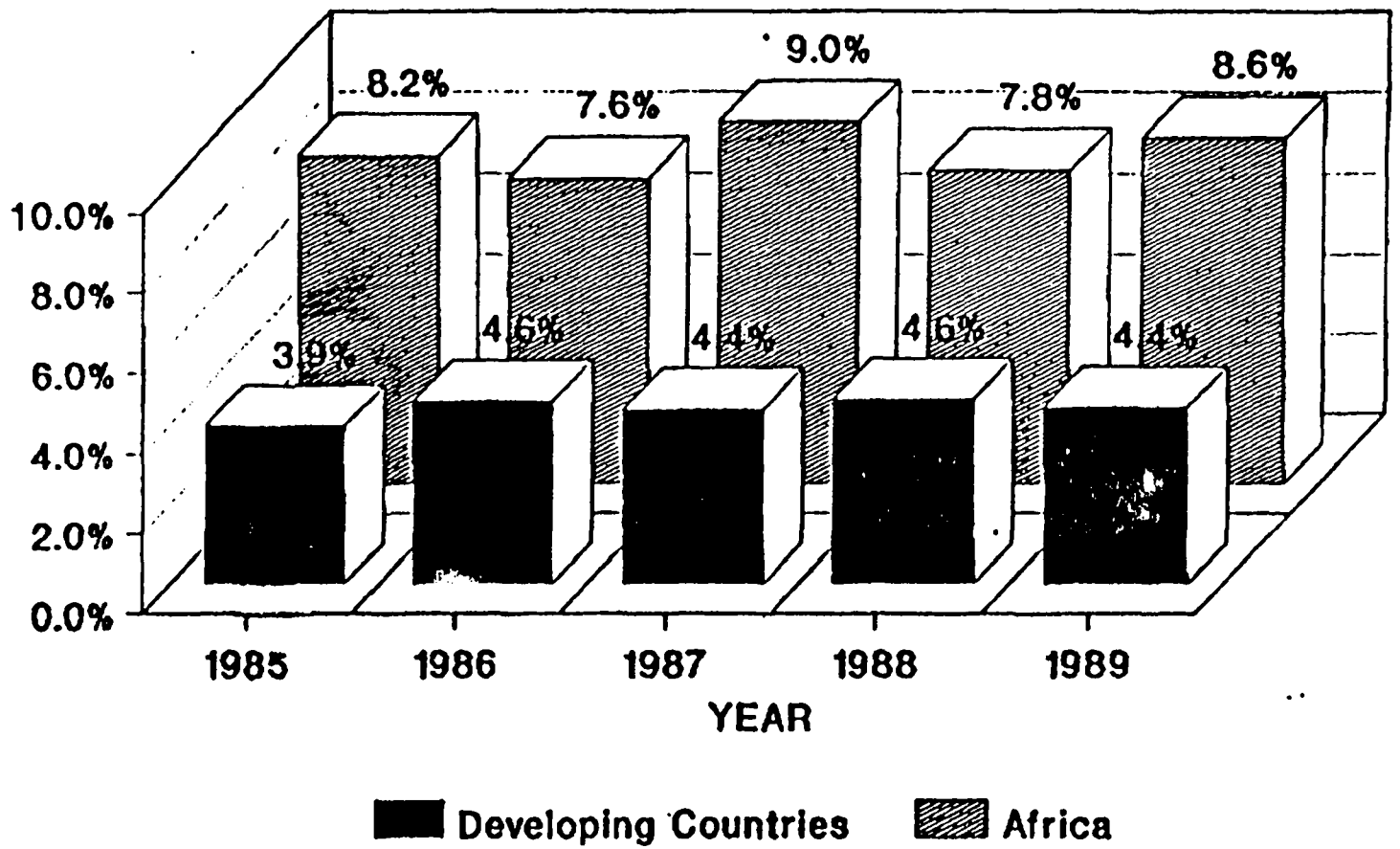




Source: UNUWS calculations from PE/I Reviews, various countries.
Note: Weighted average.

FIGURE 2

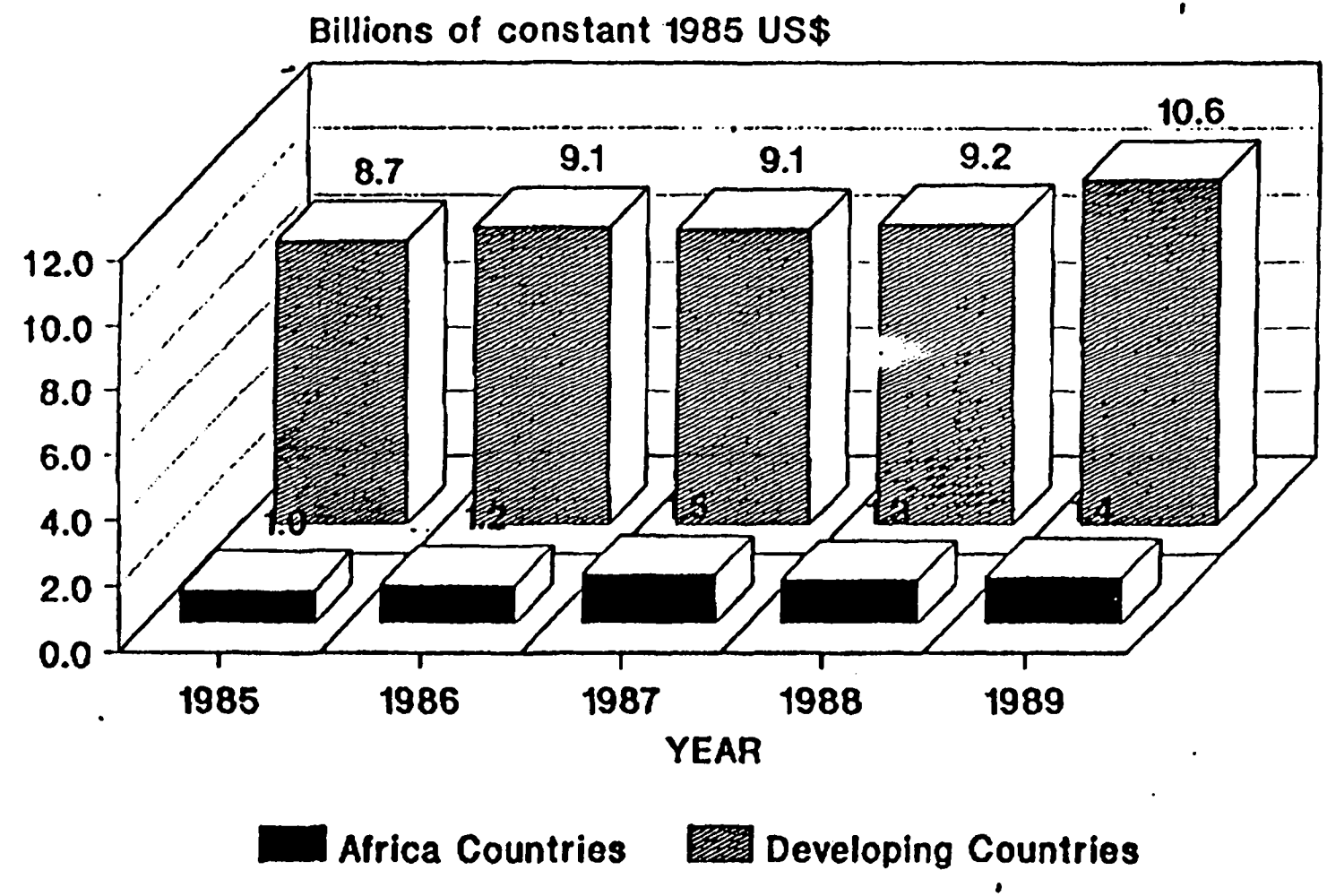
WATER & SANITATION INVESTMENT AS PERCENT OF TOTAL PUBLIC INVESTMENT



Source: INUWS calculations, from PE/I Reviews, various countries.
World Development Report 1989.

FIGURE 3

WATER & SANITATION INVESTMENT, 1985-89



Source: INUWS calculations from PI/E Reviews, various countries. WDR 1989.
Note: 1988-89 figures are proyections.