African Development Bank

Guidelines for User Fees and Cost Recovery for Rural, Non-Networked, Water and Sanitation Delivery

PREAMBLE

The African Development Bank Group's vision has development and poverty reduction as a central goal. Inadequate access to water supply and sanitation is a cause and consequence of poverty; likewise, inadequate water resources can become a constraint to improved health, agricultural development and food and energy security. Development of water resources will have a vital role in socio-economic development in Africa, while making a substantial contribution to the fight against poverty.

In order to address the impending water crisis, the Bank Group has made several interventions. Adoption of the Integrated Water Resources Management Policy (IWRM), preparation of the African Water Vision (AWV) and the Framework for Action (FFA), promotion of the establishment of the African Water Facility (AWF) and implementation of the Rural Water Supply and Sanitation Initiative, among others, are some of the major interventions undertaken by the Bank in recent times. In addition the Bank was given the lead responsibility of developing and implementing the NEPAD water infrastructure program, which includes water resources development.

A key aspect of managing scarce water resources is to understand the economic value and financial cost of water systems. Few Regional Member Countries have realistic policies, operational strategies or plans for cost recovery and sustainable financing for increased service coverage, particularly for the poor. Due to the lack of systematic knowledge, strategies for cost recovery are typically not comprehensive and address only some aspects of sustainability. This leads to the degradation of water supply, sanitation and irrigation systems, resulting in failure to deliver reliable services to users.

The Guidelines on User Fees and Cost Recovery for Water, Sanitation and Irrigation Projects, set in the context of the African Development Bank's Integrated Water Resources Management Policy (2000), have been prepared to assist Regional Member Countries (RMCs), service providers and RMCs investors working in project formulation and appraisal, sector and policy analysis in the water supply, sanitation, irrigation and related agricultural projects.

The Guidelines acknowledge the widely held view that water is both a social and economic good and have been designed to assist all stakeholders in the implementation of sustainable services which support all consumers and users of water.

This document, one of three complementary documents, addresses the issues of rural, non-networked water supply and sanitation. The other two documents consider urban, predominantly networked, water supply and sanitation and irrigation services. Fourteen page summary guidelines are also available for each of the three service offers.

EXECUTIVE SUMMARY

The African Water Vision targets achievement of 95% access to drinking water supply and sanitation by 2025, whilst the more imminent Millennium Development Goals' targets with respect to water and sanitation services are "*to reduce by one half, by the year 2015, the proportion of people who do not have access to safe drinking water and basic sanitation*". The water and sanitation situation in Africa remains poor, with the region hosting one-third of the world's population without access to drinking water supply. Only about 60% of the total population in Africa had access to water and sanitation as of 2008, according to UNICEF/WHO's Joint Monitoring Programme. As a result, approximately 210 million people in urban areas will need to be provided with access to water supply services, and 211 million people with sanitation services, if the international coverage targets of the MDG for 2015 are to be met. A similar number of people in rural areas will also need to gain access. Using the most basic level of service and technology, the 2015 targets for rural areas could be attained at an extra annual investment cost estimated at about USD 1.2 billion.

The Bank's IWRM policy explains that the water sector is expected to fulfil social, environmental and economic needs. In a context of growing water scarcity, exacerbated by rapid population growth and urbanization, misallocation of resources, environmental degradation, and mismanagement of water resources, the Bank Group and its Regional Member Countries (RMCs) face new challenges which call for a new approach to water resources management. Water is a single resource with many competing uses. Experience has demonstrated that water management is both complex and multi-level, and requires a comprehensive framework. This analytical framework would facilitate the consideration of interconnections between the ecosystem and socio-economic activities in river basins. A sectoral or sub-sectoral approach should therefore be replaced by an integrated approach, which takes into account social, economic, and environmental objectives, assesses water resources within each basin, evaluates and manages water demand, and seeks stakeholders' participation. This vision is now widely accepted.

One of the major challenges in scaling up sustainable delivery of drinking water, sanitation and irrigation services is the constraint of financial resources, for both investment and operations and long-term maintenance purposes. Since funding by governments (from taxes) and international development agencies (transfers) is limited, there is an increasing attempt at mobilizing financial resources from the users through tariffs. Increased user financing also improves the prospects of financial sustainability. Moreover, the issue of user fees and costs for sanitation services has not been comprehensively tackled so far by most RMCs. Financing sanitation presents a particular challenge because finance often comes from two sources: the individual or household for onsite sanitation and an external source such as government for sewerage systems. However, owing to social/public health objectives, environmental concerns and political reasons, subsidies are often provided for sanitation services.

To keep up with the rapid increase of population and achieve food security by 2015, agricultural production in the region must increase at an annual rate of 6%. This implies that, substantial new investment in agriculture is needed to meet targets for poverty alleviation and food security. The Food and Agricultural Organisation (FAO) estimates that about 75% of the growth in crop production in Sub-Saharan Africa required by 2030 will have to come from

intensification. Since irrigation and other forms of agricultural water management are the key to intensification, it is also clear that much of the required new investment must be in agricultural water development.

Statistics also show that lending for irrigation in Sub-Saharan Africa (SSA) declined considerably in the 1990s and 2000s. Though there could be various reasons for this decline, the common denominator is the disappointing performance of development to date in terms of sustainability and returns on investment. Some RMCs do not charge any user fees for agricultural purposes. On the other hand there is no uniformity in regard to the principal considerations adopted by the RMCs in fixing user fees for irrigation water.

The overall objective of recovering costs, financial and economic (operating expenditure, capital maintenance, cost of capital, indirect sector support costs including environmental and economic regulation and resource opportunity costs) is desirable in the context of IWRM. In particular economic and financial costing of water in its various uses guides appropriate allocation of water resources and assures appropriate waste water management according to polluter pays principles. However, many factors come into play while trying to make this objective operational.

First, the point of departure varies by country, sector, and sub-sector: in some cases cost recovery is extensive and well established and effectively implemented at some level (eg recovery of full operating expenditure and a degree of capital maintenance costs in some sectors in Morocco). In other cases, cost recovery may be minimal – either through lack of policy commitment to the objective or poor implementation of policy.

Second, notwithstanding the goal of integrated water resources management, there is variation by sector and sub-sector in what is feasible. For example, the potential to recover costs is high in *productive* sectors such as irrigation – where cash incomes should increase by significantly more than the full cost of investment. Significant cost recovery is also possible in urban water supply, though usually requiring modest cross-subsidies. Whilst remaining possible, it has been limited in many sanitation investments, other than those undertaken directly by households.

Third, willingness to pay (and willingness to charge) is a related issue which varies by country and within countries (urban/rural) and by technology (networked/non-networked water and sanitation services).

In sum, these factors create a continuum of contexts and opportunities for cost recovery interventions, which in turn influences what is feasible and desirable and the timescale that may be required to meet specified policy objectives. These three Guidelines, through a step-by-step approach, will facilitate progress in such diverse cases. The bottom line is that failure to attain financial sustainability of water, sanitation and irrigation projects will greatly hinder scaling-up and therefore hinder achievement of the MDGs for the water sector.

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This document was prepared by the Water Partnership Program (WPP) of the African Development Bank under the supervision of the Bank's Operations Policy and Compliance Department with inputs from an international consultative stakeholder workshop for Bank staff and external stakeholders.

Acknowledgements

Thanks to consultants from IRC, The Netherlands, and Cranfield University, UK, Catarina Fonseca, Richard Franceys and Chris Perry.

This study was coordinated by Dr Cyrus Njiru, with support from Arthur Swatson, OWAS / AWF during review of the study outputs during the three stages of its development.

The AfDB Group undertook the study with the financial support of its Water Partnership Program donors i.e. the Government of Denmark, the Netherlands and Canada (CIDA)

The Water Partnership Program (WPP) promotes effective water management policies and practices at regional and country levels. It operationalizes the African Development Bank's Integrated Water Resources Management policy in the Bank's regional member countries.

WPP pursues its goal through the generation and dissemination of a range of knowledge products, fostering dialogue on key sector issues and promoting partnerships that enhance knowledge sharing. The Guidelines presented here touch upon a very critical issue for all rural water sector investments: how to build rural water and sanitation infrastructure that is, first and foremost, financially sustainable, in addition to being environmentally and socially sustainable?

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Publication date

October 2010

STRUCTURE OF THE GUIDELINES: HOW TO USE THIS DOCUMENT

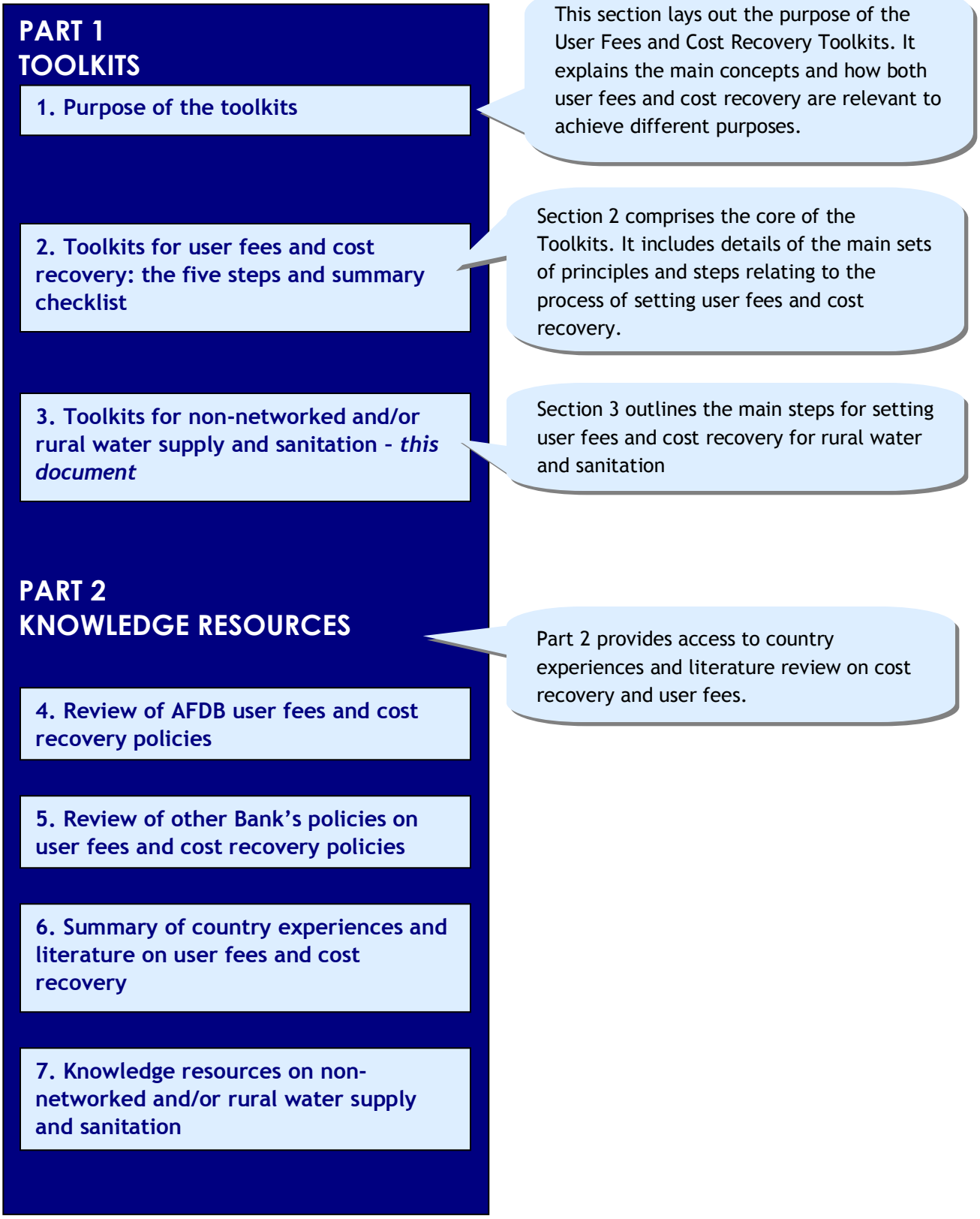
The three complementary Guidelines on Rural Water and Sanitation (Watsan), Urban Watsan and Irrigation, are designed to meet the needs of all stakeholders, service providers and investors working in project formulation and appraisal, sector and policy analysis in the water supply, sanitation, irrigation and related agricultural projects. The Guidelines include practical checklists to ensure consideration of the IWRM objectives in project preparation as well as sectoral analysis.

Regional Member Countries (RMCs) of the AfDB have a range of policies, operational strategies or targets for setting user fees. There is also considerable commitment to poverty alleviation in the region and recognition of the limited ability of many to pay for services. Therefore any IWRM policy should be implemented progressively. This situation has important implications for the design of these Guidelines: user fee systems are usually founded on a combination of policies and long-standing practice.

Approaches to national, regional and specific location tariff setting vary widely. Where investments are local and project-specific, this can create a tension in that it can be unrealistic to expect significant changes in national policy on the basis of a single investment operation, which in the national and sectoral context may be relatively small. Production and implementation of the Guidelines is intended to help stakeholders in Africa have a common basis to engage on the issue of cost recovery and setting charges.

The Guidelines are divided in two main parts: the Guidelines and the Knowledge Resources (see figure in next page). Both parts discuss the three main sub-sectors: networked and/or urban water supply and sanitation, non-networked and/or rural water supply and sanitation and irrigation.

Each of the three complementary documents discusses one of the three main sub-sectors: -(i) rural, non-networked water supply and sanitation; (ii) urban, networked water supply and sanitation; and (iii) irrigation.


PART 1
TOOLKITS
1. Purpose of the toolkits
2. Toolkits for user fees and cost recovery: the five steps and summary checklist
3. Toolkits for non-networked and/or rural water supply and sanitation - *this document*
PART 2
KNOWLEDGE RESOURCES
4. Review of AFDB user fees and cost recovery policies
5. Review of other Bank's policies on user fees and cost recovery policies
6. Summary of country experiences and literature on user fees and cost recovery
7. Knowledge resources on non-networked and/or rural water supply and sanitation
This section lays out the purpose of the User Fees and Cost Recovery Toolkits. It explains the main concepts and how both user fees and cost recovery are relevant to achieve different purposes.
Section 2 comprises the core of the Toolkits. It includes details of the main sets of principles and steps relating to the process of setting user fees and cost recovery.
Section 3 outlines the main steps for setting user fees and cost recovery for rural water and sanitation
Part 2 provides access to country experiences and literature review on cost recovery and user fees.

TERMINOLOGY

Various terms are used in the literature as well as in project documents. The Guidelines try to use the following terminology consistently:

USER FEES (SERVICE CHARGES OR TARIFFS)	Includes any payments made by beneficiaries which are required because the service is provided – these include direct payments for actual service (e.g. charges per cubic meter of water delivered); fixed charges (e.g. a charge for being connected to a water or drainage service), or an increased land tax because irrigation services are available. User fees, service charges, customer charges, tariffs, prices are all used here to describe the same concept.
SOCIETAL CONTRIBUTIONS	Contributions to financial sustainability from national taxation (and international taxation or transfers, through donor intermediation) for both indirect support costs, capital expenditure and, more rarely, operating expenditure.
SERVICE COSTS	Includes the range of expenses incurred in providing water services – routine operation and minor maintenance expenditure; capital expenditure (cost of construction and long-term capital maintenance of facilities) plus costs of financing that capital expenditure. Direct support costs, overheads and appropriate levels of regulation may also be included in service costs.
COST RECOVERY	Measures the extent that user fees and any other direct contributions, for example voluntary labour, are adequate to meet service costs. Financial sustainability describes the extent to which society as a whole (including international society) contributes in a committed, long-term manner to support services, either through full cost recovery through user fees or through a combination of user fees and societal contributions.

The sub-sectors definitions used throughout the Guidelines include:

NETWORKED AND/OR URBAN WATER SUPPLY	Refers to conventional piped water supply comprising abstraction (from ground or surface water), some form of treatment and distribution to households, commerce and industry. Although described as urban this conventional water supply approach is also used in secondary towns and in some rural areas where economic wealth or water scarcity begin to justify the investment in networked provision. A networked and/or urban water supply system *anticipates a 'customer orientation' in the supply of services where cost reflective tariffs are viable.*
NETWORKED AND/OR URBAN SANITATION	Refers to piped waste water collection (sewerage), treatment and disposal, combining a number of houses or sources of waste. The waste network might discharge directly to a convenient water course but preferably, if less affordably, the waste will receive some form of treatment, with possible levels including primary (sedimentation), secondary (biological treatment) and most unusually tertiary where there is a demand for immediate re-use. Treatment processes also necessarily include some level of sludge treatment, sludge being the concentration of solid and precipitated parts of the sewage, including the waste from the treatment processes. A networked and / or urban sanitation system *anticipates a 'customer orientation' in the supply of services where cost reflective tariffs are viable.*
NON-NETWORKED AND/OR RURAL WATER	Describes point sourced water with no piped distribution system. The point source can be a borehole, a well, a spring or a rainwater catchment tank. Water is transferred to homes by carrying using various modes, including by carts. In the context of these Guidelines on cost recovery, rural and/or non-networked water tends to refer only to human powered abstraction methods, handpumps for example, where operation costs are minimal. For this reason gravity flow water systems are included in this category even though they may develop into networks delivering to houses. Some urban areas, particularly secondary towns and peri-urban areas, also access water through point sources and therefore require a similar approach to cost recovery. In larger urban areas these point sources may be seen as part of the transition to accessing the conventional piped network. *It anticipates a 'community orientation' towards the supply of services where community involvement and contributions may be more significant than direct user fees.*
NON-NETWORKED AND/OR RURAL SANITATION	Refers to on-plot and on-site sanitation which is also widely used in many urban areas. On-plot sanitation refers to the various types of pit latrine and septic tank which dispose of human wastes within the boundaries of the housing plot. On-site sanitation might include a limited network from a small number of households discharging to a communal septic tank or treatment pond on the housing site. *It anticipates a 'household orientation' towards the supply of services where direct household payments for services delivered are more significant than ongoing user fees.*

Other terms used in the Guidelines include:

Value of water	Willingness to pay for water and sanitation services; computed time, convenience and health benefits. Incremental income received by the farmer as a result of irrigation services, divided by the quantity of irrigation water used. Wider externalities or values that society believes should be recognised as part of the value of water, particularly related to scarcity and ecological and environmental sustainability.
Sustainability	'Sustainable development is the management and conservation of the natural resources base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations.' (FAO, 1988). Seven criteria for water sustainability recognised in AFDB policy and Guidelines: 1. Guaranteed access to basic amount of water for human health – quantity 2. Basic water requirements 3. Quality standards 4. Renewability of water resources 5. Data collection and dissemination 6. Institutional mechanisms to prevent water conflicts 7. Water planning and governance
Economic objectives	The efficient allocation of resources is an important consideration in developing pricing policies for services. Economic theory suggests that optimum allocation of resources is achieved when price equals the marginal cost of supplying the service, which is the increment to total cost of producing and delivering an additional unit of output under specified circumstances. While this situation is rarely, if ever achieved in practice, the idea that water, a scarce good, should not be wasted and that reallocation from low- to high-value uses should be encouraged is an important concept in formulating user fees. Economic theory also highlights important divergences between economic costs, social costs and, environmental impacts (due for example to external effects) which should be taken into account.
Financial objectives	Full financial sustainability implies that the agency has access to sufficient revenues and societal contributions to cover operating and minor maintenance costs, capital maintenance costs, debt service on loans and dividend payments on equity capital where required. In addition there is a need to ensure 'financeability', that is the ability to generate sufficient funds to ensure adequate interest cover on loans, to meet the timing or cash flow requirements for repayments of debt capital and to be able to finance a proportion of capital expenditures from internally generated funds. Where service providers or utilities operate commercially the rate of return on assets is a useful test of their financial sustainability. The extent to which this criterion is met through user fees varies widely across countries and sectors. In general, the more commercial utilities (telephones, power) come closest to financial sustainability through cost reflective user fees, while other sectors – especially rural water supply, sanitation, and irrigation – have tended to be more dependent on support from government. These Guidelines support the move towards achieving financial sustainability through user fees, recognising that demands on government resources are such that support is not always forthcoming, particularly for the critical component of capital maintenance.

(Continues next page)

Service differentiation	In water supply, sanitation and irrigation there are a wide range of technologies that can be chosen by users and consumers to best fit their particular needs, affordability and willingness to pay. This range is generally more extensive than recognised, for example in urban water there is not simply the choice between standposts or conventional house connections but the possibility of group connections, street connections, prepaid meters, informal connections etc which can provide a higher level of service than standpost kiosks but at a lower cost than conventional connections.
Price differentiation	Price differentiation is used to describe tariffs that reflect the potentially lower costs of the service differentiation approach and also describes the use of tariffs that benefit from cross-subsidies within the sub-sector aimed at the particular needs of different segments of the population, for example a lower tariff for low-income users.
Cost reflective charging or pricing	The principle that for economic and allocative efficiency total direct user fees should 'reflect', that is be approximately equal, to total service costs.
Cost reflective revenue distribution	Revenue (collected under cost reflective pricing) should be distributed/shared out to reflect the costs incurred by the organisations involved in service delivery, both direct and indirect.
Operating and minor maintenance expenditures (Opex)	Expenditure on labour, fuel, chemicals, materials, plant & equipment, purchases of any bulk water. These will be detailed for each of the sub-sectors. There is some uncertainty as to what to include in opex, ie the distinction between minor maintenance and capital maintenance as well as the issue of what overheads or support costs should be included.
Capital expenditure (Capex)	Expenditure on new fixed assets or expenditure on enhancing the quality or service of an existing system of fixed assets
Capital maintenance charges /expenditure (CapManex)	Expenditure on asset renewal and replacement, based upon serviceability and risk criteria. Accounting rules may guide or govern what is included under capital maintenance and the extent to which broad equivalence is achieved between charges for depreciation and expenditure on capital maintenance.
Support costs	Expenditure on direct support costs such as environmental and economic regulation including customer involvement costs. These will be detailed for each of the sub-sectors. Indirect support costs such as capacity building at a national scale are not considered.
Cost of capital	Expenditure on the weighted average cost of capital (see Toolkits for Financial Governance, 2005) representing interest payments on debt and dividend payments to the equity providers, weighted according to the balance of debt and equity. Note that not all providers of capital will be requiring these returns on their contribution (grant funds for example) but there is then an opportunity cost of that capital which needs to be recognised.
Depreciation	An accounting measure of the extent to which the value of fixed assets have been used up in any particular period in the provision of services. Where fixed assets are required to continue facilitating that service 'in perpetuity' the depreciation charge should equate to the cost of long-term capital maintenance.
Amortization	Amortization relates to the financing of capital investments and describes the regular payments to providers of finance of interest on the debt and phased repayments of the principal or capital borrowed.

PART 1

GUIDELINES FOR USER FEES AND COST RECOVERY FOR RURAL AND NON-NETWORKED WATER AND SANITATION PROJECTS

1 RATIONALE AND PURPOSE OF THE GUIDELINES

1. The African Water Vision proposes achievement of 95% access to drinking water supply and sanitation by 2025, whilst the more imminent Millennium Development Goals targets with respect to water and sanitation services are "to reduce by half, by the year 2015, the proportion of people who do not have access to safe drinking water and basic sanitation". The present water and sanitation coverage in Africa is poor, only about 60% of the total population in Africa has water and sanitation coverage. As a result, approximately 210 million people in urban areas will need to be provided with access to water supply services, and 211 million people with sanitation services, if the international coverage targets of the MDG for 2015 are to be met. A similar number of people in rural areas will also need to gain access. Rural development is similarly dependent upon the growth in agricultural output of which irrigation is a key component. The AfDB is committed to supporting Regional Member Countries in delivering improved water, sanitation and, as required, irrigation services to all.

2. Sector experience gained since the huge investments of the 1980s water decade dictate that sustainability is key to achievement of the MDGs for water, sanitation and elimination of hunger through irrigated agriculture. In particular, a robust cost recovery system is necessary for achievement of financial sustainability of projects and programmes in the water sector.
3. This section outlines the context in which these Guidelines have been developed. It explains why, who and how the Guidelines might be used within the framework of the AfDB and its support to Regional Member Countries.

1.1 Purpose of the Guidelines

3. User fees have an important role in meeting social, economic and environmental policy objectives. User fees, and their structure, provide signals to users about the cost of the service, the scarcity of resources used to provide the service, and the priorities that governments place on provision of services to particular groups. At a minimum, user fees for cost recovery provide the basis for financial sustainability: failure to provide for adequate funding leads to the degradation of systems, deteriorating performance and services, and unwillingness to pay – a commonly observed vicious circle.

4. In 2000, the Bank produced an Integrated Water Resources Management (IWRM) Policy statement. The policy stated that getting the prices right is at the very core of improving water resources management. Among others, the policy states that:

a) In the context of increasing water scarcity, economic cost pricing, including recognition of opportunity cost, should be used as a basis for water allocation decisions;

b) The aim of water pricing should be economic cost recovery, taking into account social equity and capacity to pay by the rural and urban poor. Initially however Regional Member Countries (RMCs) should target the recovery of full financial cost.

c) The Bank will support RMCs' strategies to develop appropriate water pricing policies.

5. The IWRM policy sets aspirational goals of full economic cost recovery, with pricing at the core of improving water resources management – but notes that full financial cost recovery is a more immediate goal, and that "lifeline" water supplies should be available at affordable prices.

6. The implications of the wide spectrum of national, sectoral and local situations that the Bank faces – and must take account of in its operations – is clearly recognised. The time frame for full financial cost recovery may necessarily vary between countries just as the extent of RMC's water pricing policies are at different stages of development. However, these Guidelines recognise that a certain minimum level of user fees, described further for each sub-sector, is crucial to ensure service sustainability.

1.2 Water user fees for cost recovery

7. The policy, and particularly the practice, of cost recovery are central to any country's delivery of water, sanitation and irrigation services. The purpose of these Guidelines is to establish a framework for stakeholders to work towards best practice in cost recovery so as to deliver the best possible sustainable service delivery to customers and consumers. The Guidelines are a critical component of achieving sustainability in the Millennium Development Goals.

8. Lower-income countries have traditionally supported their public water and sanitation providers through budgetary grants (from taxes) and low-cost loans (supported via transfers), not expecting or requiring full cost recovery. The result has usually been a poor quality of service, accessed mainly by higher-income households with governmental support nearly always less than anticipated leading to weaknesses in operations and maintenance. The focus of the direct providers has then tended to be on meeting the needs of government as the providers of finance, rather than on customers and their interests. In addition to the subsequent poor quality of service, the lack of sufficient revenue always impacts upon long-term capital maintenance such that the next generation of consumers will have to fund an even greater proportion of rehabilitation costs. Moreover, absence of a credible cost recovery system means that the service provider cannot deliver needed maintenance, leading to deterioration of services.

9. Approaches towards cost recovery for Africa RMCs need to recognise the economic and institutional environment in which client countries are operating. It is the goal of lending agencies to improve water and sanitation service provision faster than the rate at which such services might normally have developed in order to accelerate growth in economic development as well as improving the health of poor households. These Guidelines therefore seek to enable service providers to deliver better services to all, within the context of a protected environment, through accessing enhanced revenue flows whilst acknowledging that full cost recovery might not always be achievable everywhere at low levels of economic wealth. In this context it is recognised that part of the process of moving towards cost recovery has to be through ensuring that appropriate service levels and technologies are chosen, or differentiated, such that users obtain the services they desire and are willing to pay.

10. Differentiated services may not necessarily equate to conventional service standards but will be chosen by consumers, users and households as the level at which they recognise benefits for which they are willing and able to pay. Where there are significant externalities, benefits to society as a whole which have not been captured through customer and user oriented service choice, then the role of societal contributions should be considered. This is not the same as subsidising inappropriately chosen levels of services. The notion of "one size fits all" has not worked in the water sector, hence the idea of service and price differentiation.

1.3 Constraints in the implementation of user fees in RMCs

11. In many African countries the principle of paying for utility services such as power supply and telecommunications is relatively well established. This is not so however with respect to sewerage and water services – including irrigation. Key constraints include:

- The widespread tendency for people to believe that water is a free good, provided by nature and therefore free to consumers.
- Second, some RMCs have traditionally provided free or subsidized water so that user charges are now resisted, consumers having perceived that past prices represented present values.
- Third, because water is a basic human need, there is an appropriate desire that a minimum should be provided to sustain life, regardless of the income level of the beneficiary.
- Fourth, since provision of sanitation services has health benefits beyond the individual consumer, to society as a whole, it is often argued that direct recovery of costs is inappropriate. This is often used to justify subsidising access to sewerage by the rich rather than on-plot sanitation for the poor for whom the health benefits are higher.
- Irrigation, which provides direct financial benefits to users, is less susceptible to the public good argument. However there is considerable variation in the extent to which irrigation providers perceive the provision of dams and bulk water transfers to be part of service provision to be recovered from users.

Despite the above constraints, the water sector in Africa has undergone considerable reforms in the recent past, and many RMCs have successfully revised their national water policies to cope with today's realities. These Guidelines will further complement initiatives by RMCs who are already implementing water sector reforms.

12. The **multiplicity of objectives** and the trade-offs involved make the subject of services pricing controversial. Much of the controversy arises from the lack of consensus on the boundaries to be drawn between the role of utilities as instruments of government's social and economic policies, and utilities or service providers as commercial ventures. The implications of economic, financial and policy objectives may conflict in particular instances, and pricing decisions may involve trading off one objective against another.

13. In addition to the above mentioned constraints at country level, the present process of project appraisal in the Bank tends to introduce financial and economic analysis at too late a stage – generally after technical, physical and organizational definition of the project. Rather than being an integral part of project design – testing the feasibility of project design against

economic, financial, and cost recovery criteria – the economic and financial review is effectively an ex-post check that the project meets broadly defined viability criteria but provides no assurance of financial sustainability. These Guidelines stress the iterative nature of checking anticipated user fees against proposed service levels and the necessity to reconsider service levels when subsequent willingness and ability to pay indications are that such services will not recover costs.

14. Bank loans should, whenever appropriate, set out the agreed approach to user fees and establish the basis on which financial sustainability is to be ensured. Any such agreement presupposes the existence of an efficient accounting system capable of making reliable data available on a timely basis; clear policy and appropriate legal support to proposed user fees; and adequate enforcement procedures.

15. An existing study covers[1] standards and procedures for financial accounting that are comprehensive in scope and fully adequate to guide financial accounting aspects of ensuring overall revenue sufficiency – once the scope of an approach to cost recovery has been identified. However, the Toolkits for Financial Governance and Financial Analysis of Projects say little about reasonable or acceptable levels of subsidies, potentially between different groups of consumers, between regions, between sub-sectors, between rural and urban and between countries.

[1] Source: Toolkits for Financial Governance and Financial Analysis of Projects, AfDB, 2005

2 GUIDELINES FOR USER FEES AND COST RECOVERY: THE FIVE STEPS

16. The structure of the Guidelines reflects the interdependent framework of issues that should be addressed in formulating a successful user fees and cost recovery system. The five steps involved relate to the Policy, Economic, and Institutional Environment; Setting Cost Recovery and Service Objectives; Investment Planning, Costing & Appraisal; Determining Revenue Requirements and the Basis for Charging User Fees; and Implementation of User Fees.

Country programme assessment	STEP 1	The Policy, Economic and Institutional Context	• Country Policy and Institutional Assessment: what is the political and economic environment, the existing situation of the country regarding average income levels (GDP per capita and Gini index), trends in growth rates, urban and rural, and therefore the likely future required and desired services and the potential for cost recovery. • Policy and institutional environment, the laws and formal statements of policy by relevant authorities and other government ministries which govern the specification of user fees and cost recovery. Is there a need for these to be reviewed?
Sector review, project identification & feasibility	STEP 2	Setting Cost Recovery and Service Objectives	• What quality and quantity of services are desired by users and consumers, both present and potential? • Can services be delivered through alternative, differentiated, modes of provision? • What is the affordability and willingness to pay for services at various levels of provision? • Feasibility of the primary objectives of service delivery – social, economic, financial, environmental? • Existing RMC & AfDB policy on setting cost recovery targets from user fees. Are these in agreement – do they need to be reviewed? • Are there any possibilities of inter-sectoral/multi-use/alternative uses of water and what are the implications for water allocation? Are there any resulting implications for charging?
Project preparation and appraisal	STEP 3	Investment Planning, Costing & Appraisal: Determining Revenue Requirements	• In appraising a project, its technical, financial, economic, social, environmental, production, management and loan conditionalities are closely examined according to the Toolkits for Financial Governance & Analysis of which these Guidelines are a sub-set. • Specifically the total revenue requirements have to be understood: operating and capital maintenance expenditures and costs of capital. • How is the total amount to be recovered calculated? Is there adequate accounting capability to ensure long-term understanding? • What are the future costs required to ensure sustainability? • Is there a justifiable need (national, local, interests) for extra-sectoral subsidies?
	STEP 4	The Basis for Charging User Fees	• What will be the basis for computing the specific user fees (fixed charges, volumetric charges, for example) and for sharing the total revenue burden between different consumer segments? • To what extent can existing patterns of charging be adapted to ensure financial cost recovery? • Is there sufficient willingness and ability to pay these user fees? If not, reconsider service objectives and modes of provision.
Project design and implementation	STEP 5	Implementation	• **Project level:** Sources of finance and payment mechanisms: Who will pay? When? Who will collect charges, How often? Where (how available)? What sanctions will apply for non-payment? Is there a need for revised local legislation to enforce compliance? Are the costs & revenues being properly accounted for? • **Macro level:** What can governments do? How can policies and practices regarding a move towards cost recovery be introduced whilst involving users so as to maintain their trust and commitment to ensure long-term sustainability? What are the mechanisms for monitoring and evaluating the progress towards cost recovery? If extra-sectoral subsidies are required are they being transferred?

			• **External level:** What is the advocacy role of AfDB and other external agencies in supporting the move towards user fees and cost recovery? Are any loan conditionalities being monitored and enforced regarding user fees?

17. This framework is in part hierarchical – Step 1 - the Policy, Economic, and Institutional Environment will define the context in which the rules and procedures for setting water service charges are determined and should provide guidance on the principles to be followed. Often there will be gaps in the policy environment so that clarification of key issues is a precondition to any further progress. Sometimes the process will be iterative – for example, if charges based on volume of water delivered are planned, the infrastructure must be reviewed and perhaps upgraded to ensure that accurate measurement at the desired points in the system is feasible.

18. The outcome of the entire cost recovery process must be a system that meets defined objectives while being internally compatible with governing legislation in addition to being technically feasible and responsive to user and consumer interests. The process should therefore consider political, legal, administrative, technical and operational aspects – as well as ensuring acceptance by stakeholders beyond the immediate users.

19. The policy, economic, and institutional environment is relatively common for the three main sub-sectors, urban water and sanitation; rural water and sanitation; and irrigation and drainage, each of which can be accessed in the complementary documents.

2.1 Summary check-list: non-networked and/or rural water & sanitation

20. The five steps in formulating a successful user fees and cost recovery system for rural non-networked Watsan delivery and the relevant issues to be addressed are presented below.

Country programme assessment	STEP 1	**The Rural/ Non-networked Policy, Economic and Institutional Context**	Economic condition and average income levels (GDP per person and Gini index) Trends in rural growth rates, 'peri-urban' and slum growth with non-networked services Policy and institutional environment, laws and formal statements of cost recovery policy by relevant authorities Country Policy and Institutional Assessment – likelihood of political support for accelerated move towards cost recovery Stakeholder analysis – likelihood of support/opposition to enhanced cost recovery. Possibilities for cooperation and coordination. Is there a semi-autonomous economic regulator? What level of independence? If none, what are the plans to introduce this capacity? Is there any system of comparative competition for drillers, small scale private sector (both water and sanitation) in the country to promote efficiency?
Sector review and project identification	STEP 2	**Setting Rural/ Non-networked Cost Recovery and Service Objectives**	Existing policy on setting cost recovery targets from user fees What are the primary objectives of service delivery in this context – social, economic, financial, environmental? To what extent should attainment of the desired cost recovery target be time-extended? What are the existing levels of efficiency to support service provision in rural areas? What is the existing financial situation of any direct service providers (community committees, small scale private sector)? What are the existing levels of service provision – water and on-site sanitation? What is the existing level of subsidies to average customers of water? And on-site sanitation? How costly is access to bulk water? What levels of service are being accessed by the poorest? Is there a need for social mapping? What quality and quantity of services are desired by users and consumers, both present and potential? Can services be delivered through alternative, differentiated, modes of provision? Does the service provider need to be introduced to concepts of service and pricing differentiation? What, if any, are the restrictions on serving 'illegal slums' (on-site sanitation)? Affordability and willingness to pay for services at various levels of provision?
Project preparation and appraisal	STEP 3	**Investment Planning, Costing & Appraisal:** **Determining Rural/ Non-networked Revenue Requirements**	Understanding total revenue requirements What are present operating expenditures, capital maintenance expenditures, costs of capital? What should they be at present service levels? What should they be at proposed service levels? Have these costs incorporated direct support costs? Is the country investing sufficiently in indirect support costs? Is there a justifiable need for extra-sectoral subsidies, particularly related to the time-spread of achieving cost recovery?

	STEP 4	**The Basis for Charging Rural/ Non-networked User Fees**	What is the basis for charging user fees/contributions (payment in kind, tariffs, etc)? To what extent do the user fees reflect the principle of revenue adequacy, social fairness, water conservation and polluter pays, simplicity and enforceability? Are cost sharing agreements clear and implemented between different stakeholders? Is it an appropriate time to re-consider the basis for charging? Is there an appropriate balance in sharing the total revenue burden between different consumer segments? To what extent are faecal sludge management costs being recovered? Are public institutions paying their water fees? Is there sufficient enforcement to limit non-payment and polluter pays avoidance? *Is there sufficient willingness and ability to pay these user fees?* *Have women, the poorest and the most disadvantaged been consulted separately?* *If not, reconsider service objectives and modes of provision Step 2.*
Project design and implementation	**STEP 5**	**Implementation**	Are any additional sources of finance required to ensure coverage to the poor? What community involvement mechanisms are planned? Are there appropriate billing and collection procedures in place? Are there appropriate financial administration procedures in place? Can lower-income customers pay little and often? Are there appropriate but enabling processes in place/planned for non-payment? Is there any need for local bye-laws to enforce compliance? Is there a system of financial control, monitoring and evaluation of the development of user fees?

2.2 Economic environment

21. Promoting cost recovery through user fees as part of a donor supported project requires an understanding of the country economic conditions (Table 2.1), in particular average household wealth. This is most easily noted as Gross Domestic Income (Gross Domestic Product) per person or potentially, where remittances from overseas workers are significant, Gross National Income per person. This level of economic wealth is already recognised in AfDB's classification of RMCs and is an important predictor of possible levels of cost recovery. There is clearly an assumption that GNI per person is a fair reflection, or rather an approximation, of average wealth and may not be representative. However it is normally the most accessible approximation where countries may not have more accurate data.

22. To develop a project or programme it is therefore necessary to understand the breakdown of the population of a country between rural and urban and between formal urban and informal, illegal, slum and shanty urban. National statistics services might, in addition, give an indication of average household wealth for each of these groups which gives a first estimate of the scale of each service challenge as well as possible levels of affordability. The Gini coefficient describes the extent to which wealth is equally shared or skewed towards the rich in any country. This coefficient together with the relative proportions of the population in each of the main categories gives an idea as to the potential for cross-subsidies.

23. A third critical indicator is the 'Taxation to GDI' (GDP) ratio. This ratio not only illustrates the potential for supporting water and sanitation services through direct taxation (through budgetary support to the water and sanitation provider) but most importantly the likelihood of the sustainability of this source of finance. Some countries have achieved good water and sanitation services through fiscal support with only limited user fees. However, such successes are unusual, particularly in low-income countries and this approach does not assist in the IWRM goal of appropriate sharing of scarce resources based upon 'water as an economic good.' It is noted that the extent of the informal, untaxed, economy is not captured in the tax to GDI ratio. This is a further indication of the likelihood that sustainable services must depend upon user fees rather than societal contributions through taxation.

Table 2.1: The economic environment

	PRESENT INFORMATION	TREND/GROWTH RATE
GDI/GNI per person		
Gini coefficient		
Tax to GDP ratio		
Rural population %		
Average household income rural		
Average household income rural with access to irrigation services		
Rural population living under $1 per day %		

24. Not all the information in table 2.1 is required for all proposed projects, for example urban data is not required for irrigation but it can be useful for some rural water and sanitation projects and vice versa. This level of information is the minimum required to commence policy dialogue with an RMC and to begin project preparation which necessarily includes cost recovery objectives.

2.3 Policy and institutional environment

25. RMC Governments have legislation and policies with varying levels of detail regarding water resources management and services provision. These policies are the starting point for consideration of cost recovery, indeed they may even specify what is to be achieved and how. However, for good reason, many such laws and policies may also be recognised as aspirational. The country would like to achieve certain outcomes but is simply not in a position to do so at the moment due to limitations in capacity and economic resources.

26. The institutional pattern within the sector (or sub-sector) has to be recognised to understand the role of the various organisations, their legal responsibilities and authority, as well as the drivers that act upon them and influence the way in which they operate. This is particularly important for cost recovery issues as the determination of water tariffs is usually perceived to be critical in political terms. The organisational level at which cost reflective user fees might be calculated and approved, often requiring Ministerial (and even collective Ministerial) approval, is a factor in the likelihood of AfDB's involvement in promoting cost recovery being successful.

27. The Country Governance Profile (CGP), which identifies the strengths and weaknesses of governance arrangements in a country, and the Country Policy and Institutional Assessment (CPIA) should also be considered to the extent that they indicate the governance potential to allow for and even promote institutional autonomy sufficient to support a policy of cost recovery for sustainability. These factors can be summarised in a simplified Activity and Responsibility Matrix shown in Table 2.2

Table 2.2: The policy and institutional environment

	COST RECOVERY GOAL	COST RECOVERY RESPONSIBILITY	INSTITUTIONAL AUTONOMY
Legislation regarding water resources and water and sanitation services, particularly clauses relating to cost recovery			
Formal policy regarding water resources and water and sanitation services, particularly relating to cost recovery			
Practice regarding water resources and water and sanitation services, particularly relating to cost recovery			
Organisations & specific policies regarding water resources and water and sanitation services, particularly relating to cost recovery			
Minister/Cabinet		E.g. final approval	
Ministry of Finance		E.g. views on cost recovery	
Central Government Ministry – Water Resources, Environment			
Central Government Ministry - Agriculture			
Central Government Ministry – Local Government			
Economic & quality regulator			
Environmental regulator			
Municipal/Local Government			
Direct service provider (public or private)			
Informal service providers			
Community driven initiatives, community based organisations, Water User Associations – civil society for community oriented provision			

28. Ensuring financial viability has become a growing concern in lending to service providers and other programmes and projects. Losses in operations are widespread, both because of poor operational efficiency and improper pricing policy for the services they provide. Pilot projects cannot be taken to scale many times for these same reasons. The Bank is interested in developing and establishing viable institutions – indeed these institutions may be more important to long term development than the immediate resource transfer of the Bank's loan. For example, developing effective and efficient service providers, developing a viable economic regulator and giving an independent view of costs related to services might be a critical aspect of the Bank's contribution. Such institutions also begin to address the political context of setting user fees and moving towards cost recovery. Politics and the challenge of adjusting user fees close to any elections is a global challenge which cannot be underestimated. Hence every opportunity should be taken to 'neutralise' the political aspect of setting user fees through, for example, not only facilitating independent reviews of pricing (economic regulation) but also

through involving users and consumers, civil society and focused advocacy groups in the process of determining service objectives and subsequent fees.

29. Analysis of the institutional framework gives initial indications as to whether there are institutional weaknesses, gaps or even failures which need to be addressed to ensure viable institutions and the necessary supporting framework for service delivery and cost recovery.

30. Based upon this understanding of the economic, policy and institutional environment, common to each of the sub-sectors, it is necessary to consider the objectives and charging approaches separately.

3 GUIDELINES FOR NON-NETWORKED AND/OR RURAL WATER SUPPLY AND SANITATION

[The preceding Section 2 is common to all the sub-sectors addressed by the Guidelines and should be read before this section].

3.1 Definitions for non-networked and/or rural water supply and sanitation

31. **Non networked and/or rural water** supply describes point sourced water with no piped distribution system. The point source can be a borehole, a well, a protected spring or a rainwater catchment tank. Water is transferred to homes by carrying, occasionally by carts. In the context of these Guidelines on cost recovery, rural and/or non-networked water tends to refer only to human powered abstraction methods such as hand-pumps, where operation costs are minimal. For this reason gravity flow water systems are included in this category even though they may develop into networks delivering water to households. Some urban areas, particularly secondary towns and peri-urban areas, also access water through point sources and therefore require a similar cost recovery approach. In larger urban areas these point sources may be seen as part of the transition to accessing the conventional piped network. Non-networked water is often a community responsibility where there are no "user fees" for operation and maintenance. It is the community responsibility to finance and/or dig a new well, to ensure well-heads are kept clean, to construct a spring-box and/or a gravity pipe-line. It is however necessary for the community to have some form of a revenue collection, to ensure that there are funds to meet operations and maintenance costs as well as replacement costs.

32. **Non-networked and/or rural sanitation** refers to on-plot and on-site sanitation, which is also widely used in many urban areas. On-plot sanitation refers to the various types of pit latrines and septic tanks which dispose of human waste within the boundaries of the housing plot. On-site sanitation might include a limited network, from a small number of households discharging to a communal septic tank or treatment pond on the housing site. On-site sanitation is mainly a household responsibility, where there are no "user fees" for operation and maintenance. It is the household's or the community's responsibility to dig a new pit latrine and to keep facilities clean, hence the need for a system of organising and funding the operations and maintenance of the facilities. In these Guidelines, the discussion is limited to the recovery of investment and capital maintenance costs (for example: superstructure construction and pit latrine emptying), which are dependent on household contributions.

33. In non-networked and/or rural water supply and sanitation, there are key differences in terminology compared with urban and/or networked water supply and sanitation. Section 3 of the urban version of these Guidelines discusses cost recovery in urban settings where utilities recover their costs from customers through regular user fees with limited subsidies from donors (transfers) or from society (general taxation). In rural areas, "user fees" is not always the most appropriate term because costs are recovered mainly by a combination of subsidies to capital investments and community and/or household irregular contributions in cash, labour and/or kind. Throughout this section, the term "community/household contributions" is used rather than "user fees".

STEP 2: SETTING CHARGING AND SERVICE OBJECTIVES

3.2 Existing RMC & AfDB policies on cost recovery targets and users contributions

34. The present RMC economic, legislative, policy and institutional framework is the starting point against which cost recovery goals outlined in these Guidelines can be mapped. Where there is a significant disparity between the present RMC environment and the goals of AFDB, there should be ongoing dialogue at all appropriate levels, political, administrative, service provider and civil society. This will determine the extent to which the RMC is prepared to adjust its legislation and/or policies according to the goals/advice of AFDB, perhaps desiring support to do so. For a complete overview of Step 1 – The economic, policy and institutional environment refer to Section 2 of the Guidelines.

35. Rural/non-networked areas in Sub-Saharan Africa face a significant challenge in achieving full cost recovery from community/household contributions. Since many poor countries and poor regions within those countries may be unable to finance operating and maintenance expenditures of rural water supplies, the selection of technology and service levels is crucial. The situation in some countries is made worse by the fact that some countries have such a large proportion of the poor that cross-subsidizing the poor, who may be half the country's population, becomes impossible.

36. The review of the Bank's experience in financing rural water supply projects reveals the difficulty of enabling projects to be financially sustainable. Careful selection of service levels and technology can significantly lower the costs of implementation and hence the level of cost recovery needed to achieve financial sustainability.

37. The Bank's Rural Water Supply and Sanitation Initiative (RWSSI) recognises the role of subsidy in the rural water sector, stating that *the major (80%) proportion of investment contribution will continue to come from external sources in the form of loans, grants or a combination of both, national governments will contribute 15% and communities 5%. The 5% community contribution is "through cash contributions and provision of labour and material during the construction phase and assumption of responsibility for operation and maintenance"*.[2] For sustainability of rural water and sanitation systems, the community will therefore need to demonstrate that they can mobilise funds to support operations and maintenance.

38. In an attempt to match cost recovery objectives/possibilities with social and economic goals in low-income economies, Table 4.1 provides a framework for dialogue with RMC governments which global experience suggests is both desirable and a reasonable minimum

[2] AfDB Rural Water Supply and Sanitation Initiative - Implementation Plan and Resource Mobilisation Strategy, 2005. Pg. 15

achievable in terms of cost recovery. The Millennium Development Goals illustrate society's commitment to achieving necessary service provision. The attainment of cost recovery for those services is presumed to take longer than for urban areas.

Table 3.1: Setting charging objectives - minimum cost recovery targets

	RURAL &/OR NON-NETWORKED WATER	RURAL &/OR NON-NETWORKED SANITATION
ADF interventions eligible countries (all but 2 of 38 'Low-income countries < $785 GNI pc)	Community self provision with external component provision	Household self provision with external component provision
AFDB & ADF interventions (two 'Low-income countries < $785 GNI pc)	Community self provision with external component provision	Household self provision with external component provision
AFDB interventions eligible countries (all but 3 of 13 are 'Lower middle-income countries >$785 < $3,115 GNI pc)	Community self provision/full direct provider opex, capmanex recovery	Household self provision with component facilitation
Upper middle-income countries (three >$3,115 <$9,636)	Full direct provider opex, capmanex & cost of capital recovery	Household self provision

Note: opex: operating expenditure;
capmanex: capital maintenance charges/expenditure;
cost of capital: returns to equity and debt providers;
'component provision' refers to the provision of pipes for example or latrine slabs;
'component facilitation' refers to inputs to local artisans, training and tools and a supply chain mechanism

39. The targets proposed in Table 3.1 seek to match (by proxy) present affordability and willingness to pay with longer term service needs and responsibility for those needs. In rural/non-networked areas, user charges or household contributions are generally set through an individual project or small scale utility, sometimes at community level. Some targets describe, for instance, 5% community contribution to capital investments with varying references to operations and minor maintenance and very limited references to capital maintenance. The resulting requirements for subsidies and other sources of finance, short term and long term, need to be clearly defined with ownership of institutional responsibilities defined in project documents.

40. A key obstacle to cost recovery is political interference in setting user contributions and unwillingness to charge for water services (without guaranteeing proper financing from other sources). This is also reflected in unsustainable water policies. For example, a government might proclaim that it should provide its people with "free" water, when in fact the funding, institutional arrangements and capacities to provide that water service do not exist. Unless there is a real commitment from a higher level of decision making for cost recovery policies that allow access to a sustainable service, real change cannot be expected in terms of coverage for a wider number of people.

41. The scale of the potential AFDB financial lending may (or may not) be a sufficient driver for the RMC to want to evaluate its present position (if there is one) for rural and/or non-

networked water and sanitation services. Alternatively government and citizens may reject the concepts on offer. However, it has become clear that the policies of many RMCs with regard to tariffs and cross-subsidies no longer serve the purpose for which they were initially designed. AFDB recognises this and is committed in future projects to provide sufficient resources to support RMC's in their development of viable user fees for an appropriate level of cost recovery.

3.3 Setting service objectives

42. Within a district or programme area, the first step of the iterative process to decide on user contributions is to consider service objectives. Table 3.2 provides key indicators for water and sanitation in rural and/or non-networked areas. By filling in the baseline indicators and what is being proposed, it is possible to make cost estimates. Making this information explicit immediately illustrates the extent to which the needs of the poor are being served and therefore gives a first indication as to the possible justification and level for any necessary subsidies.

43. The process to set service objectives starts from investigating existing levels of service and resulting costs and revenues and the required levels and impact on coverage and infant morbidity to be achieved within the time frame of the programme. Setting service objectives should therefore ensure that health and convenience benefits are achieved by all, particularly women and the poorest.

44. Basic indicators such as infant morbidity, existing service coverage and the average distance to a water source of low income households will provide an idea of the urgency to plan for increased coverage, indicating the required costs and explaining the need for additional funding sources. The percentage of population that has access to alternative (non safe) sources and the indicators on average water user fees will provide a first indication on the ability and willingness to pay and possibility for cross subsidies.

45. Within the context of setting service objectives, it is necessary to take into account the institutional support that will be required to keep the services working in the medium and long term. Staff ratio per point source will indicate the existing and required capacities mainly at local and regional levels of governance to support the desired service levels. Lack of administrative, financial, and technical/social skills in the decentralised public sector is a considerable obstacle to better service management, regardless of whether a public, private, or civil society entity is involved at the system level. Long-term sustainability depends on a critical mass of trained public sector employees being retained. Defining service targets needs to include estimating manpower needs, identifying occupational priorities and determining/planning training requirements.

46. Concerning sanitation coverage, open-defecation affects more than the people in one household: it can affect the whole neighbourhood or community. Therefore, for a health impact, a high proportion of the people living in an area must consistently use latrines. The proportion most frequently quoted is 75%. This implies that intensive interventions are needed with the community or neighbourhood as the primary unit of change, not only the individual or household. In slum areas, where most housing is rented, a high percentage of pit latrines being

unsafely emptied manually will endanger previous efforts to decrease the health risk. The need for public or private incentives/subsidies will have to be computed when considering the costs of the service.

Table 3.2: Setting service objectives

	PRESENT	PLANNED/ ANTICIPATED
Infant morbidity - diarrhoeal diseases in rural and/or informal urban housing areas		
Population morbidity - diarrhoeal diseases in rural and/or informal urban housing areas		
Service coverage - water supply by population %		
How many people per point source (household or per capita)		
Access to alternative (non safe) sources by population %		
Safe water source availability - average distance km		
% of lower income households within 500m of point sources		
% of higher income households within 500m of point sources		
Average time taken to collect water from point sources		
Average water user fee (monthly) relative to average household income %		
Average water user fee (monthly) relative to fourth quartile average household income %		
Indicators of institutional efficiency:		
Proportion of water points working %		
Staff ratio per point source		
Staff with skills and capacity to plan, support implementation and monitor service delivery		
Average repair time following a breakdown		
Average time required for the purchase of spare parts		
Availability of spare parts - average distance km		
% of households paying regularly		
% of O&M covered through household contributions		
On-site sanitation indicators:		
Service coverage - sanitation, access to on-plot systems by population %		
% of low income households with on-site sanitation		
% pit latrines emptied manually (concentrated rural areas/ slums)		
% pit latrines emptied mechanically (concentrated rural areas/ slums)		
Availability of local materials and skills for slab construction		

47. To gather much of the information and indicators required, start from existing information, most of which will probably be unpublished reports. Sources of information range from government departments such as for health, water affairs, public works, environment,

education, geology and mines and other organisations that work in the area. Communities also keep information of participatory mapping and appraisals done by other agencies.

48. The iterative process of setting service objectives will necessarily deal with technology choices, service levels and other demands from communities matched against available resources and willingness/ability to pay, before considering what levels of subsidies and which alternative sources of funds will be required. Each of these will be dealt separately in each of the steps below.

3.4 Are community/household contributions affordable?

49. Within the range of economies noted in Table 3.1, it is possible and necessary to distinguish not only between rich and poor but also between levels of household poverty. In order to determine affordability of service levels, it is best to undertake a household survey comprising a simple willingness to pay investigation. Where this is not done (for whatever reason), the income distribution profile of households (average monthly household income, geographical areas) can be determined from available data and "willingness to pay" can then be estimated using as a yardstick the "rule of the thumb" of contributions not exceeding 5% of the income of the lowest quartile.

50. But poverty is not just an economic condition; it is a human condition. This broader definition of poverty cannot be measured in dollars and cents. Consequently, in addition to income-based measures of poverty, other quality-of-life indicators should also be used. There are within communities, several social groups that are particularly vulnerable socially, economically and culturally. These groups are composed of women (especially single heads of families), elderly people, people with disabilities, children and indigenous groups. In many rural communities where income levels are not available, wealth indicators can also be used as yardsticks. These may include:

- Cattle, goats or sheep owned;
- Type and number of house (zinc, thatch, grass, brick, etc.);
- Size of cash crop farm;
- Number of wives (in some communities);
- Bicycle or car owners.

51. The affordability of user charges is linked with ability and willingness to pay. For instance, user charges should not be too high to drive consumers to unsafe alternatives or to decrease daily use to dangerous levels; but these factors are influenced not only by the charge itself but by other factors. Sometimes people may continue to use a polluted water source (and ignore an available improved water supply service) because they do not see health or other (productive) benefits or because they don't like the taste or/and colour. People will simply not pay for improved services if they do not perceive there to be sufficient benefits relative to costs. These issues are discussed in detail in the following sections.

3.5 Willingness to pay

52. Willingness to pay (WTP) is an expression of demand for a service. It is a strong prerequisite for cost recovery being a measure of user satisfaction of a service and of the desire of users to contribute to ongoing access to that service. Willingness and ability to pay are regularly confused. It is often stated that people are not able to pay the required contributions because they are too poor. This may perhaps be true in a few individual cases, but in many cases people are **able to pay** but **not willing to put a priority** on spending their resources on improved water supplies or sanitation facilities.

53. Whenever people indicate they are not willing to pay, it is important to find out why and to ensure that action is taken to solve the underlying problem. Factors negatively influencing willingness to pay include a service that does not reflect people's demand, lack of transparency from the community committee, lack of financial capacities, political interference, beliefs, competing water sources, etc. Divergent cost recovery policies used by different agencies also influence the willingness to pay. For instance, if one agency is providing water in rural areas "free of charge" in one community while another agency is requesting for 10% of upfront user contributions for covering part of the investment costs, then those asked to contribute may decline, citing poverty. If these factors are dealt with sensibly, willingness to pay is positively influenced.

54. There are several methodologies available for measuring willingness to pay (for instance: actual behaviour studies, hypothetical behaviour studies, contingent valuation, etc.). While many of these studies will send a clear message that there is willingness to pay for improved services, it is only in very rare occasions that policy changes as a result. For rural areas we suggest to limit willingness to pay studies to survey and focus group discussions at community level, ensuring that the views of women as main water users are investigated and recorded separately. This approach will also capture the possibility of community members providing voluntary labour for trench digging, transport, pipe-laying, or to provide local materials, such as gravel and sand. Table 3.3 provides a checklist with key topics for such surveys which is expanded in the Annex – *Factors influencing willingness to pay*. The information collected can be used to find ways to improve the service and increase revenue.

3.6 Willingness to pay for sanitation

55. On-site sanitation is mostly a household responsibility and, similar to many non-networked water services there are no regular "user fees". However, within the scope of these toolkits provision should be made for recovery of the following expenditures: *pit digging, construction of the latrine slab; pit latrine/septic tanks emptying fee and rebuilding latrines* where these are not undertaken by households.

56. There are two key reasons for dealing with these issues in the Guidelines. Firstly, because in highly populated areas such as slums, there is a public health issue in neglecting latrine/septic tanks emptying. In mostly rented "houses", households are not willing to pay for costly one-time payments for the mechanical emptying of septic tanks. They rather pay a smaller fee to a manual emptier for removing the top layer of the waste which is then disposed

in the vicinity. Excreta disposal situation in slums of many African cities has become dramatic: considerable quantities of sludge from on-site sanitation installations – faecal sludge – are disposed off daily, untreated and indiscriminately into lanes, drainage ditches, open urban spaces, inland waters, estuaries and the sea.

57. Secondly, because in rural communities where "traditional" sanitation practices such as open-air defecation are common, demand for improved sanitation is often low. This aspect has a gender dimension: the lack of effective demand might be traced to unwillingness on the part of male family heads to prioritize paying for sanitation services and the lack of female voice in defining spending priorities.

Table 3.3: Factors that influence willingness to pay

Community factors	Demand and participation of communities (men, women, rich, poor) Perceived advantages from improved services (health, distance, type of service, economic activities, livestock, social cohesion, increase in living status, little migration, etc….) Confidence in the water committee Prevailing local customs and legislation Income levels Presence or absence of alternative sources Level of satisfaction with existing services Expectations on subsidies (for sanitation)
Factors related to services	Costs of water or/and sanitation system Water tariffs Continuity of service Water quality Management efficiency of the service, including the billing/collection method
Political factors	Legitimacy National strategy Donor policies

58. In areas where sanitation does not rank high in a household priority-setting process and awareness campaigns, strategies for increasing willingness to pay need to take advantage of modern marketing strategies which focus on basic human emotions, such as pride and shame. Such programmes could also, where feasible, provide information about the potential for human waste to be used as a resource in agriculture.

59. In rural areas, households will be able to dig a new pit for their latrine when the original pit is full but interventions need to make sure that the cost of latrine slabs is accessible and that they can be made with local materials. In slums, the problem lies mainly with unaffordable emptying fees. Incentives can be provided either to households (who can be remunerated for pit emptying, selling the waste to urban farmers) or to collection companies (who are more likely to be charged for the faecal sludge discharge to the treatment plant and therefore require payment for providing the service). Either model is prone to abuse. Another option consists of a sanitation tax collected from households through the water bill to subsidise the faecal sludge treatment plant. The main problems arise from the fact that many slums do not have household water connections in the first place and in many cases there are two separate agencies dealing with water and sanitation, increasing administration costs.

60. Targeted subsidies for latrine slabs (for instance support to private providers in the form of training and start-up costs, in some cases subsidies for each slab sold) and emptying fees for the poorest households paired with social marketing efforts have proved successful in increasing sanitation coverage[3]. However, in both rural and peri-urban areas, without hygiene campaigns and behaviour change, the full potential health impacts of clean water and sanitation might not be fully realised.

3.7 Ability to pay and perceived economic benefits

61. Experience has shown that by involving users in the design of projects, and hence dealing with both the domestic and productive aspects of a water supply project at inception, it is much easier to convince communities of the need to pay for services. Particularly in rural areas, productive uses of water have a crucial role to play in converting water consumption into the funds needed to buy spare parts and to pay for routine maintenance (for more details see Annex on multiple uses of water).

62. Clearly establishing the link between water supply and economic benefits seems to increase people's willingness to pay. Table 3.4 provides suggestions for key factors to be discussed with communities and households when assessing ability and willingness to pay.

Table 3.4: Factors that influence ability to pay

Poverty (in spite of willingness to pay)	This can reduce the consumption of water and stimulate the people to return to less safe 'traditional' water sources.
Perceived link between water supply and economic benefits	Saving time and money to invest in income-generating activities: Agriculture: vegetables, fruit trees Livestock: poultry, goats and sheep, cows Agricultural income Handicrafts Brick production, construction Services: hairdressing, tea stalls, cafés

63. The actual impacts on poverty that might be achieved by promoting productive uses of water will clearly depend on the other constraints faced by poor people and on the targeting of water supply improvements. Growing vegetables in the backyard requires land as well as water, and lack of markets for produce or limited access to credit may be equally or more constraining than poor water supplies.

64. Willingness and ability to pay discussions will need to be undertaken with the communities and the households of different income groups. For a more detailed analysis to match demand needs with service levels, price differentiation and subsidies, see Step 4 – The basis for charging.

[3] For a discussion on different possible scenarios see Steined, M., Montangero, A., Kone, D. and Strauss, M. 2003. Towards more sustainable faecal sludge management through innovative financing. EAWAG/SANDEC, Duebendorf, Switzerland. http://www.sandec.ch/FaecalSludge/Documents/Money.flow.models.pdf

STEP 3: DETERMINING REVENUE REQUIREMENTS

3.8 Determining revenue requirements

65. Understanding the different types of costs is crucial in identifying what levels of recurrent revenues are required and their source. Initial capital investment is the most obvious cost perceived and understood by rural households[4]. However, experience has demonstrated to households that governments and or donors are prepared to pay for capital expenditure, apart from some notional labour contribution to construction. The nature of an often highly dispersed population with low access to cash, high costs of collection and limited banking and accounting capacity in rural areas means that it is not normally possible to replicate the urban utility model of financing capital costs through user fees.

Capital investments in fixed assets (Capex)	**Water supply specific**: Water resources facilities; boreholes; hand-pumps; motorised pumps; well-protection; spring boxes; gravity-flow pipelines **Sanitation specific**: Pit digging; latrine slabs; superstructure; sludge management and treatment equipment; vacuum trucks and other transport containers; **Water supply and sanitation**: Offices, IT systems, maintenance vehicles, depots and warehouses; land for protecting water quality; extension of the distribution (non-networked)

66. However, there remains the three types of recurrent expenditure in the provision of water supply and sanitation services in rural areas: operating and minor maintenance expenditures (Opex) including management and administration; capital maintenance expenditure (CapManex) to maintain the infrastructure in serviceable condition through renewals and replacements; and the costs of servicing capital (in some projects the interest on a loan has to be paid and principal repaid in instalments). The table below describes these in detail.

Operating & minor maintenance expenditures (Opex)	**Water supply and sanitation:** Labour; power costs; cost of materials; direct support costs (community capacity building, hygiene awareness, etc) **Water supply specific:** Water source protection and conservation; point source water treatment; non-networked water distribution **Sanitation specific:** Pit-emptying tools; maintenance of transport containers, fuel and oil for vacuum trucks and equipment; discharge fees to sludge treatment plants; sludge management and treatment
Capital maintenance charges/ expenditure	**Water supply and sanitation:** Renewal, rehabilitation and replacement of fixed assets **Water supply specific:** Replacing pumps and rising mains; cleaning of spring-boxes and water tanks; flushing/cleaning of boreholes; catchment protection **Sanitation specific:** Pit latrine/septic tanks emptying fee; pit re-digging (rather than

[4] For further information, the 'WASHCost' project is focused on exploring and sharing an understanding of the true costs of sustainable rural and peri-urban water and sanitation services: www.washcost.info

(CapManex)	emptying); rebuilding of superstructures
Costs of capital (debt and equity)	**Water supply and sanitation:** Cost of interest repayments on a loan (incl. microfinance); dividends for owners' equity (for small scale independent providers); loan amortization (if cash accounting); bank fees

67. There is a difference in approaches between rural and urban cost recovery for capital investments. Urban customers are presumed to support capital investment through user fees that go towards the cost of capital, and maintaining the level of that service through payments for capital maintenance expenditure (depreciation being the accounting charge). Due to the long life of the assets, this results in relatively small additions to the monthly bill and is a major aid to affordability. Generally, poorer rural communities and households are required to pay some capital contribution in advance, which can be a barrier to access for cash limited communities. Apart from cash contributions, communities can also make contributions in kind (such as labour). The requirement for contributions is imposed in order to increase ownership of the installed system among the community, recognising that any additional regular payments are unlikely ever to be made.

68. In rural &/or non-networked systems, the capital investment costs and some direct support costs are therefore usually paid by government (through taxes) or a donor (transfers) as without conventional recovery of capital charges over a long period investment costs are unaffordable. Normal lending procedures are not effective where there is no regular revenue. More attention should be focused on how Opex and CapManex costs can be recovered from communities and households when discussing service levels and technology options with the communities. Often, these costs are considered "small" and the communities are left to figure by themselves how to collect the required amounts. This is particularly difficult in economies with limited cash transactions. However they are real costs and with shorter and more vulnerable asset lives than for urban pipe networks the result is the all too common lack of capital maintenance such that systems fall into disrepair and users cannot access the desired benefits until the cycle begins again with the provision of a new tax or transfer-funded rehabilitated facility.

3.9 Future costs for sustainability

69. Capital maintenance expenditure and potential revenue streams to pay those costs are critical to avoid the failures represented by haphazard system rehabilitation. Payments for on-going support costs to maintain existing capacities and institutions within the community for managing the service are also required, though they are equally often ignored. Sometimes, caretakers leave their communities in search of better jobs after they have been trained, or the water committee falls apart after disagreements, a corruption scandal or other reasons. Most projects and programmes rely too often on the community, local NGOs or the private sector and do not sufficiently involve local governments during implementation. However, when there are serious system breakdowns or when there are conflicts within communities and the implementing agency has left the area, some support and mediation is required from outside the community. The costs of ensuring that local government staff have the capacities to help the communities when systems break down or to monitor private sector performance should not be overlooked.

70. At a higher institutional level there are also indirect support costs related to rural &/or non-networked systems. These include institutional capacity building and skills training at regional and national levels and also include built-in incentives to prevent a local "brain drain" once technical and administrative staff is trained – and until a critical mass of people is trained. This category also includes the cost of developing a strategy for IWRM, water and wastewater management, and developing and maintaining monitoring and assessment information systems which are critical for gauging the effectiveness of programmes as part of a broader development strategy.

71. **Direct and indirect support costs** should all be recognized as part of the total cost of providing sustainable water supply and sanitation services. However, it is recommended that the burden of sustaining the support costs over the long term should be recovered through general societal contributions (taxes).

Direct support costs	Overheads, abstraction licenses to support catchment management activities paid to water resources/ environmental management agencies, license payments to economic regulatory agencies and support fees to consumer involvement mechanisms. In conventional accounting systems for utilities these direct support costs are recognised as part of operating costs (OpEx).
Indirect support costs	Institutional capacity building and skills training at local government and national government levels Development and maintaining IWRM, water and wastewater management and development plans Development and maintaining monitoring and assessment information systems Ongoing development, refining and implementation of policy

3.10 Support to revenue through societal contributions

72. Societal contributions towards the water and sanitation sector need to be based around the answers to three fundamental questions:

- What is the objective of providing that support or subsidy?
- What source of funds will be used to finance such measures?
- How will these funds reach the target population?

73. Within a sustainable development framework, the need for subsidies to be directed at providing services to the poor is understood and widely accepted. It is generally agreed that in some poor areas of middle and low-income countries subsidies may be necessary to support access to basic amounts of water for the poorest. Environmental and public health externalities make it socially beneficial to increase access to improved water and sanitation services.

74. There are essentially two sources of funds for subsidies: either from general taxation (national or international), or other utility users (cross subsidisation). In rural and/or non-networked areas, the scope for cross-subsidisation is reduced as a result of the imbalance between the fast growing low-income population and the stagnating or declining larger consumers' group (many times resulting from poor cost recovery strategies). Some countries have adopted the transfer of a surplus fund on water from urban to rural areas; however, many

public utilities do not have the surplus required and many public/private utilities are increasingly required to be financially autonomous, restricting the scope for such transfers.
75. The most common practice is to utilise societal contributions, that is through tax revenue and reallocation through government budgets and international taxation (donor funds). However, many countries have already either a large fiscal deficit or inefficient taxation and transfer mechanisms which prevent them from improving access to those that cannot afford it.

76. When the objective of providing the subsidy has been fully costed and the source of funding agreed, it remains to select the instrument by which the funds are to reach the target population. For rural populations these can include, for example, subsidies for investment costs, setting up support teams to ensure capital maintenance and promote hygiene practices, setting up revolving funds at district level, setting up guarantees which allow local entrepreneurs (drillers, latrine diggers, latrine slab construction, suction trucks for pit latrine emptying, etc.) to access specific bank loans at lower interest rates and extended payment periods, output-based aid, etc.

77. If available subsidies cannot cover the difference between the costs of service and the expenditures recovered from user contributions, service levels and coverage targets may need to be lower, to reduce the costs. Reaching the appropriate mix of service levels, coverage targets, user contributions and subsidies is an iterative process.

STEP 4: THE BASIS FOR CHARGING

3.11 The basis for computing user contributions

78. Total revenue requirements will be dependent on service levels which need to be decided in an interactive process with the communities involved. Different sources of funds will be required to cover the different costs incurred. More attention should be focused on how long term Opex and CapManex costs can be recovered when discussing service levels and technology options with the communities. Decisions need to be made on what will be the sources of funds to pay for the direct and indirect costs which are key to sustain the services.

79. Discussions on service levels and price differentiation should take place using participatory approaches. The participation of communities, both men and women, in the design and implementation of improved services, constitutes a great commitment by communities to take responsibility for the service since they will have to manage, operate and maintain it, as well as pay for its functioning. A needs and problem analysis with the community would, in this case, focus on cost recovery. Questions to be answered would include:

- → What are the economic activities of men and women within the community?
- → What is the income from these activities?
- → Is this income sufficient to cover possible costs of the desired service levels?
- → Are there important seasonal variations?
- → Who pays for water, men or women?
- → What has been the custom of the community in relation to paying for water?
- → What is the community's perception of the improved water supply system?

80. Gender considerations are especially relevant for cost recovery in rural areas because men and women have unequal access to and control over water and other resources including land, time and credit. It is also important because women do more domestic work than men, including handling and paying for water. Finally, it is important because men and women have different productive uses of water.

81. **The demand responsive approach** aims to ensure that the service level chosen is affordable because communities and households only choose the level of service which they know they can afford. There is tremendous opportunity for service and price differentiation in the rural areas. For water supply and non-networked sanitation in the rural areas, there is a 'ladder' of potential technologies (wells with or without pumping mechanisms, boreholes with hand-powered or powered pumps, springs with or without pipe distribution, gravity flow systems with varying degrees of sophistication, rainwater catchment tanks etc.) which can be accessed according to willingness to pay.

82. Discussions should identify the most sustainable technology and consider all financial implications and commitment to long-term management. Clarification should be made about any necessary adjustments to the existing O&M system, defining the responsibilities of the

various actors in the development of the project. Choice of technology for service provision has a definite impact on the level of future operating and minor maintenance expenditures. If a community actively chooses a technology at a known price and agrees to manage the system, it also tends to invest in both maintaining and improving performance (see related Annex for a checklist on Technology Choice).

83. Although it is desirable that in rural areas communities should pay all of the costs related to operation and minor maintenance, in some communities user contributions alone may not be sufficient to cover all of these costs (refer to step 2 and Table 3.1). Likewise, beneficiary communities are required to make up-front contributions to capital investments (either in cash or labour) which ranges from 2% to 20%. These contributions are made to enhance ownership and hence encourage sustainability of water and sanitation services. Many communities find it easier to contribute in labour towards investment costs. From a cost recovery perspective this means that a proportion of the total costs in rural and/or non-networked services will need to be covered by other sources (government budgets; transfers from donors); and the investment costs would be best obtained from external sources.

3.12 Cost sharing agreements

84. Partnerships between donor agencies, local NGOs, communities, local authorities, and local private sector providers have been shown to improve the effectiveness of projects in many developing countries. The development of effective partnerships, as opposed to parallel and government-isolated processes, tends to be time consuming, but as a result of active communication, shared work and harmonisation of approaches, these initiatives also tend to be better able to face financing challenges as they arise, without threatening sustainability of services.

85. It is important to clearly define the financial and operational responsibilities of all stakeholders - including the community, national government, local authorities, NGOs, donor supported projects & programmes, and possibly others such as religious organisations, individuals or the private sector - includes determining who is financially responsible for which costs, and over what period of time (see Annex – Examples of operational and financial responsibilities).

86. Besides shared financial responsibilities, partnerships can help build capacity through training and skills development, and, with the assistance of local NGOs and community organizations, to transfer knowledge about a community's structures and demands at a low cost to those that are not as well placed to understand local needs. Partnerships can help in replicating successful initiatives from districts to entire regions and effectively contributing to increased coverage for the poorest.

3.13 User charges in non-networked &/or rural services: a typology

87. In non-networked and/or rural water and sanitation services there are many ways to collect user contributions. Attempts should be made to recover some form of fixed charge, based upon access to a facility (a handpump for example) or based upon a fixed level of consumption, i.e. a container of water taken from a powered ground water source. However, the reality of dispersed point sources or services means that user charges in rural and/or non-networked services more often become household payments or community contributions when the need for funds becomes most urgent. The following section describes some of the many variations by which revenue and funds are collected. [Table 3.4 in Section 3 on networked &/or urban covers conventional user charges].

88. Cost recovery for sustainability, where funds are available for timely capital maintenance, is dependent upon regular user contributions through some form of levies or user fees (table 4.5). Programmes need to consider the best approach in any specific location that will be accepted by the community as a means of raising, and most importantly safely banking, user contributions for ongoing commitments.

[More details on user contributions to rural and/or non-networked water supply and sanitation are provided in Section 10 (Part 2) of the Knowledge Resources].

Table 3.5: User contributions: levies and user fees

Pledges or donations	Collected by each person/family when there is need for operating and maintenance expenditures.
Payment in kind	By giving of labour, livestock, crops at harvest time, community farm. Difficulties of people's perceptions of value, volatility of prices, and difficult administration.
Fund-raising ceremonies	Political meetings, election meetings, eg 'Harambee' gatherings, weddings, social gatherings, religious meeting points, lotteries, entertainments, dances, beer-brewing, appeals to village rich and businessmen/traders.
Community levies	Can be charged per head, per household, flat rates or stepped rates according to wealth/land, decided by Village Development/Water Committee. Difficulty of communicating decisions on billing might lead to problems of collection.
Tariffs or levies imposed on village by community water committee or water agency	Per handpump, per standpost, per container water supplied (flat rates, graded rates, mixed rates).
Home town associations	Urban dwellers and wage earners giving to their home village

3.14 Community access to financial sources

89. This section is relevant for the rural and/or non-networked section because much attention is put into user contributions for capital investment costs when a bigger problem is in the payments and other contributions to both capital maintenance costs and minor operations and maintenance costs. This section looks into communities' access to sources of funds and it is proposed that support agencies facilitate/organise access to these sources by assessing the availability, reliability, sustainability and, where they are non-existent, the possibility of developing them. Possible financial sources include:

- existing community sources (voluntary funds, general community revenues, payment in kind);
- private financing (private capital, cooperative funds, user associations);
- grants;
- credit–loan mechanisms (micro-finance through banks, associations, individuals);
- specific funds (social and development funds, village or other local funds).

3.14.1 Voluntary funds

90. Voluntary funds are built up by voluntary contributions from local leaders or community groups through public meetings, bazaars, lotteries, festivals and similar social activities. These are common methods to finance construction and major repairs in communities that have a tradition of fund raising and seasonal income. People contribute to finance a particular project or activity. The success of this option depends on a certain social cohesion that ensures that users contribute according to their ability and commitment to the project.

Advantages	Disadvantages
▪ Users decide on the amount of the contribution according to their ability to pay and commitment to the project. ▪ Appropriate in communities with a tradition of social projects. ▪ Can be matched to seasonal income. ▪ Encourages a sense of ownership. ▪ Appropriate to finance a small proportion of investments, minor repairs and recurrent cost particularly in communities with low income levels and for short periods of time.	▪ Difficult to finance recurrent cost of water supply or sanitation systems over a long period of time. ▪ Difficult to know who is contributing and who is not. ▪ Can cause disputes between users if people who contributed the most wish to make decisions in their favour. ▪ Some users contribute without taking into account their use of water and the benefits provided by the system. ▪ The total amount that can be collected is uncertain because contributions are decided by users on a voluntary basis.

3.14.2 General community revenue

91. Communities can develop communal productive activities, such as cash crops or a village shop, and pay water bills with their profits. Disputes may arise over the priorities to give to the use of these resources, especially when users do not have equal access to water supply.

Advantages	Disadvantages
▪ Community members do not have to use their income to pay WSS instalments. ▪ Will meet the cost of a big share of the investments if high profits are generated. ▪ A sense of commitment and unity within the community can be increased. ▪ This can be the first step towards the future development of social projects ▪ They make it possible to support developments of water supply or sanitation systems.	▪ Equity is not ensured, if all users do not receive the same level of service. ▪ Disputes may arise about priorities to give to the use of resources. ▪ The level of available resources depends on the level of profits.

3.14.3 Payment in kind

92. Households are sometimes given the opportunity to pay part of their contribution to the construction of their water supply in kind, by providing voluntary labour for necessary project activities such as trench digging, transport, sand pipe laying, or by providing local materials, such as gravel and sand. Payment of part of the construction costs in labour instead of money makes the system more affordable to a larger number of households than when all the payments have to be made in cash.

Advantages	Disadvantages
▪ Adapted to the local capacity and resources. ▪ Increases user participation and commitment to the project. ▪ Project takes into account the real contribution of communities.	▪ Difficult to give a monetary estimation of payments in kind. ▪ Does not solve cash or financial problems. ▪ There is a potential risk for people to be exploited by outsiders as free labour.

3.14.4 Private capital

93. Private capital can be channelled into the construction of a water supply or sanitation project, or to meet replacement, extension or recurrent costs. However, those who provide the capital may look for high rates of return to justify their investment, often through future contracts or ownership. Depending on the level of service and /or technology used, it can be difficult to apply this option in some rural and low-income urban areas where users are not able to pay a 'full-cost recovery' tariff that would include repaying investment costs and providing this rate of return.

Advantages	Disadvantages
▪ Effective cost recovery through clear managerial practices. ▪ Availability of resources to carry out large investments. ▪ Increases capacity to negotiate with governments and institutions.	▪ Users are unlikely to participate in decision making. ▪ Users pay a high tariff a) to repay the investment cost, and b) to provide a profit. ▪ If willingness to pay is not considered while selecting service levels and technology, it can be difficult for poor people to access the service.

3.14.5 Cooperative funds

94. Cooperative funds result from an initiative by a group of users or individuals who get together to finance productive activities, not necessarily related to WSS. Cooperatives can be for agricultural produce, for livestock, fishing, etc depending on economic activities in the area. The initial capital comes from contributions in cash or in kind from the members of the cooperative, which may be from payments for produce. Once the group has sufficient revenue, members may decide to use part of their funds to finance WSS services. Where cooperative societies are in existence, and with good financial and organisational practices, this is a good way to administer WSS services.

Advantages	Disadvantages
▪ Allow the financing of a part of major investments such as construction or extension. ▪ Encourage productive activities which can produce large resources. ▪ Well-organised cooperatives use sound financial and organisational practices.	▪ Financing productive activities can become more important than financing water-related activities. ▪ They only benefit members of the cooperative.

3.14.6 Grants

95. NGOs and donors have used grants as a type of financing mechanism for the construction of WSS systems. Donations can also come through former inhabitants of a village who live in a city locally or abroad. Grants rarely pay for recurrent costs.

Advantages	Disadvantages
▪ Poor rural and peri-urban communities can benefit from these funds. ▪ Availability of resources to carry out large investments.	▪ Donations can be targeted to produce political benefits. ▪ Can discourage the community from building up its own resources. ▪ Difficult to sustain these funds during political or economic changes in donor countries.

3.14.7 Microfinance

96. Microfinance is financing through lending mechanisms, similar to loans given by banks, except for their nature and size. Micro-finance is generally small in volume and responds directly to the specific needs of rural or low-income urban communities. It is possible to distinguish three types of microfinance:

- micro credit through a bank
- microfinance through an association
- microfinance through individuals

97. A microfinance system can be used to:

- contribute to investments;
- purchase material and equipment for replacement, extension and rehabilitation;
- finance major unforeseen repairs;
- cover short-term cash flow problems;
- develop a stock of spares, parts and tools.

98. The development of a microfinance system through an association or individuals to finance important capital investments is difficult, due to the small amount of money and the short-term nature of the credit. They have, however, been instrumental in financing small individual

devices, such as rooftop harvesting or a hammer and pulley system for wells. For major investments, communities still need to contact banks or rural development funds.

99. Funds to purchase materials and equipment for replacement, extension and rehabilitation differ from initial capital investment in that their need can be foreseen. Some projects cover future replacement costs in their user charges. In these cases, this part of the payments can be used as savings or as guarantee for possible credit. Financing unforeseen repairs and damage, together with cash flow problems, are perhaps the most frequent financial needs because of fluctuations in income or because user charges fail to cover costs. It is of utmost importance to ensure alternative financing to meet these contingencies.

100. Microfinance through associations would be particularly appropriate where the amounts needed are not too large. The development of a stock of spare parts and tools can be critical to sustain a rural water supply, especially when communities are isolated and geographically remote from major trading centres.

101. In general, microfinance can overcome financial obstacles and promote development in areas out of reach of the conventional banking system. Microfinance, furthermore, represents a strong tool to alleviate poverty, and to offer marginal groups within a community a possible access to finance. However, because micro-credit loans must be repaid, they must result in a real benefit to the community, not just increase its debt burden.

3.14.8 Social and development funds

102. Different types of funds have been established to help the water sector, most of them with a social and development aim. The main points of attraction for these funds are low interest rates and long periods for repayment. Governments can provide credit at lower interest rates than the financial market, and these funds can be used to promote social development. Credit is allocated to institutions or local governments and it is not easy for users or community groups to access it. There is, however, a trend to create funds which better respond to the needs of rural populations.

103. A good example can be found in the Social Investment Funds promoted by the Inter-American Development Bank[5]. A strong feature of these funds is their ability to tailor themselves to changing circumstances without sacrificing their efficiency and effectiveness. Through their closer contact with communities, the funds have opened new avenues for social action and have increased public awareness of poverty issues.

104. However, the funds respond mainly to investment needs for new construction or for major overhauls, and are not necessarily available to finance short-term needs and unforeseen breakdowns. Moreover, past experience has shown that communities still have great difficulty in accessing resources from these funds, while project reports often mention mismanagement as a major obstacle to efficiency. Since access is easier for local authorities and municipalities than for communities, it is important that communities and municipalities work in partnership.

[5] Jorgensen, S.L., J. Van Domelen. 1999. Helping the Poor Manage Risk Better: The Role of Social Funds. World Bank. Inter-American Development Bank Conference on social protection and poverty. http://www.iadb.org/sds/doc/1181eng.pdf

Advantages	Disadvantages
▪ Provide an enabling environment to strengthen community capacities. ▪ Optimise the use of resources because financial institutions supervise construction. ▪ Working in partnership with financial institutions, governments and other institutions allows long-term project design and programmes. ▪ Credit is cheap and repayment periods are long.	▪ It is difficult for communities to access these funds without institutional support. ▪ They can produce a high degree of dependency on institutions by communities. ▪ Potential for mismanagement of funds exists.

3.14.9 Village or local funds

105. Villagers can be encouraged to create a fund at local or village level for the maintenance of their water supply. An initial deposit is put into a bank account, which is replenished through monthly or yearly contributions. The bank account attracts interest on savings, and opens access to credits, deficits, and overdrafts. Account holders can use their savings as a financial guarantee. The fund operates as a savings bank account managed by the bank. The fund can also be managed within a village or area setting, without passing through a bank. Deposits and savings operate as a revolving fund, which works as micro-credit system through an association, as described above.

3.15 Payment mechanisms

106. A great number of communities and municipalities lack the financial management skills to organise, implement and efficiently control a revenue collection and cost recovery system. External support in this area is crucial if cost recovery strategies are to be effectively implemented.

107. A financial management system can be said to be effective when managers can:

- Estimate the revenue that the service will produce over defined periods of time and the expenditure it will need (budgeting discussed in previous sections);
- Collect fees from users;
- Keep all financial information and records;
- Use indicators to control and monitor the financial performance.

108. The aim of organising financial flows is to ensure that resources arrive in time to guarantee the sustainable functioning of the water and/or sanitation service. For this reason it is useful to think about ways and timing of presenting bills to water users, providing one or more places where water bills can be paid. Table 3.6 indicates possible options for billing and collection.

109. For effective billing, the first requirement is to know how many users the service has and who they are. This makes it necessary to register each user including their name, address, household size, and if there is a measure, record the water consumption. It should also note what bills are due to be paid by that user and the total value of the water bill for a given period of time (see Annex – Transparency and financial management).

Table 3.6: Billing and collection

BILLING AND COLLECTION	POSSIBLE OPTIONS
How to collect money?	• Billing and charging groups of users • Collection at water point • Home visits • In meetings • Users go to a public office • Users go to the house of the treasurer
When to collect money?	• Each time a service is provided • Monthly • After harvest • Beginning of financial year • Every sixth months
Who collects the money?	• Caretaker • Operator • User group • Village water committee • Community leaders • Staff from an institution • Treasurer
Where to keep the money?	• In a safe • In the village account • In a bank account • In a development fund • In the house of the treasurer • In an official account

110. The most common way of billing is by producing a water bill. Whatever the system used for billing, the most important principle is clarity: bills must contain enough information for users to understand how much they have to pay and why.

111. Once the billing system has been defined, it is necessary to determine an appropriate collection schedule. This depends on two factors: the need for cash flow to cover expenditure, and the timescale over which the users receive their own incomes. An effective system for cost recovery always considers the timing of users' incomes and fixes collection periods accordingly. For example, in agricultural areas, the main income is probably from seasonal crops, so those farmers receive their income once or twice a year. In such communities, it is appropriate to collect money at these same longer intervals (every six months). In areas where people receive their money more frequently, the collection intervals should be shorter (monthly).

112. The clear identification of places where users can pay their bills is a key factor towards creating a 'client-centred service'. At the same time, having a clear agreement about who will collect the money makes control and handling easier. The person or institution who is collecting the money needs to pay attention to the hours when bills can be paid, so that they take into account people's working hours and free time. They should build confidence amongst users, to minimise non-payment. Money collected should be kept in such a way that it is available when needed by an authorised person to meet costs. Information about the use of revenue should be given to users on a regular basis.

3.16 Community financial administration

113. Financial administration covers the keeping of all records, documents, information and books concerned with financial and accounting aspects. A simple but reliable system of financial records can greatly improve cost recovery and the support agency can look into ways to improve these (see Table 3.7).

114. The production of records, documents and information is necessary not only to keep clear and accurate accounts about the resources needed to provide the water service but most importantly to control income and expenditure. This allows decisions to be based on clear and accurate information and to maintain the confidence and trust of users, by providing information on financial management.

Table 3.7: Financial administration

FINANCIAL ADMINISTRATION	POSSIBLE OPTIONS
How is expenditure and income recorded?	• Log book/daily journal • Bank book • Bank statements
Who administers the funds? Men or women?	• The committee treasurer • A village accountant • Bank accountant • Community leaders
What are funds used for?	• Payment of expenditures related to O&M of water point • Payment of total cost • Generating bank interest • Profit rate • Use for other development projects
Who authorises payments?	• Operator • Treasurer • Water committee • Village leaders • Assembly of users

115. Records will depend on the level of information that the committee wants to provide and the legal requirements of the project. In a simple administrative structure for rural or peri-urban areas, the following records can be used: user registration forms, a diary, a bank book and budgeting records. If there is a need for more in-depth information, the following additional records can be included: income book, expenditure book, unpaid account book, record of bills to collect and a general balance.

116. Once funds have been collected and regular expenses have been met, any surplus is normally kept in a safe place, such as a bank account. Many communities wonder about how to use this surplus, which may lie idle in an account while the community has great financial needs. On this point, there are two possibilities. Either the surplus is used for water projects only or is used to develop other activities, provided this money is reimbursed over time. As a general principle, funds collected for water and sanitation should only be used for that purpose alone.

117. Making the management organisation accountable to users is an important factor in sustaining services. This includes transparent financial management and regular reports and accounts to community meetings (see more information on transparency in related Annex.) Effective control and monitoring is an ongoing, regular necessity as part of financial management. This relies on accurate information, which will be mainly found in the records and books kept by the community.

118. Financial control and monitoring are effective if they use clear, reliable, impartial and good quality information as a starting point (see examples of monitoring indicators in related Annex). One way to be impartial is to establish a supervision committee to audit the accounts at least once a year. This committee should include members of the community. Sound control and monitoring include the use of indicators that provide a good overview of what is happening, without the possibility of misunderstanding or manipulation. Possible options are described in Table 3.8.

Table 3.8: Financial control and monitoring

FINANCIAL CONTROL AND MONITORING	POSSIBLE OPTIONS
What type of financial control?	• Receipts from bookkeeping • Regular meetings of water committee • Double signature required to pay out from funds • Feed back to users • Cross-checking bill against meter reading • Cross-checking against bank statements • Registered auditors
How to monitor?	• Use log book • Make a quarterly review and overview of the situation on expenditures, incomes, percentage of people who do not pay • Establish an independent committee to check accounts • Use indicators
How to inform users?	• Regular meetings of users • Annual meetings • Notice boards, leaflets • House-to-house visits • Through newspaper or radio reports
What to do with bad payers? Particularly crucial if they include influential members of society or public institutions.	• Analyse reasons for bad payment • Improve service • Improve relationship with the users • Campaign to increase awareness of benefits of prompt payment • Reschedule debt • Introduce sanctions or cut off supplies

119. Defaulting is common in many rural and peri-urban areas, and small utilities and community committees have implemented various measures to control and reduce it. Introducing educational programmes to inform users and make them aware of the need to pay on time is always a good strategy. However, when educational programmes do not work there is the need to implement other measures. Some of the strategies used against defaulting include:

- External audit agents are hired, audit the books with treasurers, collect loan repayments and accompany the treasurer on home visits to households whose payment

is in arrears. Sometimes there are good reasons why a household is not able to pay the due contributions and a realistic payment plan can be prepared.
- Include in the user fee/contribution a safety margin to cover defaulters, alternatively, payments in advance are encouraged through a small reduction on the fee/contribution. In practice this is an advance payment which should be put in practice with the strategy mentioned above.
- Use social pressure by announcing the names of the debtors at general meetings and other places where the community gathers.

120. Control and monitoring has three stages: (i) developing indicators and checking and analysing information; (ii) presenting information to users; and (iii) discussing information and decision making. (See Annex on transparency and financial management for further details). In practice, community members will develop their own indicators and determine their own desired levels. For monitoring financial sustainability at the **community level**, possible qualitative and quantitative indicators include:

- Clear policies and rules have been agreed with communities for payments, cost recovery and subsidies;
- Male and female community members know the costs of operating and maintaining the system;
- Users can state roughly how much money is in the committee's bank account;
- There are receipts for all financial transactions.
- Monthly revenue/expenditure: shows the capacity to recover costs
- Payments received/due: shows the rate of payment and therefore of non-payment,
- Level of expenditure per category of uses: can help to detect abnormal expenditures

121. Contributions paid, efficient and transparent financial transactions:

- Percentage of users paying the tariff is more than 90%;
- Household and community payments are fully explained to male and female heads of households;
- Users can state the system of fines for delays in payments applied by the committee;
- Members of the water committee are able to explain the content and implications of their contract with a private contractor.

122. Lowest cost for good quality:

- Itemised costs of water are known and calculated accurately, reflecting market value;
- Members of the water committee have carried out competitive bidding for maintenance between at least 3 private contractors;
- Members of the water committee have checked the quality of materials supplied by a private contractor and confirmed that the quality meets specifications.

123. For monitoring **agency performance** the following indicators can be used:

- Actual time spent on supporting the communities does not exceed planned time by more than 10%;
- Funds for field visits to communities can be released within 48 hours;
- Less than X administrative steps or approvals are needed for release of funds (funds should be made available rapidly so that support is not delayed by lack of funds);
- Staff costs are not more than X% of the total costs.

124. For each stakeholder and at different levels (district authorities, local authorities, local NGOs, field staff, community committees, etc.) monitoring has a different purpose. The support agency will not only monitor its own performance and effectiveness, but also develop the capacity within the community to monitor its water supply systems. In both cases this should lead to a regular review and adaptation of operations. Communities usually delegate a large part of monitoring to a water committee, while district or local government staff monitors the effectiveness of their own operations using information from community level monitoring. A general rule is that monitoring should be done by those who have a vested interest in the reliability of the information in order to work towards improvements.

PART 2

KNOWLEDGE RESOURCES FOR USER FEES AND COST RECOVERY FOR WATER, SANITATION AND IRRIGATION PROJECTS

4 REVIEW OF AFDB USER FEES AND COST RECOVERY POLICIES

4.1 Summary of AFDB's policy on cost recovery in water, sanitation and irrigation

In 2000, the Bank produced an Integrated Water Resources Management Policy statement. The policy recognised that getting the prices right is at the very core of improving water resources management. In the process of establishing an appropriate fees and tariff structure, economic, financial and social considerations play a crucial role. Prices provide signals, and social welfare and allocative efficiency are maximised, when prices charged equal the cost of producing and supplying water. This is the meaning of treating water as an economic good.

The IWRM sets aspirational goals of full economic cost recovery, with pricing at the core of improving water resources management – but notes that full financial cost recovery is a more immediate goal, and that lifeline supplies should be available at minimal prices. The implications of the wide spectrum of national, sectoral and local situations that the Bank faces – and must take account of in its operations – is clearly recognised.

The process of project appraisal in the Bank introduces financial and economic analysis at a late stage – generally after technical, physical and organizational definition of the project. Rather than being an integral part of project design – testing the feasibility of project design against economic, financial, and cost recovery criteria – the economic and financial review is effectively an ex-post check that the project meets broadly defined viability criteria but provides no assurance of financial sustainability.

An existing paper covers standards and procedures for financial accounting that are comprehensive in scope and fully adequate to guide financial accounting aspects of ensuring overall revenue sufficiency – once the scope of and approach to cost recovery has been identified. However, the Toolkits for Financial Governance and Financial Analysis of Projects say nothing about reasonable or acceptable levels of subsidies, potentially between different groups of consumers, between regions, between sub-sectors, between rural and urban and between countries.

Approaches to national, regional and specific location tariff setting vary widely. Further, the AfDB operates in parallel with other donors and inconsistencies between broad policies of different donors will be difficult to resolve – especially when the user-fees resulting from different donor policies are inconsistent. Donor coordination is a means of addressing this issue, but will often be imperfect. Production and implementation of the Guidelines is intended to help Bank staff, RMCs and other stakeholders have a common basis to engage on the issue of cost recovery and setting charges.

4.2 Relevant African Development Bank policy papers & toolkits

The following papers and toolkits have been identified and reviewed while compiling the present Guidelines on User Fees and Cost Recovery for water, sanitation and irrigation projects.

DATE	TITLE
2000, Apr	**Policy for Integrated Water Resources Management**
2005	**Toolkits for Financial Governance and Financial Analysis of Projects**
2005, Dec	Investment in Agricultural Water for Poverty Reduction and Economic Growth in Sub-Saharan Africa, Draft 12/31/2005
2005, Dec	Microfinance: policy and strategy for the Bank group
2005, Dec	Integrated Urban Development Policy, Strategy Paper, Draft Report December
2005, May	ADF-X Financing policy toolkits
2005, May	Annual Report 2004, African Development Bank
2005	Rural Water Supply and Sanitation Initiative - Implementation Plan and Resource Mobilisation Strategy
2005	African Water Facility
2005	Operational Toolkits on User Fees in Health and Education
2005	Overview of Water Sector activities and initiatives
2004, Aug	Strategic Plan 2003-2007
2004	The Private Sector Development Strategy
2004	Gender, Poverty and Environmental Indicators on African Countries
2002	Rural Finance Toolkits
2002, Oct	Operational toolkits for the rural financial subsector
2000	Africa Water Vision 2025
2000, Jan	Agricultural and Rural Development Sector Policy
1999	Operations Manual
1999, Dec	Review of the Bank's experience in financing rural water supply projects
1985	A framework for public utility tariff policy (Electric Power, Telecommunications, Water Supply and Sewerage)

5 INTERNATIONAL REVIEW OF COST RECOVERY

In this section a brief review of cost recovery practices internationally is provided.

Financial charges versus economic costs

Claims for the merits of "pricing" typically go beyond that of maintaining and operating infrastructure, and suggest that if "*the prices are right, allocation will be optimal*." From the point of view of users, which is critical when considering political economy of reform rather than theoretical elegance, there are two radically different types of cost. First, there are the costs that any user can understand, namely the financial costs associated with pumps, treatment plants and pipes. Second is the far more subtle concept of the opportunity cost of the resource itself. There have been many proposals for doing sophisticated calculations of this opportunity cost, and charging users for this "*to ensure appropriate resource allocation*." This has not worked in practice for two fundamental reasons. First, because it is impossible to explain to the general public why they should pay for something that costs nothing to produce. And, second, because those who have implicit or explicit rights to use of the resource consider such proposals to be the confiscation of property.

An added, and very important, factor is that the ratio between financial and opportunity costs is often radically different for different sectors. It costs a lot to operate the dams, treatment plants, pumps and pipes that provide households with the modest amounts of water they use. Alongside these large financial costs, the opportunity cost of the resource itself (as measured by the value of the raw water in its next best use, often irrigation) is typically quite low. For municipal and industrial water, therefore, financial costs generally dominate opportunity costs. Accordingly for water supply and sanitation, the major focus of discussions of "water (supply) as an economic good" focuses on financial costs, and the associated issues of accountability, sustainability and transparent subsidies to ensure that the poor have access to services.

For irrigation the situation is almost exactly the opposite. It costs relatively little (per unit of water) to build, operate and maintain the usual gravity systems that provide very large quantities of water. But where domestic water availability is limited, the opportunity cost of the water is often much higher than the financial cost of supplying the water.

These numbers have profound implications. They mean that, from the point of view of ensuring that users take into account the cost of the resources they are using, the emphasis must be on financial costs for municipal supplies, and on opportunity costs for irrigation.

The great challenge for irrigation, in light of these theoretical and practical realities, is how to have farmers take account of the opportunity cost of the resource. One solution is formally defined as tradable water rights, which have the unique virtue of allowing reallocation of water on the basis of voluntary and mutually-beneficial agreements between willing buyers and willing sellers, rather than a matter of continuously adjusting prices for all users to find some optimal level that perfectly balances supply and demand while meeting social and economic objectives, or an endless search for new sources of supply.

This is not to suggest that the establishment of water markets is simple or a panacea. The operation of such systems is demanding in terms of rules for establishing initial rights (including those for the environment and informal customary rights, especially of the poor and women, and ensuring that the rights of small users are recognized and protected); the infrastructure required to measure and move water; the regulatory institutions that are essential to protect the rights of other water users and the environment and to ensure that the public interest is represented; and the information and management systems.

While these prerequisites may seem onerous, they are really prerequisites for any form of well-managed allocation system and the absence of such prerequisites is a problem for all allocation systems, including the administrative allocation systems practiced in most countries. Second, one of the many virtues of a market-based system is that, once started, there is a strong demand for better measurement, transparency, regulation and information. Third, all such established systems are working, often after initial adjustments, reasonably well. In none of the countries that have adopted such systems is there any thought to returning to the previous allocation procedures.

The policies stress the need to improve governance, to meet the needs of the poor, and overall the importance of water services (in all sectors) to alleviating poverty. There is more need for financial sustainability than the "Dublin" view that water is an economic good and treating it as such will automatically improve its management and allocation.

The policy emphasises consultation with users, clear definition of the costs incurred in providing the service, effective collection procedures, simplicity in tariff structures, pricing to achieve financial sustainability and recognition of equity concerns.

Internationally, the rationale for pricing water services has been simplified in recent years. Financial sustainability is clearly the major objective, with pragmatic recognition of political realities and the differences between sectors, and between differing income levels of users. The goal is provision of services that are sustainable, and that are financed properly (and preferably to a significant extent by beneficiaries – because governments cannot afford to pay for everything, and historically have failed to do so, and because the linkage between payment for service and its provision encourages providing agencies to be efficient). Water rights are seen as fundamental to ensuring that water use is constrained to sustainable levels, and where possible, tradable water rights are seen as the eventual best way to reallocate water among uses.

6 SUMMARY OF COUNTRY EXPERIENCES

6.1 Historical perspective on user fees and cost recovery

Cost recovery has long been a controversial issue among water supply and sanitation professionals. Throughout the 1980s – the International Drinking Water Supply and Sanitation Decade – there were two competing viewpoints.

One viewpoint argued that health and social benefits amply justified the use of public and donor funds to deliver basic services for all. The argument was that O&M funds should be generated locally to avoid the facilities from falling into disrepair and disuse. Some advocated free "water and sanitation for all". Provision of basic services was, they maintained, a prerequisite for income generation and poverty alleviation, which would bring with it affordability and willingness to pay.

On the other side, it was argued that support from governments and donors would be phased out over the years. Without external funding, systems could not be properly maintained, let alone extended to meet the demands of future generations; and communities would not value or respect facilities in which they had no stake. Thus affordability and willingness to pay must be in balance. In any event, subsidies could usually be shown to favour the rich rather than the poor, while the unserved poor are already paying a high proportion of their incomes for poor quality water from water vendors, or in lost productivity through time taken by women to collect water from distant sources. Therefore, they would be willing and able to pay for appropriate low-cost services, if they were shown to be convenient and reliable.

Over the years, there have been many variations on these basic viewpoints, including compromises between the two positions. Further, the acceptance of water's function as an economic as well as a social good became mainstreamed when it emerged as the fourth guiding principle of the Dublin Statement on Water and Sustainable Development in 1992. Although this concept has been embraced in water policy frameworks agreed at global level, its implementation has remained difficult given the complex institutional reforms and large sector investments required.

Over twenty five years have passed since the Water Decade and the truth remains that adequate cost recovery is still one of the major obstacles to maintenance and expansion of drinking water supply in developing countries.

It is important at the outset to recognise the special situation of irrigation within the generality of water uses: first, irrigation is by far the largest user of water – 70-85% in many developing countries. Second irrigation is a *consumptive* user of water – the purpose of irrigation is to remove water from the hydrological cycle and evaporate that water into the atmosphere. Most other uses of water are non-consumptive – most household use and all sanitation use involve changes in the *quality* of the water before returning it to the hydrological cycle. Irrigation is

thus of particular importance where water scarcity is an issue – irrigation takes most water from the hydrological system and doesn't send much back.

Irrigation is a productive activity, leading directly to improved incomes for its beneficiaries. Viable irrigation investments by definition produce benefits that exceed the cost of providing the irrigation service, so that the case for service charges is rather easier to make than in the rural WASH sector, where benefits are real, but not necessarily reflected in financial gains – at least in the short term. Urban water and sanitation (but not sewerage) have also been shown to produce direct economic benefits. Nevertheless, the situation regarding cost recovery and service charges in all three areas has, overall, been equally unsatisfactory.

6.2 Summary of concepts and principles

The economic argument is often said to be that the basic principle behind user charges (urban or rural) is that users should pay the economic cost of water services, as the economic price of water should ensure the optimum economic efficiency of water charges. The appropriate cost for users to pay is the long run marginal economic cost, which is approximated by the average incremental cost derived from the least cost method analysis[6]". However, rural or low-income urban communities who are managing their system have problems in understanding this language and applying its concept. The social scientist argument often places emphasis on "water as a basic need[7]", and fear that the economic approach will threaten equity, as it does not fully allow for the social dimension. Many environmentalists would agree that "*managing water as an economic good is an important way of encouraging conservation and protection of water resources*[8]", mainly by including the cost of preserving water in user charges and by applying the principle of the polluter pays.

Considering specifically drinking water, water is referred to as a social and economic good rather than only as an economic good. According to this view, it is not water but the services involved in providing safe water that have a price; hence water should be considered as a commodity rather than as a good. Clearly, however, the concept of water as an economic good has helped considerably to emphasise the principle that water services must be paid for by someone if they are to be sustainable, and consumers should contribute - a definite but not yet sufficient step towards improved cost recovery.

It is tempting to conclude that the solution lies in a balanced application of all the concepts and principles mentioned above, a sort of syncretism where everything mixes in a melting pot. Decades of conceptual evolution, directly or indirectly linked with cost recovery, have managed to highlight some commonly accepted basic principles, such as the fact that users should pay for water services, and that communities should have a role in managing their water supply and adopt a gender perspective. At the same time, one of the results of this evolution has been to show that there are no blueprints generally applicable to all situations and contexts – indeed while theory has evolved to include social, environmental and economic dimensions, the most

6 Asian Development Bank. 1999. *Handbook for the Economic Analysis of Water Supply Projects*. Page 190. http://www.adb.org/documents/handbooks/water_supply_projects/default.asp

7 Desmond Mc Neil. Water as an economic good In: Vision 21 : Water for people. "http://www.wsscc.org./vision21/docs/doc28.html)

8 Dublin Statement on Water and Sustainable Development. 1992. Extract from principle 4. http://www.wmo.ch/web/homs/documents/english/icwedece.html

basic levels of cost recovery required to ensure continued functioning of the assets are generally not achieved.

The practical approach to cost recovery considers only the financial costs of a project or programme, such as operations and management costs, capital costs and possibly investments for future growth and rehabilitation (which includes accounting for depreciation of assets over time). Beyond this "sustainable" minimum, policy then dictates whether part or all of these costs should be recovered from consumers. Even full recovery of the financial costs associated with the operation and management of a system does not guarantee that the system will continue to operate after it is constructed. Water services – whether water supply or irrigation – operate within an institutional context, including regulatory functions (water quality, dam safety, hydrological information).

7 KNOWLEDGE RESOURCES ON NON-NETWORKED AND/OR RURAL WATER SUPPLY AND SANITATION

This section reviews literature on experiences with cost recovery in rural or peri-urban areas with non-networked water supply and sanitation. Sections 10.1 and 10.2 provide an overview of existing approaches to user contributions, Section 10.3 describes options for collecting user charges, Section 10.4 shows concrete examples from several African countries and Section 10.5 concludes with a summary of the country experiences.

The reader is recommended also to look at 'Managing Water for All: An OECD Perspective on Pricing and Financing', (OECD, 2009) which has usefully popularised the 'Three 'T's – tariffs, taxes and transfers.

This review of international approaches to rural and non-networked water and sanitation cost recovery was prepared by Kinsgley Acheampong, IRC - International Water and Sanitation Centre

7.1 User contributions for non-networked rural water supply

In rural and/or non-networked water supply, users are often required to pay around 5% of capital costs (which many times can be paid in labour or local materials) and 100% for operation and maintenance costs. For sanitation, users are mostly required to pay 100% of capital costs and operation and maintenance. Some donors and governments subsidise latrine construction, though this has increasingly been criticised especially for households on the grounds that it is not sustainable. Most policies and strategies are silent concerning rehabilitation and expansion. Concrete country examples in Section 7.3 illustrate existing practices.

Experience has shown that when funds from government and donors are cancelled or reduced, most existing water and sanitation systems are threatened with collapse. Many communities do not have systems in place to recover operation and maintenance costs and when major breakdowns occur there is no back-up support.

Research conducted in 15 countries with the main objectives being to investigate possible linkages between sustained, well used, community-managed rural water services and participatory approaches which respond to demand and encourage equity with regard to gender and the poor. The study covered 88 community-managed water services in 18 projects. The most important findings on cost recovery were as follows:

- The more demand responsive the projects (with both women and men having a say in decisions about service planning, including arrangements for local financing), the better the services were sustained;
- The more communities were empowered (i.e. they had authority and local control during construction and management and they had been trained), and the better they

accounted for the use of this power to the users, who were also the tariff payers, the better the services were sustained;

- Well-sustained services were also better used, with higher percentages of people having access to the water and a greater shift towards using only improved services, at least for drinking water;
- Users contributed to investment costs, through cash in 62% of the cases, and with their labour in 90% of the cases;
- In half of the projects, user payments covered operation and maintenance (O&M) costs; one quarter also paid for repairs and one quarter made some profit;
- The study found significant associations between more effective cost recovery and democratic decision-making on technology choice and maintenance arrangements, the involvement of women, better accounting and budgeting, and more timely payments.
- All the communities included better-off, intermediate and poor households, yet only 9 of the 88 services had differentiated tariffs;
- Within households, it was common for drinking water to be used for productive purposes, and this was seldom reflected in tariffs. Poor and better-off households both used water productively, when they could, but the better-off households had more opportunity to benefit from such uses. Though involving small amounts, they were one of the reasons for water shortages. Of 88 water services, 28% had seasonal shortages and 10% never supplied enough water to meet primary household needs. In some services, productive uses were banned. In many cases it would have been better to design for these uses and their payment in participatory planning, as they could have generated income to sustain the service;
- Agency policies and approaches have significant influence on effective and sustainable service delivery.

There are two main ways to recover operation and maintenance costs from non-networked water supply systems: flat rates and graded rates. There are also situations of mixed systems which use both rates and/or payments generated from private metered connections for which an overview is provided in Section 7.

7.1.1 User charges: flat rates

In a flat rate system, each user household pays a fixed amount of money, regardless of the volume of water used. In its simplest form, the total amount of money needed for the upkeep of the improved water system is divided equally over the number of households using the water. Payment may be per month, per season, or per year. This should depend on when it is most convenient for the users to pay (see Example 7.1).

Flat rates are easiest to organize with private taps or yard group taps. In these cases it is clear who the users are and who are not. They should also be limited to situations where benefits are more or less equal. Individual households which for whatever reason make much more use of water should be charged proportionally. This is discussed in the graded rates. With public standposts, families who live at further distance or have their own water source may particularly object to paying the same amount of money as those who live close to a tap.

A special case of inequity caused by flat rates may occur when both men and women are asked to contribute the same amount to the community water system. There are cultures where men and women each have their own separate sources of income and financial responsibilities. The

income of the women comes from selling surpluses of their food crops, that of the men from selling cash crops. Women's incomes are therefore usually smaller than those of men. Thus, a fixed contribution to the water supply means in practice that the women contribute a much greater proportion of their income to the community water system than the men.

Example 7.1: Flat rates: monthly, annual or both?
In a community with 500 households it is calculated that 30,000 shillings are needed per year for the upkeep of the water supply system. Because all households have the same service level (i.e. type of water supply) and income differences are not very great, the community decides that every household will pay an equal amount of money, or 30,000/500 = 60 shillings per year. However, there is considerable disagreement about the time of the payment.

Farmers in the community prefer to pay this amount in one or two big instalments after the harvest of their crops. The few farm workers also prefer to pay in bigger instalments, but after both harvesting and planting when they are earning most. Small business people on the other hand prefer to pay in small instalments every month. Although the committee recognizes the value of flexible payment, it fears that too much flexibility will result in a lower payment discipline and higher administrative costs. A meeting is therefore called to discuss this issue. It is decided that the monthly payments will remain possible, but that those who want to pay ahead when this is most convenient to them can do so. In exchange they will get a small discount on their water rates.

A major disadvantage of flat rates is that they press more heavily on low income households than on the better off, even though the latter often use relatively more water than the former. As a first step to a fairer rate system some communities have made some categories of households exempt from rate payments.

7.1.2 User charges: graded rates

Another option used for user charges are graded rates. For this type of rate handpump access and taps are not metered, but user households are classified into categories. These categories are based on estimated differences in water use and income (e.g. high, medium, low). The advantage of graded user rates is that they take a rough account of volume used and payment capacity, without having to go to the expense of installing and reading water meters. Such rates have for example been introduced in several communities in Colombia. The user households have been grouped with the help of the promoter of the water agency. The water rates for each group have subsequently been calculated in a users' assembly, and accepted by public vote (see Example 7.2).

The introduction of graded rates is easiest when clear and valid indicators of water use and income level can be found. This will depend on local circumstances. For example, in some areas size of land—holding is a good indicator of income. In other areas the productivity of the land varies too much for this, and the quality of housing is used instead. An alternative to working out graded rates through assessments and dialogue in individual communities is to ask acceptable indicators of household income and volume of water use for the area concerned.

Another way of charging graded water rates is to raise a levy on cash crops. This is most feasible in communities where these crops are marketed through a cooperative or a single—

commodity marketing board, and the water supply is cooperatively or community-owned. Collecting fees in kind in this way has the additional advantage of including an element of automatic indexation (revenue is linked to rising costs).

Example 7.2: Different rates for different user groups
In an agricultural community in Southern Colombia a flat rate of 28 pesos was proposed. This was unacceptable to the large poorer section of the community. Originally, the indigenous small farmers paid a monthly rate of 23 pesos. Agricultural settlers paid between 33 and 38 pesos per month. The water agency then proposed an evaluation of the socio—economic status of each household.

Existing data (the government property tax) were supplemented through home visits by the promoter. He looked at type of housing, household assets, size and type of farm etc. In a general assembly the users agreed on a division into four categories of wealth and water use: low, low-to-medium, medium-to-high and high. The estimated recurrent costs of the scheme were calculated. Taking into account the number of households in each category the actual rates agreed upon were 23, 38, 63 and 90 pesos per month.

In the region of Saint-Louis, in the Senegal River basin project, 95 water points have been surveyed. Example 7.3 shows the different ways that non-metered tariffs were collected. The classification in this example shows a wide variety of tariff definitions within one region. However, tariffs defined per plot, per carriage and per head of livestock are the ones most commonly adopted in this area. This is due to the nature of the economic life and the priorities of this region. Tariffs can and should be adapted to local situations.

Another way of classifying users, derived from an example in Mauritania, is based on the distance between the water point and the user's home. The closer the user lives to the water point the more expensive is the water, and vice versa. Each family, living from 5m to 50m from a water point, pays 10 UM (the local currency) per day. Families living from 50m to 100m from the water point pay 5 UM per day. Families from 100m to 300m from the water point pay 2 UM.

Example 7.3: Different ways of defining a tariff (Senegal River Basin project)

Type of tariff	Frequency	Remarks
Per capita	1%	Used mainly in socially homogenous communities
Per man	3%	Can be used in monogamous societies
Per married woman	6%	Can actually represent a family unit, or used for family headed by single women
Per household	17%	Can be used when average size of households is known and more or less the same in the community
Per plot	33%	Corresponds to the traditional habitat entity
Per bucket	0%	Social distinction not taken into account.
Per head of livestock	40%	Used in communities where livestock is an important aspect of economic life, and where the number of heads is known
Per herd	11%	Used in communities where livestock is an important aspect of economic life, and where the number of heads is not known
Per carriage	44%	In this project, corresponds to the most common way of collecting water

7.2 User contributions for non-networked sanitation

In rural and/or non-networked sanitation, users are mostly required to pay 100% of capital costs and operation and maintenance. Some donors and governments subsidise latrine construction although most policies and strategies are silent concerning capital maintenance (pit latrine emptying).

Where possible, the costs of toilets should be used as an incentive to increase uptake of the sanitation product being promoted. Ensuring the lowest feasible price for an adequate product is salient to more than latrine construction. In one project for which information is available, reports that householders as well as local masons were oriented about the cost, quality of materials and amount of time needed for construction. When both clients and masons knew how long it took to build a latrine, the labor costs could be controlled. To identify good quality materials at lowest cost, the prices and quality from local suppliers retailers were also compared and posted locally. Through such strategies construction costs were reduced by 15% to 40% below government estimates, depending on the location.

The importance of private sector in cheaper toilet provision is immense. The range of this involvement includes:

- Construction of toilets and sewerage systems: contractors, masons, plumbers and so on. Most latrine construction not carried out by householders themselves is probably private.
- Retail of parts such as platforms, traps, pans: vendors, sanitation marts
- Production and transport of parts for domestic and institutional toilets, pipes, treatment plant equipment and so on.
- Pit emptying services, particularly in urban areas.

For example, even without public investment, more than a million septic tanks were installed in Manila and Jakarta. Eight percent of the rural households in India invested with small private providers to construct toilets.

Private providers can be the preferred choice. In Bangladesh, assessments show that customers often prefer latrines produced by private producers despite the lack of subsidy. They tend to be cheaper because the designs are simpler and transportation costs for materials tends to be less than in government centres. Private producers also offer a wider variety of products.

The private sector can benefit from judicious support as indicated in this example from Bangladesh. Twenty-five years ago, there was little private sector involvement in provision of toilet and sewerage facilities. There are now about 4,500 latrine production and retail centers in Bangladesh, of which 3,000 are private, representing about 65% of the toilet market. At various times some support has been given to private providers in the form of training and start-up costs from UNICEF, NGO-forum and other institutions. Many small-scale providers also supply materials unrelated to sanitation such as cement posts, blocks and house decorations. This diversification can increase sales, off-setting the lumpy demand for latrine parts, for example, in the rainy season. The private providers tend to be located in areas where income is more assured, such as around towns and cities. Thus, some more heavily subsidized production centres are located in more rural, less profitable areas.

There is far more agreement (when compared with subsidies) that the availability of credit can be important for the success of toilet and sewerage programs. Credit comes in many forms. For example, women's groups (savings groups) have provided loans for members for latrine construction. In Jamaica, credit for sanitation services was provided through network of outlets managed by a financial institution and mixes with commercial leading and concessionary loans. In Bangladesh, small private providers extend credit in the form of instalment payments. In Kerala, India, the NGO did the same. In Peru, hygiene products and children's potties were made more accessible within the community through a revolving community fund. For more information on sources of finance see section 10.3.

7.2.1 Subsidising sanitation

The debate about subsidies focuses on effectiveness and sustainability. One current thinking espouses eliminating subsidies and focusing instead on marketing improved sanitation options. The argument is that, in the past, latrines were built to optimal—meaning expensive--standards and then subsidized so that target users could afford them. However, high subsidy strategies were difficult to scale up; and the subsidies themselves can be very difficult to manage honestly. Often funds did not reach households most in need, but were appropriated by richer groups. The poorest people did not seem to benefit from subsidies. Furthermore, there have been interventions, without subsidies, where intensive promotion has resulted in a high level of coverage. These include, for example, the large district of Midnapore in West Bengal and the extensive pilot districts of the UNICEF-Bangladesh social marketing program, as well as many urban areas around the world.

The counter argument is that the cost of safe facilities is a significant proportion of annual income of the poorest people ('hardcore poor') who may, in any case, lack disposal income. Pro-poor strategies (Poverty Reduction Strategy Papers, prepared by governments with the World Bank) indicate that the very poorest people need subsidies, although at lower levels than in past decades. With a small subsidy, they can at least have a pit latrine with an adequate slab. The MDG Water and Sanitation Task Force in its report of 2005 agreed that there is a place for targeted subsidies to reach the poorest groups. At this time, the governments of India and Bangladesh have instituted subsidies for the hardcore poor amounting to about $8 to $10 per household, which, in the case of India, is about one-fifth the level of the earlier subsidies of the early 1990s. Perhaps, the quality of management may be an issue. Two well-managed NGO programs demonstrated the ability to administer subsidies. First, the Kerala latrine-with-education project was able to monitor, with community groups, showing that it had correctly located the poorest groups who then received subsidized toilets at the end of the normal program. In Nigeria, WaterAid was similarly able to implement a dual subsidy, with poorer households receiving up to an 80% subsidy against construction costs and wealthier households only 20%. Note, however, that both of these examples are drawn from the NGO sector. The implication here is that subsidies, if provided, should be at low levels and carefully-administered only for the very poorest people.

The complex relation of poverty and subsidy is illustrated by a case study from Mozambique. The program subsidized the cost of latrine slabs for peri-urban dwellers around Maputo, many of whom, as a study indicated, were destitute. The subsidy reduced the costs of latrine slabs to the client from $22 to $4.50. The subsidy was then eliminated in 1997 and over the following

two years, sales of the slabs fell by about 80%, indicating that both the poor and above-poverty-line groups reduced purchases.

7.3 Options for collecting user charges within a community

In non-networked systems, user households pay a regular and fixed contribution for the special purpose of financing the water system. Payments are made to the water agency, the local government or a water users' organization. But there are also other common options for collecting funds and resources required to construct and maintain the water supply: voluntary funds, general community revenues or cooperative funds. These can also be combined with community group savings and revolving funds.

7.3.1 Voluntary funds

With incidental fundraising, local leaders or a community group collect voluntary contributions for the construction, repair and expansion of the community water supply. Funds are collected at public meetings, bazaars, lotteries, festivals, and similar social activities, or through door to door collections. The total amount that can be collected in this way is uncertain when the size of the contributions is left to be decided by individual households.

Annual voluntary fund raising for maintenance is practiced in some communities with seasonal income. In farming communities for example, a special campaign is organized to raise money for the running costs of the community water supply at the time when the cash crops have been sold (see Example 7.4). A limitation of this system is that there is no link with actual water use. Households which use large quantities of water for domestic and perhaps also productive purposes such as livestock and vegetables may not pay in proportion to their use. The system is therefore only suitable when there is enough social control in the community to ensure that all user households pay a voluntary contribution in accordance with their capacity and the benefits received.

7.3.2 General community revenue

In some countries, communities jointly own and manage communal enterprises, such as a communal field for a cash crop, a village shop or a flour mill. The profit made on these enterprises, or community funds generated by other means (e.g. levies on crops, cattle sales, or businesses) are used to pay for other community expenditures, such as maintenance and repair of a public standpost system (see Example 7.4).

Example 7.4: General community revenues in Tanzania

People in the Tanzanian village of Mukinzi traditionally collect their water from dug wells. These wells often collapse during the rainy season, when the area gets flooded. The village therefore decides to apply for a piped water supply with local contributions. First, each family contributes a fixed amount in cash and labour for the construction of the intake, storage tank, main pipeline and a central distribution point. Further fund collections are organized for the distribution network and a maintenance fund. However, the people argue that they cannot continue to give substantial cash contributions. In a meeting it is therefore decided that each family cultivates a part of a communal field. The proceeds are put in the water fund. By

popular vote it is decided that when the proceeds per acre exceed the needs, the surplus is divided among the participating households. Households not fulfilling their share either pay the rest in cash or cultivate a larger plot in the next season. People in difficult circumstances, such as old couples and women heads of households with small children, are exempted from labour.

This type of financing can be politically acceptable in countries where a national policy of free water means that it is not acceptable to ask individual households to pay for water from public taps, but users need to pay for the maintenance of the taps. A precondition for this type of financing is that all households have more or less equal access to the improved water supply. Otherwise the less fortunate households will quite rightly object that the service is paid for from funds to which they also contribute.

A disadvantage of relying on general community revenue is that the availability of funds for the water system depends on the income and profits from the other enterprises. These enterprises may fluctuate considerably in their results and also need their own investments. One option is to try and expand the number and variety of sources of community revenue, so that risks are more divided.

There may also be opportunities for the productive use of surplus water from the water supply, for example, for brick—making or horticulture. In general, however, it is not easy to turn such activities into a profit-making enterprise. They need good marketing outlets and demand considerable inputs, e.g. tools, seeds, fertilizer and manpower. Another issue for decision—making is whether it is better to run these enterprises as a communal undertaking or to lease them to an individual or community group for a fixed price or share in profits. Of course domestic users should not suffer from the extra water demands of such activities.

In most of these cases, it will be necessary to assess the amount and reliability of net community income with the local authorities and committees, and compare this amount with the requirements for financing annual costs of the community water supply system in the first year as well as at later stages, when the water supply will need more repairs.

7.3.3 Production cooperatives

Sometimes, an improved water supply is established and run by a group of households rather than a community as a whole. The water supply serves either the group or the whole community. One type of group is a production cooperative. Its members contribute regular payments in cash or kind, or buy shares. The resulting fund is used to finance cooperative enterprises or give loans to individual members.

Once the group has got sufficient revenue, the members frequently decide to use part of their funds to finance basic services for the group, such as a water supply and household latrines. The fund is used to pay all or part of the construction costs, or to establish a maintenance fund for an externally financed system. Because social services to members usually come in a later stage, cooperatives are already well-organized by the time that they start a water supply project. Their earlier experience with social organization and financial management is also good proof of their capacity to administer a small water system.

A limiting factor to a piped water supply for the whole community is that cooperatives function best when they are based on shared economic interests. They usually consist of a group of

people who earn their money in the same way. Often, its membership also belongs to the same socio-economic class. Thus, some cooperatives unite wealthy farmers, while others consist of poor farmers, fishermen or small entrepreneurs. In each case, problems may occur over financing water systems that serve other families besides their own group. A piped water supply with house connections financed by a wealthy cooperative does not always provide adequate services to poor non-members. Similarly a community service with public taps built by a workers' cooperative might be expanded by influential households to include private house connections, although they did not contribute to the installation of the original basic service (see Example 10.5).

Example 7.5: From cooperative system to community water supply
In 1960, a workers' cooperative in Muquiyauyo in Peru participated in building a piped water supply in their community. Public taps were built in all the main streets. Members of the cooperative contributed with money and labour. In 1966, the water supply became a community system. It was expanded to include house connections to those living along the main streets. Many of these house connection owners were not members of the cooperative. Although they had not participated in the earlier construction of the basic system, they paid no labour compensation. On the other hand, many of the cooperative members who had participated earlier lived in side streets. They did not get the same opportunity to take a private connection from the water supply they had helped to build. These factors were a cause of deep disillusionment among this group.

7.3.4 Community savings and revolving funds

Another interesting way by which communities are involved in the financing of community water supplies is a community based revolving fund. Starting capital may come from a government donation or a savings club.

In a savings club, each member of the club (often a women's group) makes a small regular contribution to a communal fund. These contributions can be in cash or in kind. In some groups, for example, members save a handful of rice every day. When enough rice has been collected it is sold to increase the funds of the group. The members of the group may also raise funds as a group, e.g. by hiring themselves out for agricultural labour during the peak season. The group's savings are paid out to each member in turn to finance a major acquisition, e.g. a corrugated iron roof with gutter, a rainwater collection tank or a latrine slab. In this way the women have succeeded in assisting each other to make important improvements for family hygiene and labour reduction. In other cases, the groups have initiated and contributed financially to the improvement of the community water supply, and have also succeeded in mobilizing help from the men.

Using the initial capital from a donor or remittances, loans are given to individual households or groups to start small enterprises or improve housing and sanitation. Upon repayment, new loans are given to other members, according to the decisions of the group. Repayment of loans plus interest makes it possible to give a greater number of new loans to others. The community may also use the capital to set up communal enterprises, such as a community shop or a workyard producing building blocks, income slowly grows until it becomes possible to finance some basic service. One of these services may be safe water (see Example 10.6).

Example 7.6: Revolving fund for rainwater storage tanks
In Ban Sieo, a small farmers' village in Thailand, live 148 families. Like many other villages in the area, they have organized their own revolving fund. Each family can buy up to ten shares in the fund at a fixed price. From the fund loans are given to individual households and cooperative enterprises. Ban Sieo has established a cooperative village shop. Neighbouring villages have set up a rice mill, a biscuit production centre, a building block industry and a silk weaving cooperative. Twenty per cent of the annual profits made with the fund are added to the fund's capital. The remainder is partly paid out to the shareholders and partly used for village services. Ban Sieo has for example built a public reading room. This helps the villagers to keep up their newly acquired literacy skills. The fund has also been used to give loans to families to build a rainwater storage tank. Poor households receive an interest—free loan. In this way, all households have built at least one tank for safe drinking water in less than 4 months. The village is now considering the construction of a simple piped water supply. The idea is to install one or two communal water points in the first phase. In the second phase, these would be expanded to private household and group connections.

Common characteristics of successful revolving village funds are strong leadership, high village unity, a high level of participation, diversified sources of income, diversified services, compensation for fund managers, external inputs, including technical and organizational training and periodic review and support visits, and good return of investments.

Despite initial scepticism, experience with loan repayment by low income households is very positive. Women in particular have gained outstanding repayment records in many countries. Contributing factors are the intimate knowledge which small communities or neighbourhoods have of their members' capacities and reliability, the creation of group liability and control, and the strong motivation to make life better for their families.

7.3.5 Microfinance for water supply

Historically, microfinance has not been available for financing water supply and sanitation activities, because these are not usually perceived to be sufficiently attractive. A long term is normally required for repayment and in some cases, there is no direct link with income generation.

As a result of cost recovery strategies and the need for community ownership of water systems, an increasing number of poor communities need to pay upfront, in cash, 10-20% of capital investments in water infrastructure. Usually, they need to save for a couple of years before they are able to pay for the required costs. Once the system is in place, funds are rarely available for paying for rehabilitations and major repairs.

To overcome the latter problem, both ASCI in Ethiopia and K-Rep in Kenya provide financial services to Community Based Organisations (CBOs) for water in rural areas. The CBOs have a separate account for community investments and make regular savings deposits which enable them to access funds for larger repairs and maintenance.

7.3.6 Microfinance for sanitation

Potential clients of microfinance for sanitation or sanitation-related services include small scale private providers and households. Microfinance has been used for the construction of household

latrines, construction of public toilets, manual latrine-cleaning services and suction truckers which are used to empty pit latrines. Leveraging household and community resources for sanitation improvements has been reported in countries such as India, Lesotho (see Example 10.7), Vietnam, Bangladesh, Pakistan and Burkina Faso.

Example 7.7: Micro-credit for VIP latrines, Lesotho
This programme provided credit to households for investment in VIP latrines allowing for re-payment over an extended period. In order to receive credit, households had to first dig a pit and provide a deposit of 30-40% of the total cost. Loans to cover the remaining costs were typically in the range US$50-300. Although the money came from the Lesotho government, the Lesotho Bank administered the loan since they had a better record in dealing with loan defaulters.

In 1990, 600 loans had been approved in response to 4500 enquiries, 252 latrines had been built and 81% of individuals had paid up. Close to 1000 VIP latrines were actually built in the target area revealing that about 80% had been built through private initiatives. This highlights the success of the promotion programme and the availability of an affordable and acceptable sanitation option. Keys aspects for the success of the project included:
- Affordable and acceptable latrine design;
- Minimal direct grants or subsidies to householders;
- A comprehensive programme of VIP latrine promotion, health and hygiene education;
- Integration of the project into existing government structures; and
- Strong coordination in policy and planning between different departments promoting improved sanitation

Looking at the credit scheme itself, repayment with interest was supposed to ensure that households accepted full responsibility for sanitation. However, administration costs for the loan were high compared to their size and additional costs like the promotion and management of the scheme were not charged to the borrower. The project was successful at promoting sanitation but it did not create a sustainable micro-finance institution.

7.4 Country policies and strategies concerning cost recovery

Whilst some countries have no policies on water and sanitation, some of those countries with policies on water and sanitation have no concrete strategies regarding cost recovery. Some countries which recognize cost recovery in their water and sanitation policies have amongst their leading constraints inadequate cost recovery frameworks. Table 7.1 provides a summary of water assessment report from WHO in 2000, updated with recent information from 2007 concerning water and sanitation policies and cost recovery strategies.

Whilst there seems to be some level of cost recovery in some, mainly urban areas of Africa, in most of the cases of non-networked services, the amount recovered is far less than the cost of constructing and maintaining the services.

Table 7.1: Summary of (rural) water and sanitation cost recovery strategies in selected countries (2007 update)

Country	Water Supply		Sanitation	
	Policy	Strategy for cost recovery	Policy	Strategy for cost recovery
Algeria	Yes	Cost recovery through appropriate tariff structure	Yes	No
Angola	No	No	No	No
Botswana	Yes	Price determined by Department of Water Affairs and Central Government Water from standpipes free Aims at 33% recovery of O&M in smaller villages	No	No
Burkina Faso	Yes	Users pay 100% O&M and 5-20% capital costs	Yes	No
Equatorial Guinea	No	No	No	No
Ethiopia	Yes	Water as an economic good Recovery of O&M in rural schemes	Yes	No
Ghana	Yes	5% community contribution for capital costs 100% community contribution for O&M	Yes	No
Lesotho	Yes	Yes	Yes	Rural Sanitation Programme Full cost recovery from users
Liberia	No	No	No	No
Kenya	Yes	Provision of water supply will be in line with the government policy of cost sharing and Minister of Water Affairs will fully encourage the active participation of beneficiaries in the development and operation of water supplies.	No	No
Mozambique	Yes	Attainment of full cost recovery by the year 2003 for urban water supply.	Yes	Attainment of full cost recovery by the year 2003 for urban sanitation.
Namibia	Yes	Consumers must pay for their own water supplies and excessive water usage is discouraged. Water supply to rural areas shall be on cost-recovery basis at least for operation and maintenance.	Yes	No
Nigeria	Yes	Priority is given to rural communities that are prepared to pay at least 5% of the capital costs in cash or in kind. Communities must be prepared to meet all the O&M costs for the facilities.	No	No
Senegal	Yes	User contribution 3% for capital costs and 100% for O&M	Yes	Users to pay 10% capital costs for community latrines and 0% for community latrines, but fully responsible for O&M
South Africa	Yes	Free basic water of 25 litres/person/day. Subsidy from national budget. The user pays for higher service levels.	Yes	Water has an economic value if it has to be used for removal of human waste, costs have to be considered.
Uganda	Yes	Users should contribute to 2-5% of the capital cost and 100% of the operation and maintenance costs.	Yes	LGs should use up to 10% of their three main grants for sanitation and hygiene in districts At least 30 percent of LGs should implement integrated sanitation and hygiene promotion work plans
Zambia	Yes	Full cost recovery in the long run	Yes	No
Zimbabwe	Yes	10 -70% capital costs 100% O&M	Yes	10 -70% capital costs 100% O&M

Source: Adapted and updated from WHO, 2000.

7.4.1 Botswana

The Department of Water Affairs ran the water supply of the large villages, mostly district capitals, whilst the District Councils run the water supply in systems in other villages. Water is provided through standpipes and individual connections. Standpipes are found throughout the villages to provide each villager access to water within not more than 500 meters walking distance. For social and equity reasons, water from stand pipes is free. For individual connections, the price of water covers only the operational costs. This price is determined by the DWA and the Central Government. The main features of rural water pricing in Botswana are:

- Partial cost recovery and high subsidies as supply costs tend to be higher in rural areas than in urban areas;
- The water tariffs staggered with a low-subsidized unit price for low consumption (up to $5m^3$ / month / connection) and a higher unit price for higher consumption levels;
- The same price applies throughout rural Botswana, irrespective of the costs of water supply in a particular village.

The situation in Kgalagadi North indicates there has been modest increase in aggregate water consumption, 69% in the lowest block, between the period 1993-1997 with price increases. In contrast, consumption by large water consumers has increased by 538% within the same period. These large consumers do not seem to be responsive to price increases as water bills for public services are centrally paid and the costs of commercial companies are passed on through the prices of goods and construction projects. On the other hand the fact that small consumers do no increase their water consumption may be that they evade the high water bills through abuse of standpipes especially for activities such as watering livestock, gardens and construction activities. The dual water right which provides free standpipe water offers the opportunity for individual users to avoid paying for water at all. This may go against the water conservation policy effect intended with the water prices and the block tariffs.

The national policy also considers Government's social obligation to those who cannot afford the water prices by setting a low tariff at the minimum household requirements. The tariff aims at 33% recovery of the operating costs in smaller villages. In spite of these, cost recovery in the villages has not been achieved. This is attributed to poor billing and revenue collection as well as a small consumer base for the block tariffs to be effective. To halt the above situation the Department of Water Affairs upgraded the billing system in areas of their jurisdiction. This was aimed at improving the revenue collection and better accounting for water usage (Arntzen, J.; Masike, S. and Kgathi, L. *Water values, prices and water management in Botswana*, 2000).

7.4.2 Burkina Faso

The national water policy of 1998 long term objective is Integrated Water Resources Management according to the principles adopted in Dublin (water as an economic good) and Rio. The policy follows 9 key principles which, among others, include social equity and polluter pays principles. The priority of water allocation is given to drinking water and for other uses; priorities will be defined taking into account local conditions.

The policy mentions that all the costs of building infrastructures should be recovered as much as possible and recurrent costs should be covered 100% by the beneficiaries. Users should pay between 5-20% of capital costs depending on the technology.

7.4.3 Ethiopia

The water supply and sewerage development plan recognises water as an economic good and indicates moving towards full cost recovery in urban schemes and recover operation and maintenance costs in rural schemes.

In 1992, the Ethiopian Social Rehabilitation and Development Fund (ESRDF) was set up and was the major source of financing for community-based total water supply. Investments averaged US$ 10 million per year. However, studies done in the last 5 years report that a third to a half of water schemes in rural areas are not functional. This ESRD fund will be closed and a new Water Resources Development Fund (WRDF) will take over, focusing more on urban areas.

The minimum community cash contributions for capital costs has been suggested to be 5%, but data from 2001-2 shows that contributions from communities for capital investments have averaged 2% and user charges have covered 64.3% of total recurrent costs.

7.4.4 Ghana

Unlike before 1994, when water management was centralized and supply driven, the current policy for water supply and sanitation in Ghana is based on a system where local governments and communities plan together the desired systems, communities operate and maintain their own water services and the private sector is active in providing goods and services such as drilling, construction of systems and training of user groups.

During the period characterized by the centralized management system, the parastatal agency was biased towards urban water supply. Revenue collection from rural users was very low. The government of Ghana then regarded water as a social good hence the reluctance to impose cost recovery on consumers. In contrast, it could not raise the capital for construction or to cover the operating costs required. Table 7.2 shows the new arrangement for cost sharing with communities under the National Community Water Supply and Sanitation Programme

Table :7.2: Cost sharing with communities in Ghana

Item	% Community Contribution
Capital cost for water supply	5%
Operation and maintenance	100%
Individual household connections	100%
Household toilets	100%

Source: Acheampong, K., *Scaled up community ownership and management in Ghana*. Unpublished document, 2005

For the capital costs, the government/donor and the District Authority provide 90% and 5% respectively. The funds are raised differently from community to community. They include: per capita labour contribution of people above 17 years old, water vending, levies per household, sale of farm produce, kilo-kilo (kilogram(s) per adult person or household), contributions of cash crops such as cocoa and some food crops such as maize and vegetables. They can also include the sale of communal properties, often land and communal productive ventures. In

some instances the higher income individuals make volunteer contributions for the communities' capital contributions.

The 5% percent community contribution is intended to promote a sense of community ownership, but it is believed that this policy may discriminate against the poorest so communities and local governments find ways to circumvent the policy if the poorest people are to be saved. This is often implemented through a community-managed cross subsidy, whereby the poor are identified and are exempted from paying.

For operation and maintenance in Ghana, each community fixes their own tariff based on Guidelines circulated from the CWSA - Community Water and Sanitation Agency - through local governments. The decisions of the communities are endorsed by the water and sanitation development boards of each community and approved by the local government.

7.4.5 Lesotho

The Lesotho national sanitation infrastructure is estimated to be over 20 years old. It is a permanent and budgeted part of the government's work and independent of external support agencies. Concerning financing, there are no direct subsidies for building individual household latrines. Households employ private sector latrine builders and the government does the promotion and trains the builders. The programme is believed to have been successful in addressing sanitation holistically both in rural and urban areas. Rural sanitation is believed to have increased significantly and exceed the MDG targets. The constraint is how to target the poorest and solving the problem of emptying the full pit latrines. The key elements of the rural sanitation programme are:

- Proper institutional arrangements at the national, district and local level - communities are involved in planning and management;
- Insistence on full cost recovery from users - no subsidies from government on the cost of latrines;
- Promotion by the government of using the small-scale private sector to build latrines. It also trained the builders;
- Adoption and adaptation of technology suitable to local conditions, construction techniques and preferences;
- Promotion of sanitation through the use of the media (radio mainly) and training of sector professionals.

It is estimated that the cost of latrines in rural areas is approximately equivalent to one month's salary, but this could be lowered by using locally available materials for building. Users are also responsible for 100% operation and maintenance costs of the facilities, but the government subsidizes emptying the pit.

7.4.6 Kenya

The Kenya Finland Western Water Supply Programme was co-financed by the governments of Kenya and Finland. As a departure from the supply driven approach, the phase which started in 1993 was based on demand driven approach. Under this new approach beneficiaries were supposed to be willing and prepared to take over the responsibility for managing the projects and paying for construction, operations and maintenance costs.

The programme prepared promotional materials in the form of modules to facilitate the knowledge of the communities towards water supply development and sustainability. Among the 8 modules were the following:

- demand driven approach in water development which covers policy issues governing water supply development and how various development partners relate to one another
- self management support which presents back-up support systems for sustaining water projects on a self-help basis

Before the implementation of the projects, communities were among other things supposed to form and register the management committee, open a bank account and proceed with land clearing. Cost estimates were prepared and the beneficiaries were invoiced before the commencement of construction works. During the implementation, communities provided labour and materials which were quantified and deducted from their required monetary contributions. The private sector, comprising profit making organizations, businessmen, insurance companies, contractors etc., were to advance loans and credit to communities in need of such services.

The community contributions for the implementation and training costs under the cost sharing arrangement are shown in Table 7.3. The minimum cash contribution is 2% of the total implementation costs. The remaining share was either paid by providing materials or labour. It is reported that approximately 37% of the community contribution had been paid in cash, 44% in materials and 19% in labour.

Table 7.3: Contribution from users for water supply services in Kenya (2007 update)

Facility	Contribution from users
Community water point	25%
Community water point (potable water already closer than 50m)	50%
Institutions (Schools, Health centres, etc)	75%
Private	100%
Community piped water supplies	30%

Of the 980 applications received in 1994, 631 field investigations were done. Of all the facilities visited, 254 paid their invoices, of which 225 were community water points, 10 institutions and 19 private. It was learnt that the demand driven approach helped communities to understand technical, financial, institutional and organizational implications of water supply systems. Shortcomings in the implementation included:

- difficulties with communities understanding the importance of collecting funds for future maintenance;
- expensive and scarce spare parts for installed pumps;
- drastic decrease in the number of applications when the Programme stopped the subsidy.

7.4.7 Mozambique

In piloting the Government's new National Water Policy and Implementation Manual, the Department of Water and Sanitation selected Maua District. The new policy recognizes water has economic and social value and communities need to make upfront payments which would also enhance the sense of community ownership. The policy also recognizes that many of the people are poor and hence in this sense the draft implementation guidelines states that the

maximum rural communities would be asked to contribute is 2% of the average cost of the water point. Communities are responsible for 100% operation, maintenance and replacement of these systems.

In line with the government policies, communities were given a range of options for making capital contributions. Within the pilot province, communities were allowed to pay in kind instead of cash. Rather than contributing labour as in the past, communities preferred paying in the form of sacks of maize. It was learnt from responses to surveys that the 2% contribution was affordable to the communities as all the communities paid their capital cost contribution and in addition assumed ownership of the facilities.

However, ability to contribute to capital costs does not mean that communities can subsequently meet the operation and maintenance cost of their water facilities. Whilst the people had little problem contributing agricultural products to improved water sources, there were problems for acquiring spare parts. It was learnt that converting crops to cash in the province is not easy to do and in order to buy spare parts they might have to travel about 140km, which is very expensive. Spare parts dealers are not willing to exchange spares for agricultural products. In addition, it was learnt that private vendors had little/ no interest in selling spare parts because they knew that the market was not interesting enough.

Choice of technologies given to the communities was carried out in a way that allowed communities to avoid hard sustainability issues. The technology choice was not linked to a meaningful and realistic cost contribution. Communities selected hand pumps because the capital cost was low, but costs did not reflect what it would really cost to sustain the hand pumps in the future.

For sanitation, during the 1995-2000 Master Plan for Low Cost Sanitation, there were two kinds of subsidies provided by the government. For the population with incomes below the poverty line, 100% of the total cost was subsidized. The second form of subsidy was 50% of the cost for the population in general. It became necessary to review ‘’who should pay more and who should pay less” in view of the new economic changes in the country.

7.4.8 Namibia

The National Water and Sanitation Policy of 1993 has the following broad sectoral objectives;

- Essential water supply and sanitation should become available to all Namibians and should be accessible at a cost which is affordable to the country as a whole;
- This equitable improvement should be achieved by the combined efforts of the government and the beneficiaries, based on community involvement, community participation and acceptance of mutual responsibility;
- Communities should have the right, with due regard for environmental needs and the resources available, to determine which solution and service levels are acceptable to them. Beneficiaries should contribute towards cost of services at increasing rates for standards of living exceeding the levels required for providing basic needs.

In the context of the above sectoral objectives, the Directorate of Rural Water Supply (DRWS) is tasked to supply clean water to the communal areas of Namibia. The policy aims at achieving cost recovery through community based management. This is clearly stated among the targets of DWRS which also describe the policies and the objectives of the directorate as follows;

Community based management of all water points has been chosen as the strategy for achieving the targets in a sustainable manner. By the year 2007 DRWS aims to have all water points under decentralized control of local communities. It is in this way that cost recovery of rural water supply, as stipulated in the Water and Sanitation Policy of 1993 will be achieved.

7.4.9 Nigeria

Nigeria's National Water Supply and Sanitation Policy has recently been adopted. The policy makes water supply and sanitation a right to all Nigerians but it also recognizes water as an economic good and calls for the running of water supplies as businesses. It also recognizes the specific needs of women and the poor and thus recommends "free" water for the poor. This is seen to make the policy inconsistent. The principles underlying the current policy for rural water supply are that communities must:

- Choose the level of service that they are willing and able to pay for and make their own rules as to the use of water;
- Take full responsibility for all aspects of maintenance and operation of their water systems;
- Pay the full price for maintenance and operation of their water supply systems and a part of the capital costs which is 5%

The policy is silent on cost recovery strategy for sanitation. In implementing the policy, the programme intends to first invest in States which are sufficiently well developed to make rapid progress, while others are brought gradually (but urgently) up to the same level. There are two considerations for implementation:

- Available resources are spent as cost effective as possible; and
- Resources are devoted to the highest priority among investment alternatives. This is based on the belief that the more money can be mobilized and the better it is spent and recovered, the faster the improvement will come and the sooner adequate service will be achieved.

However, there is the possibility of paying less attention to the very poor with limited resources.

7.4.10 Senegal

Currently, in Senegal, government and users share the operating and maintenance cost of water supply. Government is responsible for meeting expenses related to the renewal of boreholes, reservoirs or water towers and mains. The users are responsible for meeting the costs of fuel and lubricants, staff, maintenance and overhaul and repair of equipment, renewal of pumping systems, lateral mains and distribution points.

The main tariff systems for recovering costs are the fixed subscription used by 49% of boreholes and the sale of water by volume (51% of boreholes). The fixed subscription is the means used in areas where there are no meters or the meters have broken down. The sale per volume uses 25-liter containers. The price per container of water from 80% of the boreholes is CFAF 5 (that is CFAF 200/m^3).

A part of the tariff for consumers in urban areas is a water surcharge of CFAF 1.95/m^3 paid as a solidarity tax for the rural communities and this amount is paid to the National Water Fund (FNH).

In line with the Millennium Water and Sanitation Programme (PEPAM), the rural water and sanitation programme to be launched in June 2006 has the cost contribution requirement from users shown in Table 7.4.

Table 7.4: User contributions

Facility	User Contributions	
	Initial investment cost	O&M
Community water infrastructure	3%	100%
Community latrines	0%	?
Household latrines	10%	100%

Households can contribute in kind through participation in the construction of the facilities in order to minimize their cash contribution. Beneficiaries of community water facilities are required to mobilize this amount prior to the construction of the facilities.

Cost recovery will be done through sale of water to users by volume through volumetric meters installed on all public and private distribution structures for both human and animal consumption. Standpipe operators will be responsible for collecting money that corresponds to the volume of water fetched. The tariff to be established is supposed to take into account the full costs of production of water and renewal of equipment.

7.4.11 South Africa

The South African national water and sanitation programme is based on the human right to water and sanitation and these were enshrined in the constitution in 1996. The national programme has a clear policy and legislative framework, and implementation programme. The policy is clear on providing free basic water for all which aimed at ensuring that low affordability does not prevent access to water. The implementation is also being enhanced by the devolution of responsibility form the national to local government. However, there is concern about the capacity of local government for implementation of water and sanitation services and as well as the financial sustainability of free basic water.

Until 1994, there were no coherent national policies and toolkits or support structures for water supply and sanitation. Whilst the white-ruled areas offered water and sanitation services with standards similar to those in developed countries, black-occupied rural areas were often with no services. The situation in the black urban areas was however mixed. After the apartheid regime, the new government tasked the Department of Water Affairs and Forestry (DWAF) with the responsibility of ensuring that All South Africans have equitable access to water supply and sanitation. DWAF produced a policy on community water and sanitation in 1994 after consultation of a range of stakeholders. This policy provided the foundation for the legislative and regulatory framework, which was later enacted with the Water Services Act in 1997.

It is estimated that the average cost of providing water per person is $90, which is regarded as high for rural water supply. This is due to high engineering-driven design standards, technologies that might be difficult for local governments to maintain and too expensive for users to fund. The constitution also states that water must be available within every 200m of every person's house, which implies high costs for reaching scattered rural populations.

The South Africa government provides 100% of capital costs for both water and sanitation. For operation and maintenance the basic level of water of 25 liters per person per day is free, but higher levels of service should be paid for by the users. The operation and maintenance of the free basic water is paid by a subsidy from the national budget. In spite of this, there is evidence of many users who are failing to pay for the higher levels of service and thus leaving the operation and maintenance costs wholly on national subsidy. Mvula Trust estimates that just about 10-20% pay for the higher tariff to achieve the full operation and maintenance which goes beyond the free basic water.

7.4.12 Uganda

The reform for water and sanitation in Uganda began in 1998 and led to the development of the National Water Policy (NWP) in 1999. The reform aimed at ensuring that water supply and sanitation services were provided with increased performance and cost effectiveness. The reformed process was to strengthen the regulatory framework and provide the basis for cost recovery. The NWP stipulates that users should contribute to 2-5% of the capital cost and 100% of the operation and maintenance costs. The central and local governments are to offer support for rehabilitation and major repairs of water facilities.

For small towns, whilst ownership for the systems remains with the local government, the service delivery is to be contracted out to local service water and sanitation authorities or local private sector. An independent institution was to be set up for regulating private sector participation. All except one of the eight small towns that have been operating under management contracts since mid 2001 are approaching full cost recovery for operation and maintenance.

According to the national policy, individual households are responsible for raising 100% capital costs for household latrines with no subsidy from government. The sanitation component of the rural water supply and sanitation investment plan only covers provision of communal public latrines, sanitation promotion and support to district programmes. Like for other African countries, the World Health Organisation Assessment in 2000 identified the lack of adequate cost recovery frameworks as one of the limitations of the sector.

7.4.13 Zambia

The water and sanitation policy was prepared by the Ministry of Local Government and Housing and the Ministry of Energy and Water Resources. Whilst the policy recognizes cost sharing and recovery, there is no clear implementation strategy in that regard.

According to the policy, “Sustainability is assured using a cost recovery approach to the provision of water by encouraging user communities to contribute towards the investment cost of the water and sanitation schemes, in cash or in kind as may be agreed with the community concerned and to establish a revenue collection mechanism as contribution towards operation and maintenance (O&M) of the water scheme”.

7.4.14 Zimbabwe

The Integrated Rural Water Supply and Sanitation Programme (IRWSSP) which was initiated in 1985 was aimed at providing the entire population of Zimbabwe’s communal and resettlement areas with access to safe and adequate water and sanitation by the year 2005.

Initially, the national programme was hesitant in funding household-owned water facilities like the family wells. However with the failure of the centralized operation and maintenance system, the inability of the communities to maintain community water points leading to the frequent breakdown of boreholes and other communal facilities, the productive benefits and the financial sustenance of the family wells, the national programme considered household-owned family wells as one of the subsidized technologies for rural water supply. See Table 7.5 for user contribution for water supply and sanitation facilities.

Table 10.5 Funding capital investment costs of water supply and sanitation facilities

Facility	% User Contribution	% Subsidy from Programme/ Government
Family Well	70	30
Deep Well	10	90
Borehole	10	90
Shallow Well	10	90
Blair Latrine	70	90

The 1985 National Management Plan for the IRWSSP stipulated centralized operation and maintenance. Government was wholly responsible for recurrent expenditure in order to increase sustainability. This system popularly known as the three tier maintenance system became less effective as the number of water facilities grew and government allocation dwindled.

During the period, O&M costs for communal water facilities were funded by government whilst households were responsible for the 100% operation and maintenance of family wells and Blair Latrines. The adoption of the Community Based Management in 1999 leaves users responsible for meeting 100% of O&M cost of all facilities. The inability of users to raise enough funds due to the current negative effects of the economic crises of the country, and the lack of skills for O&M for pump maintenance has resulted in the breakdown of greater number of communal water points.

7.5 Main conclusions from country cases

Table 7.6 summarises the required contributions from users in selected African countries in 2007. Key conclusions are described below.

Table 7.6: Summary of rural cost recovery: required user contributions (2007)ountries (2007 update)

Country	Rural water supply Required user contributions			Rural sanitation Required user contribution		
	Capital investment	O&M	Capital maintenance	Capital investment	O&M	Capital maintenance
Botswana	0%	33-100% for household connection 0% for public standpipes				
Burkina Faso	5-20%	100%		100%	100%	100%
Ethiopia	5%	100%		100%	100%	100%
Ghana	5%	100%		100%	100%	100%
Lesotho				100%	100%	100%
Kenya	25%-100%	100%				
Mozambique	2%	100%		0% and 50% based on level of poverty	100%	
Namibia						
Nigeria	5%	100%				
Senegal	3%	100%	100%	0 % for communal facilities and 10% for household facilities	100%	
South Africa		Only paid when consumption is above the basic of 25 litter/person/ day				
Uganda	2-5%	100%		100%	100%	100%
Zimbabwe	10% for community owned facilities and 70% for family wells	100%		70%	100%	

7.5.1 Community contributions to capital investment

In countries such as Ghana, Mozambique, Kenya, Uganda, and Zimbabwe, beneficiary communities are required to make contributions to capital investment in water facilities. This often ranges from 2-10% of the total asset costs. The exceptional case is Kenya where beneficiary communities contribute up to 50% to capital investment costs in community water points. User contributions for household-owned facilities are comparatively higher, e.g. household latrines (usually 100%) and wells. Whilst the low percentages for community contributions are pegged taking recognition of the poor, it seems that contributions are set arbitrarily.

7.5.2 Community contributions to operation and maintenance

In most of the national programmes and policies, beneficiaries are tasked with paying 100% of the operation and maintenance costs of water supply systems or services. For water supply systems communities often devise the means of raising the money. For individual household piped connections, this amount is realized through the tariffs set by external bodies like the District Councils, the Water Company, etc. In Botswana O&M is further subsidized with low price for low consumption and high price for consumption above $5m^3$ per month. The cost recovery strategy aims at recovering 33% of the O&M costs from users from smaller villages.

It is unrealistic to expect that contributions to capital investment costs can be used as an indicator that communities can afford to financially sustain the system over the years. A typical example is the case in Mozambique. It was realized that communities find it easier to contribute in kind than in cash for capital costs, but it becomes difficult when payments in cash are required to ensure the maintenance of the service, as spare parts dealers and mechanics are unwilling to accept agricultural produce in exchange for spares. This is especially the case in rural communities where it is difficult to deal agricultural produce.

7.5.3 Capital maintenance expenditure (renewal and replacement)

None of the cost recovery strategies in national policies and programmes take into consideration the renewal, replacement or rehabilitation costs of the fixed assets. Sometimes the prices and tariffs for O&M cover a reserve fund for unexpected breaks in the system.

7.5.4 Less attention to cost recovery strategies in sanitation

Most of the policies seem silent on recovering costs for sanitation investments, whilst those which recognize sanitation pay less attention to it as compared to water. Most of the programmes and policies promote household latrines and often require households to be responsible for 100% of capital costs and operation and maintenance. Subsidies do exist in these programmes, but often for promotional and training activities. Capital maintenance for on-site sanitation such as pit latrine emptying is also the responsibility of households although in urban slums there might be public health reasons for public authorities to look into this issue.

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9 ANNEXES - NON-NETWORKED AND/OR RURAL WATER SUPPLY AND SANITATION

Annex - Factors influencing willingness to pay

Communities differ within regions and within themselves. Nevertheless, there are common factors determining willingness to pay, as literature and field studies have pointed out. These can be classified into two main categories: community factors and service factors.

Community factors linked to an attitude or a characteristic of the community:

- demand and participation of communities;
- prevailing local customs and legislation;
- perceived benefits derived from improved services;
- levels of income.

Maximising willingness to pay means ensuring that these factors contribute positively to a community's attitude and capacity.

Demand and participation of communities

A project initiated because of community demand and in which the community has been involved right from the start, can contribute to a greater WTP. It increases the feeling of ownership and responsibility of communities as well as their commitment towards a financially sustainable service. There is a tendency to ask communities to contribute to the initial investment, in cash or in kind, without which a project would not start. This payment in cash or in kind is considered as a willingness to pay. However, it does not guarantee that WTP will be permanent, as sustainability depends also on many other factors such as the possibility to raise money with which to pay a local mechanic.

Prevailing local customs and legislation

Water is often considered a gift of God, and post-independence policies often promoted the provision of water free of charge to rural areas. However, it can be argued that it is not water that has to be paid for, but water services. It should be noted that many communities and their leaders are well aware of the dilemma, and use local customs and traditional law to address this issue.

Perceived benefits derived from improved service

Where users perceive that new facilities provide a level of service higher than the existing level, they will be more inclined to pay. This is particularly the case if they are not satisfied with their present level of service. It is, however, important to realise that agencies and communities may not share the same perception of benefits. Similarly, differences may exist within communities and between different community groups. The perceived benefits can be the following:

- Convenience can be perceived in terms of easy access and a short distance between a water point and the household, but also applies to the comfort and ease of using and operating the new water supply system. Decreasing the physical burden of walking long distances carrying water is likely to influence WTP.
- Social status can strongly motivate people to upgrade their service to a level which corresponds better to their way of living and their pattern of consumption.

- Health is a motivator. A strong awareness of the potential health risks of using traditional sources is a proven factor in motivating people to pay for an improved service.
- Quantity of water is a factor when it is available in a continuous and reliable manner (with appropriate yield or pressure) and not subject to seasonal variations.
- Opportunity costs of time are a factor, in terms of the value that users attach to the time they spend in collecting water, in comparison to other activities.
- Potential of income-generating activities. Water use can be linked to productive activities such as garden irrigation and livestock watering.

Level of income

Communities with low incomes and a low ability to pay are less willing to pay for improved water supply service because they need their financial resources for other basic needs such as food, health care, education and shelter. However, various studies have shown that the correlation between ability to pay and willingness to pay is not always clear-cut. It is not unusual to find that local government and other public offices, agencies and influential individuals do not pay their water bills.

Service factors are linked to the nature and characteristic of the water supply system and can be subdivided as follows:

- alternative sources of water supply;
- costs of an improved water supply system;
- management efficiency of the service.

Maximising willingness to pay in this case will consist of assessing how each factor could positively or negatively affect willingness to pay.

Presence of alternative sources of water supply

If an existing traditional water supply, such as a well or surface water, is more convenient and free of charge, WTP for new systems could be affected. It is advisable to assess the use and acceptance of existing water supply systems before planning improved ones.

Costs of an improved water supply system

Costs are always a concern for rural and low-income urban communities. Certain costs like operation and maintenance costs, or costs of spare parts, are directly observable and generally accepted if benefits are visible and constant. However, the benefits of paying off capital cost debts and replacement costs are not immediately observable. Communities also often do not understand why they still have to pay for water, when they see significant amounts are being saved for the future in a bank account. The more these costs influence the total tariff, the higher their potential to create resistance to pay.

Management efficiency of the service

WTP may be high at the beginning of a project, but if there is poor management and the system is inadequately run and maintained, users may refuse to pay as a way of expressing their dissatisfaction and as a protest. Good accountancy and transparency are essential to create trust and confidence in a community-managed system. Communities should be informed on a regular basis about general expenditure, and should see the accounts at meetings. Service breakdowns need to be repaired rapidly, or, at the very least, users should be kept informed about what is going on.

Annex - Multiple uses of water

What is a multiple use approach?

A multiple use approach involves:
1. Assessing the range of water needs in collaboration with end users;
2. Examining the water sources available – from rainwater to wastewater to piped systems; and
3. Matching water supplies to needs based on quantity, quality and reliability required for various purposes.

Widespread advocacy of demand-responsive approaches within the WATSAN sector should lead to the voice of productive users of domestic water becoming more generally heard and recognised (example box 1). For example, South Africa's recent draft white paper explicitly recognises these needs (example box 2).

Box 1: Some productive uses of household water supplies

Cultivation: vegetables, fruit trees
Livestock: poultry, goats and sheep, stall-fed cattle
Agro-processing
Handicraft
Brick making, building and construction
Services: hair salons, tea shops

Box 2: Policy recognising productive water uses

In the recent draft white paper on water services in South Africa, economic activities are explicitly recognised: *"Municipalities do not, and should not, only provide water services necessary for basic health and hygiene. It is important that municipalities undertake health education, facilitate the provision of higher levels of services for domestic users and provide services which support the economic development and well-being of communities."*

Direct and indirect impacts

Improved water supplies lead to both direct and indirect opportunities for improved productivity. More water, of better quality and provided more reliably, can provide the water needed for productive activities like irrigation of a backyard or community vegetable garden or for micro-enterprises like hair salons or tea shops. These direct benefits are what most of the experiences identified in these Guidelines seek to capture. But indirect gains may be even more important in that they can apply to both water-based and non-water-based activities. Time and money that are saved can be invested in activities that bring positive returns to capital or labour.

An intriguing and important study in Gujarat, India (James et al. 1992)[9], showed how significant improvements in incomes were achieved when an improved water supply that saved women's

James, A.J. et al. (1992). "Transforming time into money using water : a participatory study of economics and gender in rural India"'. In: Natural Resources Forum, 26, Pp. 205-217.

time was combined with promotion of handicraft-based rural enterprises. These enterprises did not significantly depend upon making productive use of domestic water but the better supply enhanced productivity through time savings. This project illustrates the utility benefit of water but the important message is that just providing the utility was on its own less effective than doing so in conjunction with a programme that supported the women in making use of the time saved. It demonstrates a livelihoods-based approach that realised that time and timely access to other key assets is a prerequisite to making money. In order to maximise the benefits of the improved water supply it was necessary to address constraints associated with these other assets.

Demand management and cost recovery

Productive use of domestic water may not always be positive or desirable. An example is the irrigation of low value crops like cassava on some relatively large plots (up to an acre) around houses in villages and towns in the Nkomati area of South Africa, close to the Mozambique border. While it does provide food for some relatively poor families, it does not produce that much income compared to the cost of piped water supplies. This additional demand causes problems for domestic water users at the tail end of the system and in the higher parts of the towns.

Clearly there are limits to what is desirable. Demand for water for productive uses needs to be managed and the uses themselves must be assessed. The following example illustrates a situation where demand needs to be managed: "The water committee in Belén, Guatemala, faces multiple simultaneous problems… The population grows as people migrate into the area due to the violence in the country. New taps are connected without taking into account the capacity of the source. In addition, more and more water from the system is being used for productive purposes such as watering cattle and coffee production."

What uses should be prioritised? And when is productive use of water at the household level one of the priorities? Clearly higher value uses that produce the greatest economic benefits are to be preferred. But the distribution of benefits is also important. On social grounds the beneficial use of water by poor people, who may not be served by other systems and for whom any diversification of livelihoods is critical, should be encouraged.

By explicitly recognising that productive uses are inevitable, it is possible to take account of them structurally and to include them in demand management strategies. The most obvious measure to manage demand (and to finance investment in better services) is charging for water. In South Africa the recent draft water policy proposes that productive activities should utilise water services on a full cost recovery basis while water for basic domestic needs (up to the equivalent of roughly 25 l/p/d) is free.

In practice it is likely to be very difficult in some circumstances to charge for water used for informal home-based activities, especially where cost recovery systems are not already in place for domestic water. By their very nature these activities may be occasional, irregular, or seasonal. Enterprises with their own premises and operating formally and more regularly can be much more easily charged for water. There is a strong case, therefore, on both equity and practical grounds, for tariff-based subsidies to facilitate productive water use by the poor – and the South African policy recognises this.

Ways of accommodating multiple uses of water

Irrigation systems can be adapted by[10]:
• Releasing water for household uses and bathing • Building or reviving community domestic-supply reservoirs • Building steps in canal banks for laundry and bathing • Adding pipes, canals and taps to bring water into villages/houses • Promoting low-cost, point-of-use treatment for drinking water • Sinking shallow wells to tap cleaner 'seepage ' water • Adding access and crossing points to canals for cattle • Maintaining flows to preserve fish populations • Building fish friendly structures in sluices and canals
Domestic systems can be adapted by:
• Increasing pipe diameters/water discharge to allow productive activities • Providing water without interruptions • Adding cattle troughs to supply points • Adding storage tanks • Adding micro-irrigation systems • Using different water sources depending on quality needs • Promoting reuse of household "grey" (waste) water
Use of other water sources can be maximised by:
• Working with the private sector to promote the use of affordable pumps and drip irrigation kits (also applies to domestic systems) • Promoting community/rooftop rainwater harvesting • Enlarging wells • Developing gravity/flow systems to pipe in stream-water • Promoting credit and access to other inputs to enable people to make use of productive water supplies (applies to all)

More resources and discussions on this topic are available at the productive uses thematic group website http://www.prodwat.watsan.net/

Annex - Technology choice

Communities and local authorities and/or the private sector should be made aware of the financial implications of operating, maintaining, managing, rehabilitating and replacing a given technology. Hence, during technology choice priority should not necessarily be given to systematically minimizing investment costs, but also in analysing O&M costs that communities can afford and are willing to pay.

Communities should also be made aware about ways to optimize or minimize costs related with the technology used such as:

→ Economies of scale;
→ Reduction of dependence on energy and chemicals;
→ Monitoring changes in fixed and variable costs;
→ Improving preventive maintenance and therefore fostering a "maintenance culture" within a community;
→ Installing a systematic leakage control system;

→ Developing an effective financial control mechanism.

Locally-based supply chains can help to keep the cost of spare parts and other supplies – and therefore maintenance – at affordable levels, while at the same time providing employment opportunities within communities.

If capacity building activities are too complex to organize for a given technology, it may well be necessary to consider another technology that will require less management skills. Appropriate financial management capacity and skills are necessary to run a service efficiently, and all aspects linked to bookkeeping, budget setting, billing, revenue collection, recording expenses/ revenues, monitoring, and applying sanctions have to be in place. An assessment of the management capacity of the community or local authority managing the system is therefore crucial.

The table below provides a list of criteria generally used in the process of choosing technology and highlights specific O&M criteria. The challenge for the planner will be to give proper financial weight to the O&M criteria, and to assess the ability and willingness of the consumers to pay these costs.

Experience shows that non-technical issues play a considerable role in determining the effectiveness of O&M. For this reason, those involved in O&M assessment and development should have skills in a range of relevant disciplines: social development, economics, health and management, as well as engineering. It is important that the process is consultative and carried out in partnership with the operators and users of schemes.

Factors influencing technology choice	Specific O&M criteria
Technical factors	
• Demand (present and future consumption patterns) versus supply • Capital maintenance costs • Extension capacity • Compatibility with norms and legal framework • Compatibility with existing water supply systems • Comparative advantages • Technical skills needed within or outside the community	• Dependence on fuel, power, chemicals • Quality and durability of materials • Availability/cost of spare parts and raw material • Operation and maintenance requirements • Compatibility with the expectations and preferences of male and female users • Availability of trained personnel within the community • Availability of mechanics, plumbers, carpenters, masons in or outside the community • Potential for local manufacturing • Potential for standardisation
Environmental factors	
• Availability, accessibility and reliability of water sources (springs, groundwater, rainwater, surface water, streams, lakes and ponds) • Seasonal variations • Water quality and treatment needed • Water source protection	• Cost implications of water treatment • Cost implications of water source protection and wastewater drainage • Existence and use of alternative traditional water sources • Wastewater drainage
Institutional factors	
• Legal framework • National strategy • Existing institutional set-up • Support from government, Non-Government Organisations, External Support Agencies • Stimulation of private sector • Transferring know-how	• Roles of different stakeholders and ability/willingness to take responsibilities (O&M system) • Availability of local artisans • Potential involvement of private sector • Training and follow-up • Availability and capacity of training • Skills requirement • Monitoring
Community and managerial factors	
• Local economy • Living patterns and population growth • Living standards and gender balance • Household income and seasonal variations • Users' preferences • Historical experience in collaborating with different partners • Village organisation and social cohesion	• Managerial capacity and need for training • Capacity of organisation • Acceptance of committee by the community • Gender balance in committee • Perception of benefits from improved water supply • Felt need • Availability of technical skills • Ownership
Financial factors	
• Capital maintenance costs • Operation costs • Budget allocations and subsidy policy • Financial and in-kind participation of users • Local economy	• Ability and willingness to pay • Level of recurrent costs • Level of costs to be met by the community • Costs of spare parts and their accessibility • Payment and cost recovery system to be put in place • Financial management capacity (bookkeeping, etc.) of the community

Restoring defective schemes (rehabilitation) can provide an economic alternative to investment in new projects, but that decision should not be automatic. Just as with a new scheme, the rehabilitation option has to be evaluated by balancing community needs, preferences and capacity to sustain the project, with the potential for support by the water agency. In assessing

scope for rehabilitation, the community and the agency need to review together what made the system break down, analyse the problems and recommend feasible technologies. Furthermore, rehabilitation should not simply be a matter of replacing broken equipment or infrastructure. The most common cause of failure is organisational and management.

If a risk analysis is carried out for each water supply option, an attempt can be made to anticipate factors that may change and affect O&M. This will not be easy in unstable economies where inflation and the availability of imported equipment and spare parts are difficult to predict. A comparison of technologies can indicate the degree of risk attached to each option.

Recurrent costs vary widely from one project or country to another, in terms of what has been included in the calculations. Moreover, there are large differences in wage, equipment and material costs. The data is only valid for the context in which a particular project has been developed, but it can give an idea of the importance of these costs.

The overall budgeting provides a clear idea of the total amount of money that is going to be needed over a period of time (usually one year), but does not give information about the cash flow required over short periods of time (monthly). Estimates need to be made about how much money is going to be needed at what time.

Annex - Examples of operational and financial responsibilities

Financial responsibilities often match operational responsibilities. For example, a water committee may be responsible for keeping the water flowing and for meeting the costs. However, operational responsibilities may be delegated by the group or institution. Should that be the case, it needs to be clearly indicated who is accountable for what and whether the financial responsibility has also been delegated. For example, if a water committee, that is financially responsible for the upkeep of a tap delegates the operational responsibility to a mechanic and also delegates a certain budget to carry out this task, the mechanic has to account for the expenses on a regular basis.

This distinction between financial and operational responsibility can be made at the community level as well as at the level of support organisations. The tables below provide two examples on the distribution of responsibilities. When reading these tables it has to be taken into account that 'the community' is not a homogeneous group of people and that in the community responsibilities may lie with sub-groups.

EXAMPLE: DISTRIBUTION OF RESPONSIBILITIES FOR THE O&M OF A HANDPUMP	FINANCIAL RESPONSIBILITY	OPERATIONAL RESPONSIBILITY
• Monitor handpump use and encourage proper use • Check all nuts and bolts, and tighten if necessary • Measure output per stroke and compare with expected output • Check and adjust pump handle and stuffing box • Grease or oil all hinge pins, bearings, or sliding parts • Clean the pump, well head, concrete apron, and drainage area • Check well head, concrete apron, drainage area • Repair cracks • Record all operation and maintenance activities in notebook	🧍	🛠
• Disassemble pump, check drop pipe, cylinder, leathers and foot valve • Check corrosion and wear • Repair or replace if necessary	🧍	🧍 or 🛠
• Conduct water test for micro-biological contamination • Conduct water level check and test well yield	🏛	🏛
• In case of contamination, locate and correct source of contamination, and disinfect • Adjust cylinder setting if necessary • Reconditioning or replacement of hand pump when fully worn	🧍 or 🏛	🛠 or 🏛
• Manage a stock of spare parts, tools and supplies	🧍 or 🛠 or 🏛	

🧍 Community or a designated person/group of persons in the community

🛠 Local mechanic / private sector

🏛 Government

EXAMPLE: DISTRIBUTION OF ADMINISTRATIVE RESPONSIBILITIES AND SUPPORT ACTIVITIES	OPERATIONAL RESPONSIBILITY	FINANCIAL RESPONSIBILITY
• Conduct technical and socio-economic participatory studies	🏛	🚹 or 🏛*
• Prepare annual budgets and long-term financial estimates • Analyse O&M tasks for use in planning and budgeting • Collect, analyse, monitoring results, and conduct follow-up support or training if necessary	🚹 or 🏛*	🚹 or 🏛*
• Develop and evaluate technical & management training for water system operators • Develop and evaluate financial & management training for community managers; provide ongoing technical training for operators • Provide ongoing financial and management training for community managers • Develop information and materials on hygiene education • Provide technical and management support to community managers	🏛*	🏛*
• Select and appoint operators/contractors for O&M • Delegate task responsibilities, supervise and pay salaries • Keep archives, inventories and log books • Collect water fees and manage revenues • Make payments for purchases, loans and other obligations • Respond to users' complaints • Organise and conduct general meetings for discussions, elections • Organise community contributions for upgrading or extending the system • Report urgent problems to government agency	🚹	🚹

🚹 Community or a designated person/group of persons in the community

🛠 Local mechanic / private sector

🏛 Government

🏛* Government and/or Non Governmental Organisations

To reach agreement on financial and operational responsibilities you may promote workshops with different stakeholders at which commitments are publicly demonstrated. Here are some steps that can be taken to make responsibilities clear for all stakeholders:

- conduct technical and socio-economic participatory studies to identify/clarify existing responsibilities;
- get together all the stakeholders and discuss all the options;
- prepare annual budgets and long-term financial estimates, and discuss them with all the stakeholders;
- provide training and other capacity building activities if necessary;
- collect, analyse, monitor results and conduct follow-up support or training if necessary;
- ensure that all groups in a community have a choice and a voice in the process of assigning responsibilities.

Annex - Transparency and financial management

Transparency makes people feel at ease with the costs they are being asked to pay for their water supply. Suspicion can arise if community members do not know what is decided, why certain decisions are taken and how their financial contribution is used. Even if lack of transparency is not intended, people may decide to stop paying their financial contributions.

Financial management and transparency are among the more problematic aspects of community management. Some of the more common problems are:

- influential individuals are placed in positions of financial responsibility and run the project without accounting for their actions to the community;
- conflict arises when individuals or groups wish to gain access to the funds by using their influence and power in the community;
- members of the committee who are trained in financial control, might leave the community once they have gained the skills to pursue a more attractive livelihood elsewhere;
- lack of clarity about how money is spent.

A water committee needs a clear structure, policy and control system to ensure that funds are correctly used and accounted for. It must also have a clear understanding of what expenditures may take place, what costs will be necessary to pay and when payments are required. Helping the committee to draw up a budget will help it to focus on these issues. Once a budget is in place, the water committee needs to keep record of all funds moving into and out of the water committee. Basic bookkeeping techniques, using a cash book and receipt book can be used to record and monitor financial information.

A ***cash book*** shows all the transactions and the balance at the end of the day. It contains two columns: one for income and another for expenditure. It includes coins, notes, cheques, money deposited into the bank, etc. At the end of the month, if there is a bank account, then the cash book has to be compared with the account statement from the bank. A ***receipt book*** carries the receipts that show that a community has paid for particular goods or services. Receipts are numbered and made out in duplicate, with one copy for the payer and one for the treasurer. In this book a record of all income is kept. A register of ratepayers is kept with columns for each month. The number of the receipt is entered under the appropriate month after payment was made.

Keeping track of where money is going is an essential part of ensuring that it is being used properly and that future needs for funds can be planned. This will allow actual expenditure and income to be compared with what is stated in the budget. This will also help to identify financial problems quickly. Transparency is about sharing this information by submitting financial reports to the community and allowing community members to ask questions about the figures and how the budget is to be used. Organising community meetings at certain intervals is a means to report on income and expenditures over the reporting period. Popular theatre can be used to discuss sensitive issues such as transparency.

For continued transparency on income and expenditure, bookkeeping and accounting are essential. In some communities there may be a lot of experience with keeping accounts, for example because there are people running a business. Managing a water account may not be a problem for them. However, in the case of communities with little or no experience you may need to arrange for specific training. Training should provide tools to enable the water committee to keep books properly, to ensure transparency for creating trust and confidence in the water committee. Such training may include issues such as tariff setting, users registration, account keeping, auditing. Continued transparency may also be guaranteed through a regular audit by an external agency or a small committee composed of community members who are not part of the water committee.

Annex - Example of monitoring indicators

The most important thing to remember is that in data collection it is better to be almost correct, cheap and timely rather than exact, expensive and too late.

The first step is to identify the key issues to be monitored. Start by identifying the main problems expected rather then asking yourself: What do we want to know? Often when we begin by listing everything we 'want to know' this leads to long, unfocused lists of information to be collected but not necessarily used. It is more effective to start with the problems and concerns of the key stakeholder groups and partners. Involving those who have an interest in monitoring and in having the problems solved will ensure that the information will be more to the point, useful and accurate.

The next step is to define indicators that allow you to measure the key issues to be monitored. Traditionally, monitoring systems produce endless lists of quantitative indicators. Indicators such as the number of wells constructed, the number of people trained or the exact amounts spent are informative, but these indicators alone don't tell us anything about the quality and use of the improved water service or about community management. It is best to combine quantitative with qualitative indicators: Qualitative information can tell the reasons behind the quantitative information – why something is happening. Qualitative methods are ways of finding out what people do, know, think and experience.

The checklist below provides an example on a number of issues, possible indicators and desired levels. In practice, community members will develop their own indicators and determine their own desired levels.

MONITORING ISSUE	INDICATOR	DESIRED LEVEL
Community organisation active	Number of community meetings organised	At least 2 per year
	Account books properly kept	yes
	Contact with District Water Supply Office	At least 4 times per year
Cost recovery	% of household paying regularly	100%
	% of costs for O&M covered through household contributions	> 100%
	% of household income spent on water supply	< 3%
Satisfactory service level	Number of hours supply per day	> 8
	Water pressure	< 3 minutes to fill a bucket
	E-coli contamination	<0 faecal coliform per liter
Gender and equity taken into account	% of women among trained committee members	40%
	% of low income households within 500m from the standpost	90%
	% of high income households within 500m from the standpost	90%
Operation and maintenance capacity	Trained caretakers with tools	at least 2
	Repair time following a breakdown	< 2 days
	Average time required for the purchase of spare parts	< 3 days

If problems are monitored and can be dealt with at the community level, information does not need to be channelled to higher levels which should only receive information that is relevant, limited in quantity and of high accuracy. The support agency usually needs to organise and facilitate the development of monitoring activities at other levels and only act on aggregated information. At community level issues related to the community members and to the direct environment are relevant and can be acted upon. These issues include:

- number of families served by the improved water supply;
- quality and quantity of the improved water supply;
- time spent on management activities;
- number of women participating in decision-making.

At the level of the support agency more generic and aggregated monitoring information is needed on issues such as:

- costs of support activities;
- impact of support activities on community capacity or adoption of improved facilities and behaviour concerning hygiene practices, etc.;
- impact of user education on operation and maintenance costs;
- impact of support activities on breakdown times;
- impact of improved services on health;
- socio-economic impact of improved services;
- impact of any of the above on most disadvantaged groups (such as women, ethnic minorities).

For instance, at the community level field staff can help communities to draw up a maintenance plan based on baseline information about the number of standposts, the number of users, the technology used and the availability of spare parts. In this plan they can indicate timing of activities and the resources required. When subsequently maintenance is monitored, the monitoring information may reveal that breakdowns occur frequently. When this information is used by the water committee, this will lead to a change in the maintenance plan. Round trips by the caretaker for preventive maintenance will be made more often, or the caretaker replaced or trained. At district level this information is used to draw up plans for providing maintenance support to communities.