



REGIONAL CONFERENCE ON
**THE REFORM OF THE WATER SUPPLY AND
SANITATION SECTOR IN AFRICA**

**"ENHANCING PUBLIC-PRIVATE PARTNERSHIP IN THE
CONTEXT OF THE AFRICA VISION FOR WATER (2025)"**

WORKING DOCUMENTS

KAMPALA (UGANDA),

26-28 FEBRUARY, 2001



FOREWORD

In July 1996 in Johannesburg (Republic of South Africa), a high level regional conference deliberated on issues regarding institutional arrangements and private sector involvement in the water sector. Private sector participation (PSP) in the water sector was perceived as a means to increase coverage, improve service quality and efficiency, and reduce deficits. As a result, a number of governments initiated reforms of the Water Supply and Sanitation Sector, including the involvement of the private sector in the provision of water supply and sanitation (WSS) services and infrastructure. The Water Utilities Partnership (WUP) was founded at the same meeting.

A year later in 1997, the Long Term Vision for Water, Life and Environment in the 21st Century or World Water Vision was presented at the First World Water Forum of the World Water Council in Marrakech (Morocco). The Global Water Partnership (GWP) consequently developed the Framework for Action to implement the vision, with an aim to change attitudes, mobilize people and resources toward the goal of water security for all.

Almost half a decade since the Johannesburg meeting, the current regional conference on 'Reform of the Water Supply and Sanitation Sector in Africa' provides the forum to assess the progress made, lessons learnt, gaps and challenges encountered during the period, and plan the way forward. The conference also provides a forum for countries to share their reform experiences.

The conference format, delivered through a combination of plenary sessions, participatory panel discussions and parallel break-away work groups, is based on six broad sub-themes namely:

- (i) Political economy of water sector reform;
- (ii) Addressing the interests of the poor and vulnerable groups in the reform process;
- (iii) Financing strategies for Africa's water supply and sanitation reform;
- (iv) Key aspects of reform - options for public-private partnerships, bidding process, regulatory regime;
- (v) Institutional reform for sanitation services; and
- (vi) Water security through integrated water resources management.

The papers contained in this document have been prepared by industry practitioners, academicians and government experts. They are intended to guide and enrich the conference deliberations. The objectives of the conference will largely be achieved, however, if participants share their country experiences – positive and negative – for the benefit of others during the country thematic sessions.

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* to be distributed during the conference

MATRIX OF COUNTRY PRESENTATIONS

Session No.	Theme	Burkina Faso	Côte d'Ivoire	Gabon	Ghana	Guinea	Malawi	Mauritania	Mozambique	Namibia	Niger	Senegal	South Africa	Tanzania	Uganda	Zambia
1	Uganda WSS Sector Reform														X	
2	Working Group A Strategies and tools to address the interests of the poor Working Group B Initiating and managing the reform process Working Group C Labor Rationalisation, retrenchment and use of national capacity Financing Strategies - Panelists	X	X				X		X		X	X	X			X
3	Working Group A Choice of options for PPP				X					X	X	X	X			
4	Working Group B Bidding process Working Group C Regulatory regime, contract implementation and monitoring			X		X			X			X		X		
5A	Institutional reform for sanitation services	X	X									X	X			X
5B	Integrated water resources management - the necessary framework for sustainable WSS services									X				X		

COUNTRY CLINICS

Country clinics are a unique feature of the conference. They will allow country teams to review their approach to initiating or implementing reform with the benefit of advice from experts and peers.

The objectives of the country clinics are two-fold:

1. To provide country teams an opportunity to identify strengths and weaknesses of their reform process and to explore options for the way forward;
2. To identify lessons emerging from their experience.

The country clinics will be in two parts. The first part will consist of joint clinic sessions with other country participants who have similar interests and are at similar stages in their reform process. There will be three groups, namely:

- i. Pre-PSP (i.e. for countries contemplating reforms and bringing in the private sector);
- ii. PSP transition, (i.e. countries in the process of reforms);
- iii. Post-PSP (i.e. countries which have completed or at nearing completion of the process of bringing in the private sector).

Moderators and resource persons will bring out some of the main issues raised during the conference as well as others relevant to the process but which had not been covered. This is intended to raise participants' awareness on some of the key issues and to excite fuller participation.

In the second part, participants will be given an opportunity to meet with resource persons of their choice to discuss issues specific to their reform process.

The primary responsibility for organizing and managing this part of the country clinics will rest with the country teams themselves. Each team will designate a coordinator who will be the interface with the conference organisers, specifically the member of program sub-committee responsible for the country clinic session.

Preparation

- Coordinators register their intention to hold a country clinic and indicate the resource persons (experts, peers, external agencies) that they would like to have at hand;
- List and venue of country clinics as well as assignment of resource persons are announced.

Clinics

- Each country team will draw its own agenda.
- Normal progression:
 - take stock and identify status;
 - analyze strengths and weaknesses, identify issues to be discussed;
 - develop options;
 - identify lessons along the themes of the conference:
 - reform process design and management;
 - services to the poor and disadvantaged ;
 - financing;
 - HR and social issues: retrenchment and redeployment ;
 - choice of PPP options, bidding process;
 - contract management and regulatory oversight.

Reports on highlight of Country Action Plan

- Bullet point report following the above outline broadly with particular emphasis on:
 - options for resolving outstanding issues;
 - emerging lessons.
- Short oral presentation in plenary.

OPEN SESSION ON THE WAY FORWARD

The objective of the session is to begin drawing overall conclusions.

The session will start with the presentation of a draft conference statement which will be commented upon by panelists from different stakeholder groups: politicians, government officials, utility managers, NGOs, donors, private sector operators etc.

Each panelist will conclude by outlining the key points to be considered by the stakeholders' caucus which will immediately follow the session.

STAKEHOLDERS' CAUCUS

Stakeholders will be identified and listed by groups of eight to ten participants to discuss their agenda over lunch Day 3.

Stakeholder groups/tables will discuss the conference statement and the points of particular relevance/importance for them. Each group will designate one member to report very briefly (2') on their discussion in the next plenary.

Successive groups will adjust their brief statements to complement points already made and avoid repetitions.

WRAP UP AND SUMMARY

The chief rapporteur will outline the main amendments and complements to be made to the conference statement, as well as outline the main conclusions, the way forward, including follow-up activities.

ISSUES AND CHALLENGES FOR AFRICA'S WATER SUPPLY AND SANITATION SECTOR REFORMS

RCWSS/2-01/O.S./1

ISSUES AND CHALLENGES FOR AFRICA'S WATER SUPPLY AND SANITATION DELIVERY:**THEME AND OBJECTIVES OF THE CONFERENCE***Dennis Mwanza, Water Utilities Partnership (WUP)***Abstract**

The paper reflects on the state of the water supply and sanitation (WSS) sector and the challenges it poses to African governments. The reform processes taking place, and the increasing role that the private sector is expected to play, raise a number of management challenges. Key among the issues highlighted are: i) water resource management and economic efficiency, ii) management of the reform process, and iii) reducing the risks to reform through learning from the experiences of others.

INTRODUCTION**The Shared Vision**

A clean and healthy world: A world in which every person has safe and adequate water and sanitation and lives in a hygienic environment. VISION 21¹

From North to South, East to West of the continent, the issue of delivering water and sanitation services to our people, particularly the poor and vulnerable, has seen a lot of talk and action, and yet our efforts have not enabled us to reach the dream of providing water for all. A large percentage of Africa's people continue to live without adequate water and sanitation facilities. One billion people lack safe drinking water and almost three billions lack adequate sanitation. That the target of water for all can only be a dream come true in the year 2025 shows how far we have to go.

The water and sanitation problem can only get worse if we do not take concrete and radical steps in order to achieve the goals of VISION 21. It is reckoned that the pace of investments in WSS will at least need to double to meet the shared vision. The vision calls for an expenditure of US\$9 billion per year over the period 2000-2025 for incremental capital cost of basic services in developing countries. But as noted by the Water Supply and Sanitation Collaborative Council *it can be done*, provided there is a collective will on the part of leaders, decision-makers and civil society to see this happen.

Thankfully most African governments have seen the need to embark on appropriate reforms to address the problems of water and sanitation services. These reforms are taking place in the context of several other structural changes in the economies of African countries, and in an environment which has become increasingly more friendly to the private sector. The Water Utility Partnership (WUP), which aims at strengthening the capacities of African water producers in meeting the challenges of delivering water more efficiently, and in sensitising African governments on the need for reforms, is playing its part in ensuring the achievement of the vision.

But any discussion of water supply can only be meaningful if we recognize the importance of the efficient and sustainable management of the resource itself as underpinning the success of any reforms. It is only when the resource is available and is being efficiently managed that we can apply it to achieve the objectives enshrined in any vision.

1. STATUS OF WATER SUPPLY AND SANITATION IN AFRICA

It is reported that as at the year 2000, the percentage of people served with some form of improved water supply worldwide, was 82% (4.9 billion). By the same year the proportion of the world's population with access to excreta disposal facilities was 60% (3.6 billion) with rural coverage lagging behind urban coverage. This indeed is an improvement over

¹ VISION 21 is produced by the Water Supply and Collaborative Council, following consultations with people in communities, NGOs, professional organizations and governments around the world.

1990 figures of 79% and 55% for improved water and excreta disposal respectively. The majority of the global population without access to improved water supply or sanitation services are in Africa and Asia.

Africa has the lowest water supply coverage of any region in the world. More than 1 in 3 Africans do not have access to an improved water supply. The situation is not even better in the large cities, where 1 in 6 do not have access to improved supplies.² In Africa, as at the year 2000, water supply coverage was 62% while sanitation coverage was 60% for the same year. Compared with the percentage coverage figures of 56% in 1990 for water, the year 2000 figure shows an improvement in service provision while sanitation coverage shows a decrease of 1% compared to a figure of 61% recorded in 1990. The reality is that a significant proportion of Africa's population still lacks access to such essential services and our best efforts to date have only kept pace with the population growth and the rural-urban drift.

Water utilities in Africa have seen a lot of changes, yet there continues to be constant pressure on the quality and reliability of service, as funds are insufficient to ensure proper operation, maintenance and repair of the systems. The sad reality is that the number of persons unserved has increased and according to present trends, the absolute number will double between now and the year 2020 from 200 million to 400 million. The majority of these peoples will be those living in informal and peri-urban communities.

Finding money and attention for sanitation has been even more of a challenge as it is more difficult to provide justification through demand and willingness to pay, and private sector funding is correspondingly slower. It is clear therefore that initial investments will have to come from public funds, the communities and development partners if any impact is to be made.

Unfortunately even where funds have been available to undertake water and sanitation projects, the management of such funds to achieve the expected outputs has been inadequate in most African countries; Africa's development partners have therefore been increasingly reluctant to pump in more money in the absence of structural reforms. Current reforms are therefore not only driven by the desire of African governments to adopt new ways of doing things; they are also in recognition of the objective reality that our development partners would like to see them happen.

Water resources management and economic efficiency

The increasing awareness of water scarcity and conservation issues has provided a broad consensus on the key principles for a sustainable and equitable management and development of water resources. Water is no longer to be perceived as a purely public good; it is a scarce commodity which has dimensions of economic efficiency, social equity and environmental sustainability. These are more clearly expounded in the Dublin Principle # 4, which notes that: "Water has an economic value in all its competing uses and should be recognized as an economic good. Within this principle, it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Past failure to recognize the economic value of water led to wasteful and damaging uses of the resource. Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resource".

The underlying belief for this principle is that economic pricing would not only lead to the sound development of the sector but would also facilitate equity objectives; i.e. basic WSS services for all. This proposition is supported by the fact that: (i) inadequate tariffs are partly responsible for the low efficiency of WSS utilities, creating in turn lagging coverage, low revenues, low investments etc. and, (ii) that "it is expensive to be poor", i.e. all surveys of urban WSS services markets show that those who have no access to utility services actually pay more than the economic value of whatever services they get. The underpinning vision is therefore one of efficient, autonomous and financially viable utilities expanding coverage and recognizing the poor as valuable customers working in partnerships with public-funded programs to ensure access to basic services for all.

²Source: Global Water Supply and Sanitation Global Assessment Report 2000 Report, produced by WHO/UNICEF Joint Monitoring Programme for Water and Sanitation.

Integrated water resources management is now, fortunately, receiving attention in most African countries. One of the essential objectives identified include the extension and improvement of access to clean water and giving more attention to the poor. Given the big gap between needs and capacities, the requirement for better use of existing capacities becomes even more urgent. Issues of demand management (agricultural, industrial and household uses), and the appropriate pricing of water to reflect economic efficiency and scarcity (within the objectives of social equity), among others, must therefore receive our attention in the management of the reform processes.

Reform of the W&S Sector

What is reform?

To some in the sector, *reform* seems to be another word for privatization. This indeed is not the case, even though privatization and other variations of it – PSP/PPP – is almost always a key component of the reform processes taking place. The evidence is that the reforms progressing in several African countries involve more than the introduction of the private sector in water delivery. These reform efforts have involved institutional, legal, structural and regulatory initiatives that seek to find new ways of working to achieve our goals. For example, countries are realigning the nexus between rural and urban water supply to respond to different management options (e.g. Ghana, Kenya, Uganda etc.), adopting legislative and administrative measures to address the interests of the poor (e.g. South Africa), establishing new regulatory institutions (e.g. Ghana, Zambia) or strengthening existing ones to manage water resources and ensure consumer protection, among others. It is however the introduction of the private sector into the management of the production and distribution of water supply that has attracted the greatest attention. This is because it is a sensitive and more visible national issue, multi-disciplinary in context and is perceived as offering the panacea for addressing the problems inherent in the sector. Not surprisingly, it is in this area that there have been difficulties and in which the process of change seems to take much longer to achieve its objectives.

Objectives of reform

Generally, the reforms of the water sector in most African countries have been informed by the following goals:

- Increasing accessibility to water and sanitation services to those now unserved;
- Ensuring better quality service to those already being served;
- Providing the poor greater access to water supply; and
- Improving reliability and security of supplies.

These goals will be realized if adequate financial resources are made available for investment, if there exists an efficient and competent management of these resources, and if the will exists to charge the appropriate price for water delivery. The key questions that arise are: *i) how can we get planners and policy makers to think beyond government budgets and visualize the whole range of resources that could be mobilized for a sustained development of the WSS sector? and ii) for how long can we remain impervious to change if the old ways of supplying the water needs of the people have been inadequate in meeting our objectives?*

It is increasingly recognized that the shift in funding pattern will depend on institutional reform and capacity building with governance and tariffs at the heart of the issue. Enter the private sector! Partnership with the private sector can usher in a more efficient way of managing the resources available to the sector through access to expertise, and through the establishment of clear incentives for improved performance. Current evidence does *not* indicate a massive investment from the private sector into W&S projects in Africa (compared to Latin America and Asia);³ increased private sector participation, as part of an integrated reform programme nevertheless establishes a framework not only for efficient service provision, but also for increased support from bilateral and multilateral development partners.

Yet *reform* is a process and not an event. The establishment of institutions and the signing of contracts only provide a vehicle for the achievement of the objectives that we define. The constant monitoring and appraisal of what we set out to achieve and how they are or are not being achieved are very much a part of the process of change. So are the various

³ In the desire to reduce the impact of privatization on tariffs through purely private funding, some countries have chosen the option of leasing existing water systems to the private operator for periods ranging from 8-10 years. This requires substantial public spending on replacing and creating new assets. Private capital spending will typically be in the form of working capital, whilst identified capital expenditures will be financed from cash flow. Examples include Senegal, Guinea, Ghana (proposed).

players - national and local governments, legislators, regulators, utilities, small independent providers and civil society – who have to influence the changes, believe in them, and perform their respective roles in carrying them out.

Managing the introduction of the private sector

Twenty-seven African countries are at various stages in the reform of their WSS sector. A number of Francophone countries have already gone through years of private sector participation. Cote d'Ivoire, Senegal, Guinea, Gabon have already established partial or complete management of the water supply by the private sector, whilst others are at different stages of the process. Several Anglophone countries are now at various stages in their privatization programmes. This implies that the message and the rationale for reforms have already been received and are appreciated. The challenge in most countries is how to i) sustain the reforms and ensure that objectives are being achieved, as in Guinea, Senegal and Mozambique, and ii) carry out the institutional reforms and build the capacity and incentive systems necessary for the achievement of the set goals. Whilst recognising the existence of country-specific conditions and realities, it is important that African countries share the experiences – successes and failures – of their forerunners as they embark on these reform processes.

The restructuring of the water sector to bring in the private sector will typically involve the following steps:

- i. Clear definition of both the objectives of, and constraints to, sector reform
- ii. Choice of an appropriate option for the participation of the private sector, and the development of a business framework for pursuing this;
- iii. Definition of the legislative, regulatory and institutional framework and identification of roles for key players;
- iv. Undertaking appropriate studies, and preparation of the necessary documentation to support the bidding process
- v. Labour rationalization
- vi. Public awareness and feedback programme
- vii. Identification of the level and sources of the investment requirements to meet set objectives

Whilst most of these steps may be handled routinely and would generally not pose much problem, there are a few which provide opportunities for reaching more creative outcomes. Some of these issues in defining, designing, and implementing reform are discussed below.

ISSUES IN AFRICAN WATER SECTOR REFORM

The political context

We must recognize that the political context in which the private sector is introduced into water service delivery can be very problematic. The reforms must be seen to be feasible and desirable, requiring the sensitization and involvement of all stakeholders in shaping its key components. Concerns regarding perceived *exploitation* by the private sector and *foreignisation* as foreign companies take over previously public-owned utilities are issues that must be addressed. But above all else is the question of establishing and sustaining the political commitment for carrying out the reforms.

Addressing the needs of the poor

Water is the single most important priority for the poor in low-income countries, and this fact should inform the reforms being undertaken. While a well-performing utility can deliver water services efficiently to its customers, it may not meet the greater challenge of supplying the needs of the poor, and those in informal and peri-urban settlements. Indeed "improved service" may only enhance the present standards of those who are already connected, rather than increase the coverage to include the unserved. The end results that the reforms pursue should therefore include innovative and participatory means of providing service to the poor and freeing resources to support other social services to the poor.

Traditional approaches of engagement with the private sector have had implicit assumptions that governments know best, that the poor are *not* in a position to pay for water services, that the large utilities know how to deal with the interests of the poor (even if they were willing to), and that water supply is a monopoly that cannot allow some form of competition. These may not be so. Indeed some common features of these contracts do not necessarily reflect or support the interests of the poor. These include (a) exclusivity provisions that restrict competition in water delivery services and

marginalizes the role of small independent producers; (b) service obligations and uniform standards that are not necessarily of concern to the poor; and (c) reliance on the use of subsidies and tariff arrangements that do not in fact reach or benefit the poor. *The real challenge therefore is how to tailor our reforms to achieve exactly what is intended in the definition of strategies for the poor.*

Ensuring that the concerns of labour are well-factored into the process

An informed and supportive labour front is an asset to the process of change. Opposition to the introduction of the private sector may either be the result of ignorance or in most cases a feeling of being left out in the decision-making process. It could also be the result of self-interest. Very often policymakers have embarked on reforms and strategies, considered to be in the overall national interest, without adequately involving their social partners. This situation now seems to have changed, at least for the reforms in the water sector; the leadership of labour is increasingly identifying with the process and playing a constructive role. Yet this constructive role is only possible when the concerns of labour are adequately addressed in introducing a greater role for the private sector.

With most African water utilities overstuffed, the advent of the private sector imposes the need to downsize at considerable financial and social cost to government. Labour redundancies, redeployment, retraining and compensation for severance are all matters that can only be adequately handled if unions are well-informed and identify with the process of change. Nonetheless the management of labour rationalization could be one of the most difficult aspects of the reform. Some African countries have handled this with considerable success and with support from development partners. While there may be peculiar national differences, no doubt there are areas of common ground in dealing with the concerns of labour which could be shared with other countries.

The challenge of cost recovery

The need to ensure the survival of African water utilities clearly requires that there is sufficient generation of internal cash flow to meet expected expenditures. But the issue of cost recovery should not be confused with the ability of the poor to meet the real cost of water services. In most African countries tariffs have been kept at artificially low levels, while the utilities cry out for Government handouts. Whilst the poor have often been used as an excuse for keeping tariffs low, the evidence shows that they in fact pay much more per cubic meter for water than the well-to-do, better-served utility consumer.

Government indebtedness is a major concern for most African utilities. As the utilities totter, government institutions refuse or are unable to pay their bills. A typical reaction from the treasury has been that the utility's indebtedness is always covered by the state anyway, and therefore there should be no complaints. This of course creates two problems: i) the utility gets an alibi for poor management and, ii) there is no incentive for government institutions to use water prudently. *The real challenge for reformers is how to adopt the appropriate tariff structures and strategies that will ensure the long-term sustainability of the utilities.*

The challenges of sanitation and hygiene

Selling water is relatively easy, even to the poor; selling sanitation is much harder, despite the clear public health benefits. For this reason, most discussion of sector reform and increased private participation focuses on the "water" part of the "water and sanitation" sector. While the Water and Sanitation Decade successfully advocated the integrated promotion of water supply, sanitation, and hygiene improvements, most discussion of "sector reform" ignores sanitation and hygiene, and focuses on the financially viable water supply sector component. This is less of a problem where the utility is responsible for both water and sewerage, but this still does not solve the most pressing problems. For many of the unserved, on-site sanitation is the most appropriate option, yet the one to which the utility is least able to respond. And few if any utilities are involved in effective hygiene promotion for either connected or future customers.

Yet sector and tariff reform offers significant opportunities to raise funds for sanitation and hygiene. Burkina Faso's domestic water tariff structure successfully raises funds for urban sanitation, and experience across the world demonstrates the benefits of linking the bills for water and sewerage. While some economists may be suspicious of cross-subsidy from water supply to sanitation, this question may best be addressed by asking "*What business are we in?*"

If we are truly in the water and sanitation sector, raising funds for sanitation and hygiene promotion through the water bill is simply cost recovery, not subsidy.

Private capital, local participation

Private capital has generally not been available to most low-income countries, and in particular, to peri-urban, small town and sanitation projects. It has also not been available to countries perceived as high-risk. Africa lags behind Latin America and Asia in accessing private direct investments in its WSS sector. A greater number of transactions taking place on the continent do not involve substantial private funding, unlike in Latin America where companies could put up as much as 40% of the equity of a \$1 billion utility. And yet our economies are required to meet the substantial outflow of foreign exchange resources that are attendant to private foreign participation.

On the other hand the question of encouraging local participation in ownership and management should not be overlooked. The concerns of foreignisation, foreign exchange outflows, building indigenous capacities etc. should feature prominently in the reform process. The drive towards globalisation should provide us with the impetus to create strong local institutions and participants in the WSS sector who can respond to the challenges that globalisation itself provides. It is only in this way that we can internalize a substantial part of the fiscal benefits of privatization. *The challenges that African governments face is to define the appropriate set of incentives necessary to attract more private risk capital, and at the same time create appropriate opportunities for locals to participate effectively and in a meaningful way.*

Ensuring the integrity of the procurement process – transparency

A good reform process must have integrity and must respond to the requirements of transparency and good governance. This is even more important during the procurement process as there are clear benefits to this. Transparency should not be seen as a requirement imposed by bilateral institutions, but rather as a tool for ensuring the sustainability of the contractual relationship with the private sector and the achievement of set goals.

2. ENSURING STRUCTURES FOR POST TRANSACTION MONITORING AND RESOLUTION OF DIFFERENCES

Privatisation/PSP/PPP should not end at the signing of a contract agreement. Indeed the process of achieving the objectives of the reforms has only just begun after the signing of the agreement. It is only through a well-defined system of monitoring the operations of the private operator, the regulator and indeed all active players in the delivery of WSS services in line with the objectives we seek to achieve that we could say *our work is good*.

Reducing the risks of reform

There are risks with any reform process and we need to constantly remind ourselves of our goals as well as the unexpected outcomes, even when the reform process is well thought-out. Things can get worse as well as better. We need to constantly ask ourselves:

- *Are all stakeholders on board and what is the likely impact of their objection and inaction?*
- *How can government ensure that fundamental public services are maintained, under a PPP environment?*
- *Does the private sector have an interest in serving the poor? How can we design contracts to make sure they do, and who will ensure that they do?*
- *What has been the experience and record of those with whom we want to do business?*
- *What has been the experience of other African countries in similar situations? What are the bad examples and the good ones? What works best, for all concerned? What should we watch out for?*
- *What is our fallback position if we fail? Are there sufficient emergency structures to deal with such an occurrence?*

The most important reason for the Kampala Conference is to provide a forum for participants to learn the experiences of others and to limit the exposure to the unknown facts of privatized water supply arrangements. It is gratifying to note that beyond gatherings such as the one in Kampala, African countries undertaking reforms have embarked on study tours to other countries which have tried out PSP/PPP and have success and failure stories to tell. Beyond such visits it should be appreciated that the final form and practice should be tailored to country-specific needs

Conclusion

The problems confronting Africa's water and sanitation needs are many and varied. The continent continues to lag behind the rest of the world in the provision of WSS services for its peoples. Thankfully there is greater awareness of the need for change, and reforms of the sector are sweeping the entire continent. These reforms are taking place in several areas - legal, institutional, regulatory and structural. The dominant aspect of these reforms is the increased role being given to the private sector in the achievement of the *Shared Vision*. In this process governments are increasingly seeing themselves as facilitators and regulators, rather than service providers.

This Conference provides the forum for African governments to share experiences in these reforms.

RCWSS/2-01/O.S./2

PATTERNS OF PUBLIC - PRIVATE PARTNERSHIPS*Richard Franceys, Associate Professor, Water and Sanitation Services Management, IHE Delft, The Netherlands***Abstract**

Public Private Partnerships have become the fashionable, if sometimes controversial, institutional solution to water and sanitation provision in the world. Based on an investigation of European institutional models the paper examines the trends in PPP types, activities, location and international partners with a particular focus on middle and low-income countries, and raises questions as to the future progress of the PPP approach.

Introduction

The world of water and sanitation is changing. The long accepted pattern of governments serving their citizens through the direct provision of water and sanitation to ensure the 'merit good' of public health has not achieved the desired benefits, particularly in the middle and low-income countries (MLIC). In the majority, government provision has failed to break through the performance barrier of a mediocre, supply-driven approach.

Although water service coverage in rural areas has reportedly reached 69%, with 91% coverage declared in the urban areas of middle and low-income countries (dramatically lower coverage for sanitation, 33% rural and 80% urban)[1] too often subsidies to ensure access for all have gone to the rich, not the poor. Too often the government providers have become partial employment providers for the chosen few. The urban market has been growing at a rate of a million people every seven days but too many people, if they receive water at all, receive it at poor pressure and then perhaps for only a couple of hours per day. This level of service can be contrasted with the high-income countries (HIC) where demands for ever higher water quality and waste water disposal standards, over and above the near 100% service coverage, are driving investment requirements to new heights and similarly demanding institutional change.

Governments and their agencies apparently cannot service the increasing demand for coverage and quality, so the world is turning to Public Private Partnerships. Which, of course, is not new. In many countries private companies started water supply systems and although there may have been government contractors and government consultants in the more extreme situations, there were not often government pump manufacturers or photocopier suppliers. There has nearly always been some form of private involvement.

But the change in the past ten years is that now, increasingly, the world accepts that the private sector can share the responsibility for managing the provision of water and sanitation, this 'heartfelt' basic need. The 'heartfelt' aspect is significant as people approach water differently from other utilities such as electricity or gas.

Investigating three main patterns of public private partnerships (and using a loose definition of the term), the Netherlands benefits from private companies operating under private company law with public (government) ownership of the shares (non-tradeable). The Public Water PLC, developed to achieve economies of scale by serving up to ten local government areas, performs well with a high degree of technical effectiveness. The model has achieved full coverage of water, albeit at a fairly high cost, and does not have to make any returns to shareholders. As with all institutional models there are variations on the theme. Dutch wastewater, traditionally managed by separate government boards, is now tentatively considering a large Design, Finance, Build and Operate (DBFO) contract for wastewater treatment in one region.

Tentative, because this is the sort of PPP which worries people, giving away control of 'our water'. Though, as in the Netherlands, several countries do seem prepared to risk PPPs in sanitation before water as 'it is not so critical.' But it is this sort of 'privatisation' that the French have benefited from for over one hundred years. In the majority of cases the government owns the fixed assets and one of the three major private companies takes full responsibility to operate the systems, as in a lease contract. More recently companies have also had to invest (or to manage the investment of) significant amounts in new works through concessions, after years of under-investment. As in the Dutch example, there is

a pattern of aggregating with one PPP contract serving several municipalities. The price in France is similar to that charged in the Netherlands, though it had to increase by 60% in the six years until 1997, and to achieve adequate wastewater treatment coverage (aiming for 65% in 2005) [2] there is a form of subsidy from all water customers. Prices in communes with PPP are reportedly higher than those without, but there is no information as to what extent standards are correspondingly higher.

It is the French pattern that is now being promoted around the world and forms the background for this paper's discussions. But the impetus for change was perhaps kick-started by another European nation, the United Kingdom. The fashion for 'privatisation' in all things started there in the early 1980's, and although remaining remarkably unpopular, reached the already consolidated water sector in 1989. One notable advisor strongly recommended the French approach to the British government, that is, retaining the fixed assets in government ownership. But this was rejected in order to remove the future funding requirements from the Public Sector. So the industry was sold to private shareholders (at a discount), a divestiture. The newly private companies have, until recently, been able to fund much of their new capital works from their cash flow, generated by the rapidly increasing tariffs. And they have managed to make most impressive profits at the same time (12% return on capital when borrowing at perhaps 7% with 20%-40% gearing), a level significantly higher than France and the Netherlands, though interestingly at a very similar overall price.

The new private managers (though they were in reality the old public managers with new incentives) achieved a remarkable turn around in an industry that had tried its best but had been plagued by under-investment for several generations. Since privatisation, security of supply is up (population subject to hosepipe bans: 41% 1990/91; 0% 1999/00), quality of water is up (99.8% of around 2.8 million tests met the required standards 1999/00, with number failing at one tenth of 1992 total, [3]), leakage is down (by 31% since 1992/93), pollution is dramatically diminished, companies are prosecuted and fined for failures, service quality is better than ever (billing contacts not responded to within 10 working days down from 31% in 1990/91 to 1.5% in 1999/00) and now even disconnections are banned. Over \$60 billion has been invested since privatisation.

A genuinely positive experience though many have been amazed at the size of the profits, an average of \$70 per person operating profit on turnover of \$194 per person in 1998/99 following the 40% average real price increase since privatisation (all UK figures derived from Ofwat Company Reports unless specified).

To limit the possible abuse of the monopoly position in providing this basic need, England and Wales introduced three regulators – the Drinking Water Inspectorate, the Environment Agency and the Office of Water Services. Ofwat's Director, sets the prices and decides upon the investments and castigates companies for poor leakage records and even measures how long it takes the companies to answer the telephone to their customers. Ofwat is also responsible for another valuable aspect of regulation, the customer representatives on the Customer Service Committees. The summarised responses of colleagues on the Central CSC are in Box 1.

Box 1. UK customer committee on privatisation

Privatisation has been: a move forward; by and large, a good job done; standard of service is unbelievably better; a two edged sword; not totally convinced by privatisation; the basic concept is good, they were in a state of disrepair; but costs have risen disproportionately; the companies were sold off too cheap; the original price setting was wrong, the first price review got it wrong, now we hope it is right. Water and sewerage bills have increased above the rate of inflation. A bigger percentage of household income has gone on water, because of the costs of the capital expenditure programme, but also to support high profits and dividends. One CSC recommendation: 'try and sort out regulation first, otherwise you are always learning as you go along'

Source: Comments by Members of Ofwat Central Customer Services Committee, January 2000

What does this European experience have to say to the rest of the world? Remembering that even in the UK, Scotland and Northern Ireland have so far rejected 'privatisation' – though they are experimenting with alternative Public Private Partnerships of the BOT variety (Build, Operate, Transfer). And remembering that the rest of the world has a very different economic situation with very different investment potential – it is much easier to make any institutional model work when it is possible to invest one's way out of the problem. The Modern Equivalent Asset Value of the English & Welsh fixed assets is \$2,000 for water, \$3,760 for sewerage per person and the privatised industry is continuing to invest at \$100 per person per year.

Table 1

Population & Wealth	High income	Upper middle income	Lower middle income	Low income
Population, million (WDR, 1999)	885	588	908	3,515
GNP per person (WDR, 1999)	\$25,510	\$4,860	\$1,710	\$520
Affordable watsan investment per person per generation at 5% of income (includes for O&M)	\$7,420	\$1,480	\$520	\$160

For the three and a half billion people in the low-income countries affordability for water and sanitation is extremely restricted. Without necessarily understanding the full implications of these levels of affordability, demonstrated in Table 1, the wider world appears to like the French model of privatisation but often allied with the English model of regulation. It is not possible to have privatisation of a monopoly without some form of regulation – something now also being acknowledged in France [4] where it had been assumed that competition for renewal of contracts served the purpose.

In the UK, regulation has gone a stage further with 'competition' for benefits from the three regulators. This has been experienced in the recently completed five yearly price review (reducing prices by an average of 12.3% whilst delivering \$5 billion per year for capital investment & the environment) as the different regulators battled to show how much they were delivering for their various 'constituencies'. Not particularly edifying, but effective – for it is competition that draws the real benefits out of the private sector, just as it draws it from the regulators. Privatisation, regulation and competition are the complementary strands of PPP. In more conventional competition terms, from the beginning of March 2000 new water contractors in England and Wales have had the right to access other contractors pipe networks to supply customers ('common carriage'). Competition is rightly moving on beyond simple comparative competition, however valuable that has also been.

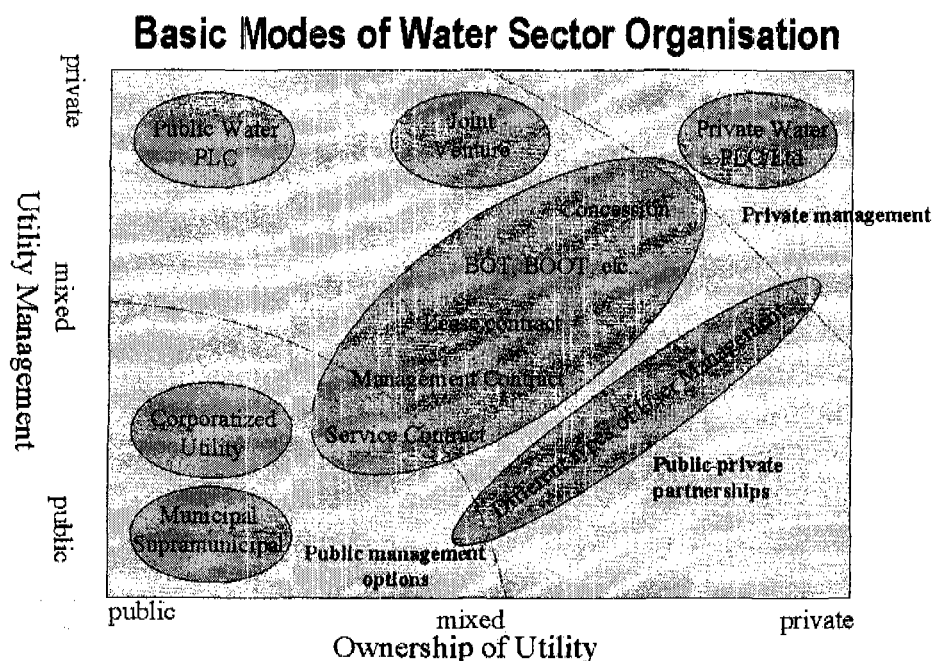
To date, competition has also delivered eight 'inset appointments' (out of a possible 500) whereby customers using more than 250 megalitres per year can appoint a different contractor to supply them. With the threshold being reduced to 100 megalitres per year an additional 1,500 customers will become eligible [5].

Following the price review which reasonably reduced the target cost of capital, water companies have begun to explore other patterns of PPP with consideration of separating fixed assets into a mutual company, owned by customers, financed by debt with the original equity financed company acting as operator having the expectation to renew any such contract in open competition. Perhaps the English model is tending back towards the 'French approach'.

These changes clearly demonstrate a 'process' approach towards PPP, indicating that there is no 'correct' answer for watsan institutions. The diagram shown below (Figure 1, [6]), demonstrates the range of private sector options available to the world, many being variations on the patterns described above. The main change across the spectrum is the degree of private capital being introduced and therefore the length of the contract required to obtain the necessary payback and the necessary profit.

Privatisation demands profits for shareholders that have taken the risk of investing. One of the main claims for privatisation has been that it delivers the required new capital to the sector. It is not clear whether any significant new money is coming into the sector, most PPP's have only a small equity contribution. But privatisation is undoubtedly unlocking access to sources of finance that the world had begun to restrict. What remains a constant is that in the end the customer pays. PPP has the advantage of making this reality more obvious though that is not always what governments intend.

Figure 1



Present use of PPP around the world

From this range of options, the world is making its choices for PPP as illustrated by the following data taken from the 638 contracts detailed in the 'IHE-WEDC PPP Database' as at November 2000.

Table 2

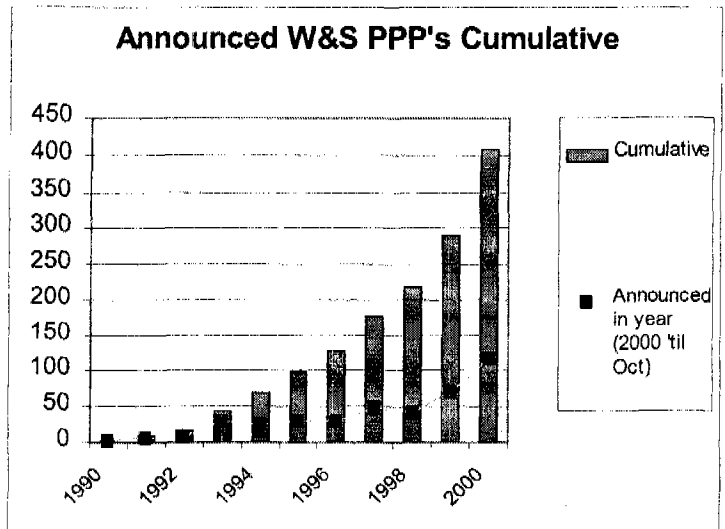
Public Private Partnerships	Capital expenditure (billion)	Utility purchases (billion)	Population served (million)
Total Reported/Planned	\$152.12	\$35.68	393.9
Total Operational	\$111.9	\$34.7	304.8
MLIC Reported/planned	\$68.1	\$4.1	229.1
MLIC Operational	\$31.1	\$3.4	154.8

The database, derived from published sources and initially a questionnaire [7] contains reported PPP's since 1989. The focus is on contracts from Middle and Low-Income Countries (MLIC) though Table 2 contrasts that information with that reported for the High-Income Countries. The MLIC 'utility purchases' do not represent investment in improved services to customers but rather governments taking returns out of the sector (by selling companies). The present population reported served by PPP's in Middle and Low-Income Countries, although undoubtedly less than the actual number, represents only 5% of the urban population. There is much scope for PPP progress or for demonstrating more effective alternatives.

The rate of growth in major PPP contracts shown in Figure 2 demonstrates that Public Private Partnerships are now increasingly accepted. However, not all of these announced PPPs are delivering benefits with 18% still in the planning stage and 7% postponed or cancelled. Figures for 2000 represent only the first six months of the year, illustrating the increasing rate of announcements, interrupted only by the East Asia financial crisis of 1998.

Figure 2

The regions where PPPs are being used (Figure 3) underestimates Europe where significant out-contracting is so normal as to be unreportable (and where only limited data is available from France) but demonstrates the predominance of Latin America, the richest of the MLIC regions. However, even in South Asia, one of the most resistant of all regions to ideas of private sector involvement, the role of service contracts is increasingly recognised.



The types of contract (Table 3) shows an almost equal split in MLICs between the services and management contracts that do not require private investment (over and above working capital) and the major PPP's. Both approaches have an important role to play. Services contracts may be seen as an excellent opportunity for national contractors to begin to build up expertise in the sector before taking on the more demanding role of managing a concession. Management contracts give the opportunity to begin to sort out the problems before committing to a long-term contract that will have to be renegotiated as soon as the concessionaire begins to discover the actual condition of the assets.

Figure 3

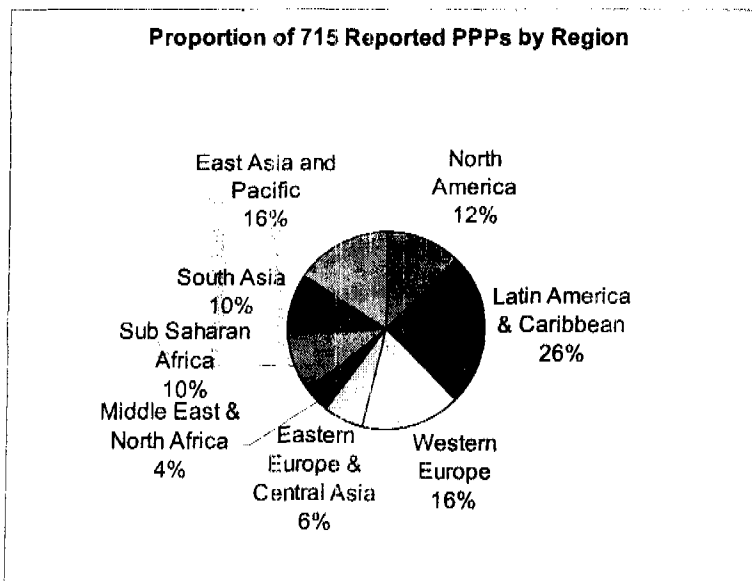


Table 4 PPP Contracts by Activity	MLIC Operating (by number)	HLIC Operating (by number)
Water	34%	31%
Water Treatment	17%	10%
Water & Sanitation	27%	24%
Waste Water Treatment	18%	29%
Water Treatment & Waste Water Treatment	1%	2%
Sewerage & Waste Water Treatment	2%	4%
Sewerage	0%	0%

Seventy per cent of the operating PPPs requiring capital expenditure have international contractors involved. And almost two thirds of those contractors originate from one country, France. Clearly their long involvement in PPPs has given French companies a significant comparative advantage. The British were expected to raise the competitive stakes but within their one quarter share by number of PPPs, they are generally focussing on the safer markets of Europe and North America.

Figures 5 and 6 illustrate the extent of market leadership in the international water business by France in general and, in MLICs, by Lyonnaise des Eaux in particular.

Figure 5

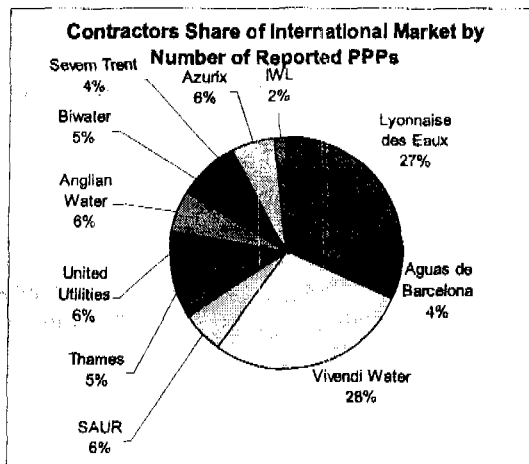
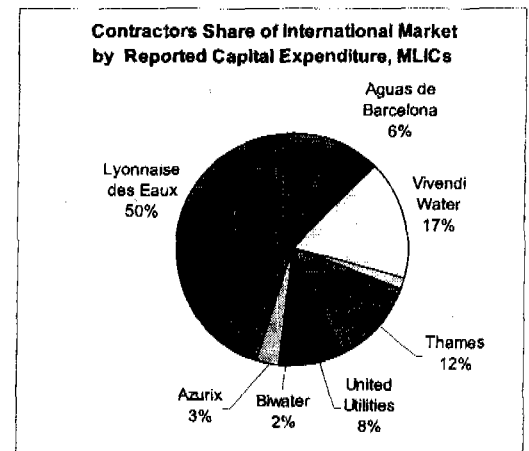


Figure 6



An important question arising from this data is the extent to which the undoubted improvements in the large PPP's are really a function of privatisation or foreignisation? The extent of foreign involvement suggests that for major PPP's the answer is foreignisation, which appears to need about 1% (by staff numbers) of expensive expatriates (\$250,000 per annum) to deliver a 'world class' water supply. This might provide a limit to the size of city that can be served by a foreign PPP.

The emerging trends

Case studies from around the world show that the new PPP's are delivering - if it is accepted that employment generation is not a core competence of a water authority and if we are prepared for the profits of a monopoly supplier of basic needs using fairly simplistic technology to flow from the poorer countries to the rich. However, remembering what the alternative has been, even though we shouldn't have to need PPP, foreign or otherwise, we undoubtedly do need it.

Public Private Partnerships are this generation's way forward. PPP's are effective where regulation, competition and foreignisation are included. The question is how can this expertise be stretched to include the secondary towns and cities

in Middle and Low-Income countries, how to ensure that the benefits reach the poor and how to ensure adequate provision when it is not the world's best water multinationals that are providing the service?

Table 5

Operational PPPs by Country Income Range	Capital expenditure (billion)	Utility purchases (billion)	Population served (million)
High Income	\$80.8	\$31.3	150.0
Upper Middle Income	\$17.0	\$3.3	90.2
Lower Middle Income	\$12.3	\$0.1	40.8
Low Income	\$1.9	\$0.0	23.8

Analysis of the PPP database and comparison against world gazetteers suggests that in the 433 cities larger than 750,000 in the world, 90 (20%) are currently served by PPPs. In the '40,000' smaller cities and towns there are approximately 2,350 PPPs, that is 6%.

The international contractors will be unable to bridge much more than a part of that gap. It is necessary therefore to support new national contractors by actively promoting the use of more limited service contracts in order to develop expertise (and to provide competition) and by trying to grow the capacity of the 'Small Scale Water and Sanitation Providers' where they are already active. It is necessary to involve the skills of NGO's as social consultants to help to meet the needs of the poor as well as providing external support to governments and particularly the new regulators. It is this degree of partnership that is required for successful Public Private Partnerships.

References

1. UN General Assembly, Progress made in providing safe water supply and sanitation for all during the 1990's, Economic and Social Council, Commission on Sustainable Development, 24 April - 5 May, 2000
2. Global Water Report, 'Why the French drink wine', GWR 54, Financial Times, 11 September 1998
3. Drinking Water Inspectorate, Annual Report, 2000
4. Global Water Report, GWR 87, Financial Times, 14 January 2000 quoting 'Haut Conseil du Secteur Public'
5. Ofwat, The Current State of Market Competition, 2000
6. Blokland M, Braadbaart O and Schwartz K, 'Private Business, Public owners', VROM, The Hague, 1999
7. Sansom K, Franceys R and Morales-Reyes J, Contracting Out Services for Water and Sanitation, DFID KAR 6574, WEDC, Loughborough University, 2001, (in preparation)

THE POLITICAL ECONOMY OF WATER SECTOR REFORM

RCWSS/2-01/1.1

THIRSTING FOR EFFICIENCY (A) THE POLITICS OF WATER REFORM THE EFFECT OF REFORM ON PERFORMANCE OF URBAN WATER UTILITIES

George Clarke, World Bank

A. THE POLITICS OF WATER REFORM

Introduction

Although reforming infrastructure by introducing private sector participation and improving regulation can produce large societal gains, the gains are often unevenly distributed. When reform harms politically powerful groups, they can often find ways to slow, or stop, reform at the expense of the rest of society. Recognizing the factors that determine whether a group can block reform is vital if advocates want to maximize the probability of reform. This note summarizes results from a World Bank study that looked at the political determinants and economic effects of urban water reform in six large cities in developing countries.¹ Four of the cases involved private sector participation, while two involved reforms of state-owned enterprises (see Table 1). This note summarizes the political factors that affected the decision to reform and determined the type of reform that was implemented, while a companion note summarizes the factors that affected the success of reform.

Winners and losers from reform

Whether reform is politically desirable and feasible will depend upon the likely size and distribution of gains and losses, and how important potential winners and losers are to political decision-makers. In turn, initial sector conditions determine how reform affects different groups. Groups of particular interest include connected households, non-connected households, taxpayers, workers and private investors involved in the sector. In the rest of this section, we discuss the factors that affect how different groups are affected by reform of the urban water sector, and why.

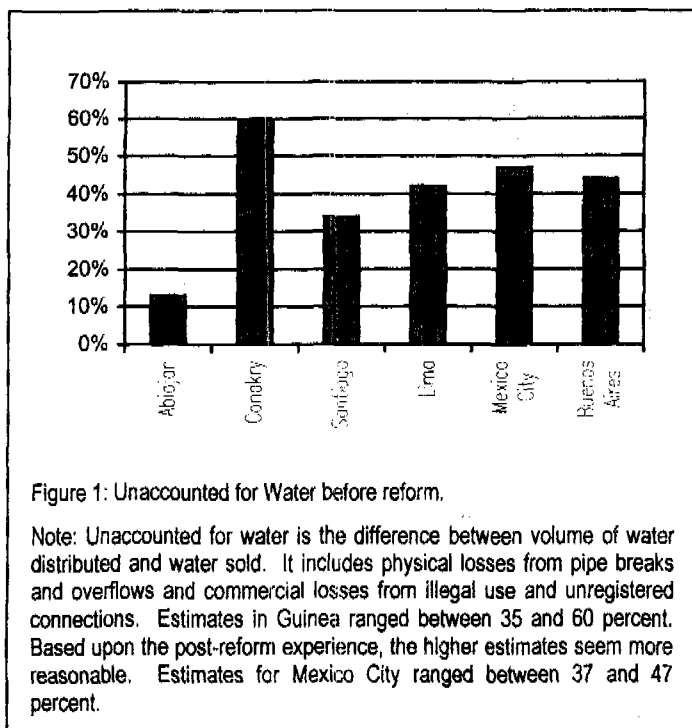
Connected Customers

Reform will affect connected users primarily through its effect on water and service quality and prices. Since quality improvements are most likely in cities where prices were set below marginal cost, quality and price often affect current consumers in opposite ways.

Water and Service Quality. When the public utility operated inefficiently before reform, reform can benefit current users by improving water or service quality. Quality was poor in most of the case-study cities before reform, but was worst in Conakry and Lima. In Conakry, the water system was on the verge of collapse. Service was infrequent, water was visibly polluted and unaccounted for water was high (see Figure 1). Low prices, combined with weak billing and collection, meant that maintenance was inadequate and it appeared that a major reform would be needed to avoid system collapse. The water system in Lima faced similar problems. Nearly half of customers received water for less than 12

Considerably more detail on the situation before reform, the effect of reform, and the cost-benefit methodology is available in the case studies and the synthesis paper. The six case studies are summarized in Mary Shirley and Claude Ménard, 2000. "Cities Awash: Reforming Urban Water Systems in Developing Countries." Policy Research Working Paper, World Bank, Washington DC. The six case studies are: (Abidjan) Claude Ménard and George Clarke, 2000. "Reforming Water Supply in Abidjan, Côte d'Ivoire: A Mild Reform in a Turbulent Environment." Policy Research Working Paper 2377, World Bank, Washington DC; (Buenos Aires) Lorena Alcázar, Manuel A. Abdala, and Mary M. Shirley, 2000. "The Buenos Aires Water Concession." Policy Research Working Paper #2311, World Bank, Washington DC; (Conakry) Claude Ménard and George Clarke, 2000. "A Transitory Regime: Water Supply in Conakry, Guinea." Policy Research Working Paper 2362, World Bank, Washington DC; (Lima) Lorena Alcázar, Lixin Colin Xu and Ana Maria Zuluaga, 2000. "Institutions, Politics and Contracts: The Attempt to Privatize the Water and Sanitation Utility of Lima, Peru." Policy Research Working Paper 2478, World Bank, Washington DC; (Mexico City) Luke Haggarty, Penelope Brook and Ana Maria Zuluaga, 2000. "Thirst for Reform? Private Sector Participation in Urban Water Supply: The case of Mexico City's Water Sector Service Contracts." Policy Research Working Paper, World Bank, Washington DC; and (Santiago) Mary M. Shirley, Lixin Colin Xu, and Ana Maria Zuluaga, 2000. "Reforming the Urban Water System in Santiago, Chile." Policy Research Working Paper 2294, World Bank, Washington DC. These papers form part of a forthcoming book, *Thirsting for Efficiency*, from Elsevier Press.

hours a day and over a quarter received water for less than six hours a day. Despite the arid conditions and the high cost of raw water, 43 percent of water production was lost due to leakage or theft (see Figure 1). Further, due to a lack of



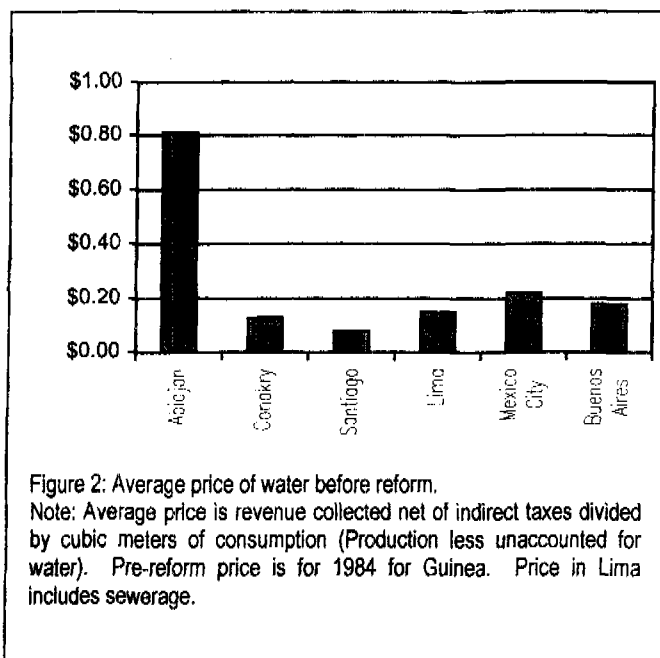
clean water and a failure to remove and treat wastewater, waterborne diseases had become a major cause of morbidity and mortality, especially in the poorer areas of Lima. Consequently, in these two cases, quality improvements compensated customers for the price increases that accompanied reform.

In contrast, in two of cities, Abidjan and Santiago, the water systems were already performing well. In Abidjan, a private operator had been responsible for sector operations for nearly 30 years. Unaccounted for water was low (see Figure 1), and water quality and pressure were good, especially by regional standards. Similarly, service appeared adequate in Santiago. Although unaccounted for water was relatively high (see Figure 1), it had been improving and cutoffs were not frequent by regional standards. Consequently, in these cities, there was little pressure from current users for improved service.

Price of Water. When prices are set below marginal cost before reform, price increases are often necessary or desirable, since setting usage price equal to marginal cost is economically efficient.

Further, even if the government is willing to subsidize tariffs through general tax revenues, private operators might be wary about relying upon subsidies if they are unable to enforce contracts with the government (e.g., when the judiciary is politically dependent). For example, the governments of both Guinea and Côte d'Ivoire failed to pay for their own water consumption for long periods before and after reform. In these cases, it is unlikely that a private operator would have been willing to rely upon subsidies being transferred in a reliable manner.

However, large price increases are painful for consumers, especially when water use was not billed before reform. In four of the six cases, prices were below estimates of long-run marginal cost (see Figure 2 for pre-reform prices in each city). In Lima and Mexico City, raw water was expensive and, therefore, even if efficiency improved significantly after reform, large price increases were needed. Although an abundant source of cheap water was available in Conakry, the marginal cost of water was high for other reasons. In particular, a small number of customers were spread over a large area and per capita consumption was low (most connections were private taps in yards).² Although prices were also below estimates of marginal cost in Santiago, the estimated marginal cost was low and the required price increases were modest. In Buenos Aires and Abidjan, prices were close to estimates of long-run marginal cost and, consequently, price increases were not necessary (see Table 1).



² In 1989, the World Bank estimated that the Average Incremental Cost (AIC) of water in Conakry was US\$0.82/m³. In comparison, the long-run marginal costs in Mexico City and Lima were \$0.41-\$0.82 and \$0.45 respectively. Although it is difficult to compare these estimates, which were computed in different ways and are slightly different concepts, this indicates that large price increases were necessary in Conakry (see Figure 2).

Non-Connected Households

When the connection rate before reform was high (e.g., in Santiago and Mexico City), non-connected households were less likely to benefit from reform and, therefore, less likely to support reform. In contrast, in cities where the connection rate was low (e.g., in Lima, Buenos Aires, and Conakry), non-connected households could potentially benefit from reform and, therefore, might support it. However, the benefit to non-connected households depended upon what alternate sources of water were available, whether the reform was likely to increase system expansion and how system expansion was financed.

When the marginal cost of piped water was high relative to alternative sources, low-income households were less likely to benefit from reform. In Conakry, most non-connected households got water from wells and, consequently, were unwilling to pay high prices for piped water. Although the wells were polluted and the health consequences could be severe, consumers may have been unaware of the full cost. In contrast, when non-connected households get water from expensive water vendors, they are often willing to pay relatively high prices for piped water.

The cases also suggest that system expansion is more likely when reform involves direct private investment (e.g., concessions and full privatization). However, in some cases, reform increased resources for investment in other ways. For example, reform increased the resources available from donors in Conakry. In Santiago and Abidjan, reform managed to increase investment by improving collection or investment efficiency, even though there was little direct private investment.

Even when there are many non-connected households, poor households were often credit constrained and, therefore, unable to pay the up front cost of a new connection. For example, the high infrastructure charge (between \$1,100 and \$1,500) in Buenos Aires meant that many poor households could not afford to become connected. In several cases, including in Santiago and Abidjan, this problem was tackled by subsidizing connection fees through the water tariff or general government revenues. Although this increased the benefits to non-connected households, it sometimes caused tension with existing (often middle-class) customers who then faced higher prices. Further, it was not always possible to finance investment through tariffs. For example, the initial customer base in Conakry was too low to finance system expansion in this way. An alternative strategy to make infrastructure charges more affordable is to provide the option of a financed payment plan – often, even when they are willing to pay connection fees, poor consumers are liquidity constrained.

Taxpayers

In several of the cases, the government heavily subsidized the water sector before reform (e.g., in Conakry, Lima, and Mexico City). Reform was intended to allow the government to reduce these subsidies in several cases (e.g., in Mexico City) and to relax constraints on investment due to restrictions on public borrowing in others (e.g., in Abidjan).³ Although taxpayers can benefit from reform when subsidies are high, since the costs of subsidies were spread over a large number of taxpayers while the benefits are heavily concentrated on particular groups or in particular regions, taxpayers often provide little support for reform in normal circumstances. However, in several cases, fiscal crises changed the governments' political calculations by increasing the cost of subsidization. Inflation also increased the desirability of reform, since it eroded cost coverage due to failures to increase nominal tariffs in line with inflation.

Workers

Workers and managers were often concerned about job losses following reform, especially when the public utility was overstaffed (see Figure 3 for information on staffing before reform). The influence that workers had depended upon whether workers were heavily unionized, whether politicians were heavily dependent upon worker (or union) support, and upon the broader credibility of the unions. For example, although the unions in Buenos Aires opposed private sector participation, they were unpopular with the population at large. Further, the unions had supported President Menem during his election campaign and had few attractive alternatives to switch their support to if he enacted policies they opposed. Consequently, they were unable to effectively oppose sector reform. To reduce opposition from workers, governments took steps to allow workers to benefit from reform in several of the case studies. For example, laid-off workers were given training and equipment to allow them to set up cooperatives to bid for public works contracts in Conakry. Similarly, in Buenos Aires, workers were promised a 10 percent ownership share in the new company.

³ This was also the main motivation for water privatization in the United Kingdom, where significant investment was needed to meet EU standards for water and beach quality.

Private Companies

A final group affected by reform were the private investors and companies involved in the sector. Although the major beneficiaries were often the big international companies that dominated the water sector, local partners and construction firms also were affected. Whether local construction firms gained or lost depended upon several factors. If reform increases the resources available for system expansion, local construction firms could benefit if they could bid for investment contracts. However, reform introduced a new competitor – the private operator – that had an informational or procedural advantage over its local competition. For example, the private

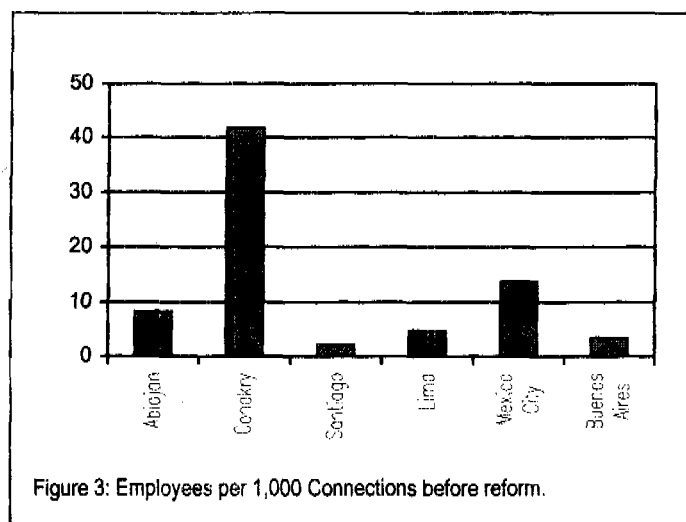


Figure 3: Employees per 1,000 Connections before reform.

operator in Abidjan could implement small investment projects without going through formal bidding. When the private operator is responsible for system expansion following reform (e.g., a concession or sale), the effect on local firms depends upon how much investment the operator contracts out compared to the public operator.

In addition to affecting private sector companies involved directly in the water sector, reform can have an indirect effect on other groups with an interest in sector expansion. In Santiago, construction companies benefited from reform because slow system expansion under the public company had made new house and office construction more difficult. Finally, when politicians use public works for patronage or kickbacks, giving the private operator control over investment can be politically costly and, therefore, might reduce the political desirability of reform.

Determinants of Reform in Case Study Cities

Although reform affected different groups in the different case studies, this variation alone does not always explain why reform took place in some cases but failed to take place in others.⁴ Conakry and Lima provide an interesting contrast, since the benefits of reform seemed large in both cities and the costs were similar:

1. The coverage rate was very low in both cities indicating that non-connected households could potentially benefit from increased coverage.
2. Prices were far below most estimates of long-run marginal cost, meaning that prices would have to be raised for the systems to become self-supporting. Although price increases would harm connected households, those who could afford to pay the higher prices might benefit from improved water and service quality – something that was a problem in both cities.
3. Although both utilities were overstaffed, unions were not strong, making opposition from workers less salient.
4. Both countries had low credibility with private investors by regional standards, making private involvement in the sector more difficult. This problem was especially severe in Guinea.

Notwithstanding these similarities, the outcomes were quite different. An ambitious reform was initiated in Conakry, while reform attempts largely failed in Lima (see Table 1). This was due to two significant differences between the two cities. First, although prices went up for connected customers, the political effect of the increases was different in the two cases. In Guinea, the government was not heavily dependent upon support from the small minority of relatively wealthy consumers who had connections and, therefore, the price increases were less important to its support base. In contrast, President Fujimori was heavily dependent upon the support of the urban poor in Lima – and increases planned for connection fees and the price of water reduced their benefits from a concession. Second, in Guinea, donor support for investment was dependent upon the introduction of private sector participation into the sector. In contrast, in Lima, donors provided support to rehabilitate the water and sewerage systems before the concession was implemented.

⁴ Support for and opposition to reform in each of the cities is summarized in Table 2.

Although the project was designed only to address the worst defects, it seems likely that this support reduced the pressure for change.

In Mexico City, the main motivations for reform were externalities due to overexploitation of the underground aquifer and the drain on public finances caused by sector subsidies. However, the political benefits from privatization were small, since coverage was high and service was reasonable for most users. Further, large price increases would have been needed to meet the high cost of bringing water to the city. The politically sensitive nature of water pricing meant that this could result in a political backlash, threatening the government's efforts to regain support in Mexico City. Under these circumstances, the government decided to implement a relatively minor reform with controversial items delayed until later stages, which have subsequently been repeatedly delayed.

In Santiago and Abidjan, the problems were far less pressing. The existing utilities were performing adequately and there was little danger of imminent collapse. In Abidjan, a macroeconomic crisis reduced public resources available for investment, threatening the long-term development of the sector. However, the crisis did not have an immediate impact on sector operations and, therefore, current customers would be unaffected in the near term. In Santiago, reform was initiated under the Pinochet government, which was ideologically committed to privatization. However, since the sector was performing reasonably well and the administration did not anticipate losing power, privatization was not a high priority. The Pinochet administration delayed water privatization and was not prepared for losing a referendum calling for new elections and, subsequently, the elections. The new government was ideologically opposed to privatization, but it did implement reforms in pricing and regulation. Consequently, it is not surprising that minor reforms were implemented in these two cities.

Finally, a concession was implemented in Buenos Aires, the city where the situation was the most conducive to reform. Because prices were above estimates of long-run marginal cost, price cuts for connected wealthy and middle class customers could be implemented at the time of reform. Further, it was hoped that private investment would allow poor and middle class households who were not connected to the system to become connected.⁵ The main opposition was from workers who, as noted above, were politically weak and had little leverage over the Menem administration.

Summary

For reform to be implemented, several conditions appear necessary. First, the reform must be politically desirable. This is more likely when the public operator is performing poorly and when government supporters benefit from reform – usually through improved quality, system expansion or reduced subsidies. Second, the reform has to be politically feasible. If the government relies heavily upon groups that will lose from reform through price increases or job losses, reform will be unlikely.

⁵ In practice, because connection fees were used to finance expansion of the secondary network, many poor households could not afford to connect, resulting in contract renegotiations.

Table 1: Planned and Implemented Reforms in Case Study Cities.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Situation before Reform	Lease ^a	Government Ministry ^c	Autonomous Public Entity	SOE	Fragmented management delegated to several municipal government agencies	SOE
Type of Reform – Planned	Lease ^b	Lease	Sale	Concession	Management Contract	Concession
Type of Reform – Implemented	Lease ^b	Lease	SOE	SOE	Service Contract	Concession
Sector Operations Prior to Reform						
Were prices significantly below estimates long-run marginal costs?	No	Yes	Yes	Yes	Yes	No
Estimated Coverage.	72% ^d	38% ^d	99%	75%	95%	70%
Service Quality	Cutoffs were rare. Water quality was good.	Frequent cutoffs, water was non-potable	Occasional Cutoffs	Frequent cutoffs, Low pressure	Poor water quality in some areas	Occasional cutoffs, Low Pressure
Was water consumption unsustainable?	No	No	No	Yes	Yes	No

^a Lease contract with some characteristics of management contract – compensation for utility was based upon projected consumption.

^b New lease contract gave private operator greater responsibility in planning and implementing investment and compensated private operator based upon actual consumption.

^c Formally, utility was autonomous agency. In practice, it operated as if it were part of the Ministry of Natural Resources and Environment

^d Includes customers who received water from standpipes and neighbors' connections.

Table 2: Political Support for Water Reform in the Six Cities.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Were Beneficiaries of Reform Important Supporters of Government?	Yes (but gains would be small). Main benefit of reform would be reduced need for public resources to finance investment.	Yes (but gains would be small). Supporters would mainly gain through beneficial effect on government finances	No. Main supporters (building and construction industry) supported the opposition ^a	Supporters would mainly gain (in medium term) from improved fiscal situation	Yes. Private companies who won contracts would be useful when government was raising funds for 1994 campaign.	Yes. It was hoped that suburban poor would benefit from increased coverage.
Were Opponents of Reform Important Supporters of Government?	No. Planned reform was quite modest and, therefore, there was little public opposition.	No. Urban elite with water connections were not important supporters of military government.	Yes. Workers were supporters of government ^a	Yes. Poor and middle income households would be hurt by price increases or high connection charges	Yes. Strong labor opposition to reform and urban consumers would be hurt by increased prices.	No. Although unions were important supporters of the government, they had low credibility and could not credibly threaten to switch support to opposition parties

^a Reform initiated under previous regime. The building and construction industry was an important constituent for previous regime.

B. EFFECT OF REFORM ON PERFORMANCE OF URBAN WATER UTILITIES

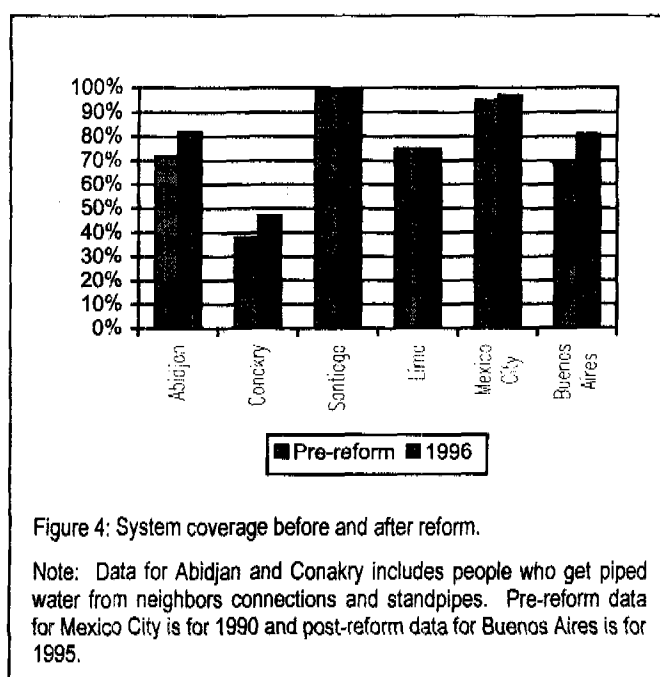
Introduction

In the late 1980s, the poor performance of state-owned urban water utilities in many developing countries encouraged governments to experiment with reform. This note summarizes results from a World Bank study that looked at reform attempts in large cities in six developing countries.⁶ In three of the reforms, the governments introduced private sector participation – a concession in Buenos Aires, Argentina; a lease in Conakry, Guinea and service contracts in Mexico City (see Table 3). In a fourth case, Abidjan, Côte d'Ivoire, the government increased the existing private operator's investment responsibilities. In the two remaining case studies – Lima, Peru and Santiago, Chile – the governments failed to introduce private sector participation as planned and, instead, implemented reform that left state-owned enterprises in charge of sector operations. This note discusses the outcomes and lessons of the different reform attempts, while a companion note discusses the political factors that influenced decisions to reform.

Outcome of Reform

In this subsection, we briefly discuss the effect of reform on several measures of sector performance: coverage, prices, productivity, and the overall impact on welfare. Details of the effect of reform on these, and other, performance indicators are included in Table 3. Shirley and Ménard (2000), and the individual case studies, contain far greater detail on performance outcomes in each city.

Coverage. Access in Santiago and Mexico City was already high before reform and, consequently, reform did not have a large effect on coverage in these cities (see Figure 4). In contrast, coverage in Buenos Aires and Conakry was relatively low, by respective regional standards, before reform. In both cities, private sector participation dramatically improved coverage. In contrast, reform of the public operator, without increased private sector participation, failed to improve coverage in Lima. Finally, although coverage was already high in Abidjan before reform, at least by regional standards, it increased significantly following the increase in private sector involvement in investment.



⁶ Considerably more detail on the situation before reform, the effect of reform, and the cost-benefit methodology is available in the case studies and the synthesis paper. The six case studies are summarized in Mary Shirley and Claude Ménard, 2000. "Cities Awash: Reforming Urban Water Systems in Developing Countries." Policy Research Working Paper, World Bank, Washington DC. The six case studies are: (Abidjan) Claude Ménard and George Clarke, 2000. "Reforming Water Supply in Abidjan, Côte d'Ivoire: A Mild Reform in a Turbulent Environment." Policy Research Working Paper 2377, World Bank, Washington DC; (Buenos Aires) Lorena Alcázar, Manuel A. Abdala, and Mary M. Shirley, 2000. "The Buenos Aires Water Concession." Policy Research Working Paper #2311, World Bank, Washington DC; (Conakry) Claude Ménard and George Clarke, 2000. "A Transitory Regime: Water Supply in Conakry, Guinea." Policy Research Working Paper 2362, World Bank, Washington DC; (Lima) Lorena Alcázar, Lixin Colin Xu and Ana Maria Zuluaga, 2000. "Institutions, Politics and Contracts: The Attempt to Privatize the Water and Sanitation Utility of Lima, Peru." Policy Research Working Paper 2478, World Bank, Washington DC; (Mexico City) Luke Haggarty, Penelope Brook and Ana Maria Zuluaga, 2000. "Thirst for Reform? Private Sector Participation in Urban Water Supply: The case of Mexico City's Water Sector Service Contracts." Policy Research Working Paper, World Bank, Washington DC; and (Santiago) Mary M. Shirley, Lixin Colin Xu, and Ana Maria Zuluaga, 2000. "Reforming the Urban Water System in Santiago, Chile." Policy Research Working Paper 2294, World Bank, Washington DC. These papers form part of a forthcoming book, *Thirsting for Efficiency*, from Elsevier Press.

Prices. In four of the six case study cities, prices before reform were set below long-run marginal cost before reform (see Table 3). In three of these four cities, Conakry, Santiago and Lima, prices increased dramatically following reform, bringing them closer to long-run marginal costs. It is important to note that these increases occurred in two cities, Santiago and Lima, where reform did not involve private sector participation. In Mexico City, prices remained below marginal cost, primarily because price increases would have been difficult due to political pressure. In the two cases where prices were set close to or above long-run marginal cost, increased private sector participation did not result in significantly higher prices. In fact, prices fell significantly in Abidjan.

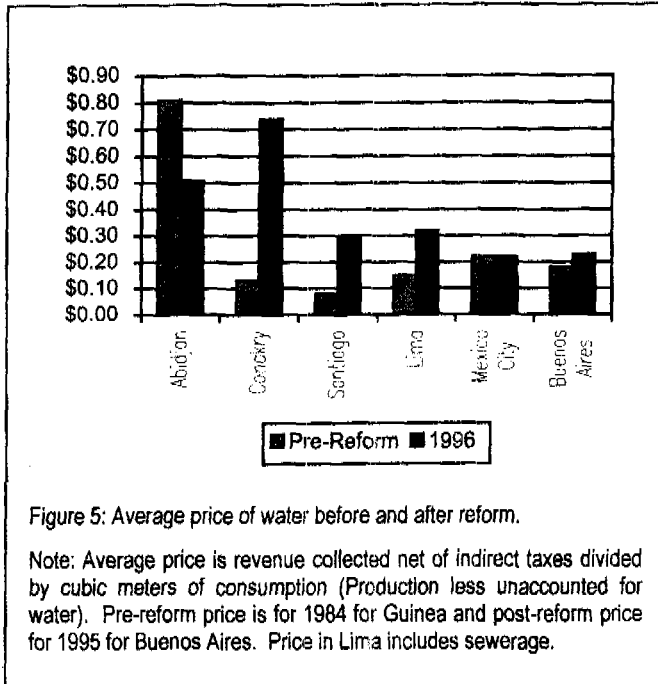


Figure 5: Average price of water before and after reform.

Note: Average price is revenue collected net of indirect taxes divided by cubic meters of consumption (Production less unaccounted for water). Pre-reform price is for 1984 for Guinea and post-reform price for 1995 for Buenos Aires. Price in Lima includes sewerage.

Strikingly, prices were far higher in the two African cities than they were in the Latin American cities. Although there were many reasons for the high prices in Africa, one important factor was that the governments of these countries consistently failed to pay their water bills in a timely manner. Since the government accounted for over 25 percent of sales in both countries, this affected prices greatly – in Guinea, for example, provisioning for unpaid bills accounted for over 20 percent of revenues from water sales between 1990 and 1996.

Labor productivity. Labor productivity improved in all of the case study cities following reform. The smallest change was in Santiago, which had the fewest employees per 1,000 connections before reform. The most dramatic improvement was in Conakry, where labor productivity was significantly lower than in any of the other case study countries before reform. However, productivity remained lower in Conakry than in any other country despite reform. In contrast, productivity improved only modestly in Mexico City, despite the fact that its pre-reform productivity was also very

low by regional standards.

Welfare gains from reform. In addition to these, and other, standard measures of performance, four of the case studies included detailed cost-benefit analyses, which assessed the magnitude and distribution of the gains from reform.⁷ Of these four cities, the largest (total and per capita) gains were observed in Buenos Aires, which implemented the most ambitious reform, transferring responsibility for both operations and investment to the private sector (see Table 4). However, the per capita gains from reform were also large in Santiago – a reform that did not involve an increase in private sector participation. We discuss reasons for the gains in Santiago, despite the absence of increased private sector participation, in the next section. Although the per capita gains in Conakry were smaller than in either Santiago or Buenos Aires, there were still significant, especially considering that per capita income is far lower in Guinea than in either Chile or Argentina. The gains from the reform in Lima, which also did not involve increased private sector participation, were smaller than in the other cases. Further, the total gains

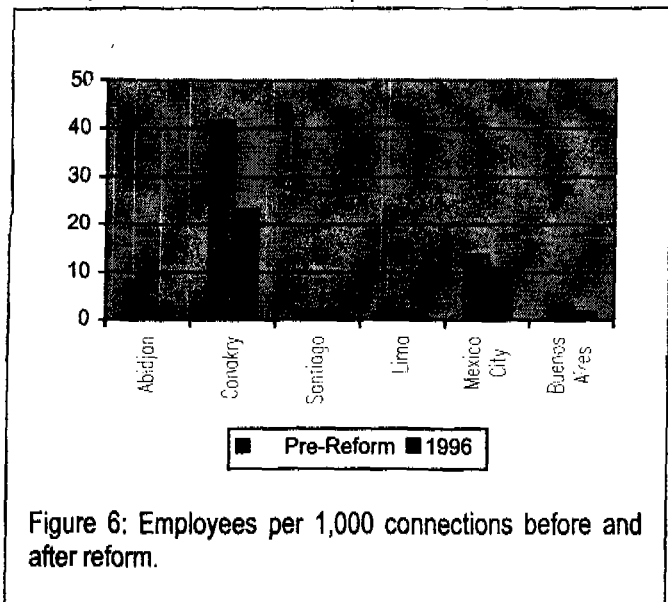


Figure 6: Employees per 1,000 connections before and after reform.

⁷ The methodology used to calculate the welfare effects of reform is described in Galal, Ahmed, Leroy Jones, Pankaj Tandon, and Ingo Vogelsang, 1994. *Welfare Consequences of Selling Public Enterprises: An Empirical Analysis*. New York, Oxford University Press. We were unable to perform the cost-benefit analysis for Abidjan and Mexico City due to insufficient data.

in Lima were less than one-fifth of the anticipated gains from a concession that, had it met the targets proposed in the concession contract.⁸ Consequently, even if a private operator had missed the targets by a significant amount, the gains from implementing the concession contract would have been larger than what was achieved under public ownership.

Lessons

Private Sector Participation.

Although private sector participation was not the only factor encouraging improved sector performance – and performance improved significantly in Santiago without it – private sector participation did result in improved performance, even in weak institutional environments. Most notably, the largest per capita welfare gains occurred in Buenos Aires (see Table 3), which awarded a concession contract to a private operator. Further, in the other city that introduced significant private sector participation at the time of reform, Conakry, post-reform performance was far better than could have been expected under continued public operation. Under private operation, capacity more than doubled, water and service quality improved, and coverage expanded. Although the weak institutional environment reduced the magnitude of the gains, it is hard to see how public ownership would have improved the situation. The largest problem in Conakry – the high price of water – was largely due to non-payment by private consumers and the government. However, the public utility had been even worse at billing and collecting before reform than the private operator was following reform.

The experiences in Lima, Mexico City and Abidjan provide further evidence of the benefits of private sector participation. As noted above, in Lima, the total gains from reform were far smaller than the anticipated gains from a concession contract. In addition, although there was insufficient data to perform a cost/benefit analysis for Mexico City, other performance indicators suggest that limited private sector participation in Mexico City resulted in only small gains (see Table 3). Finally, the continued strong performance of the private operator in Abidjan further demonstrates the long-term benefits of private sector participation, even in a weak institutional environment.

In summary, although private sector participation is likely to be more successful when regulation is strong and the government cannot renege on its contractual obligations, the case studies suggest performance gains are possible even under difficult conditions. Although private operators might find it harder to improve sector conditions under these conditions, public operators appear to perform even worse.

Regulation

Although performance improved in the cities that introduced significant private sector participation (i.e., Conakry and Buenos Aires), performance also improved significantly in Santiago, where private sector participation was not introduced. In this subsection, we discuss one plausible reason for this – improved regulation. Before plans to privatize the operator were abandoned, the Chilean Government introduced a regulatory model designed to provide credible regulation under private operation. The regulator was powerful, independent, politically insulated and guided by detailed laws that left little room for discretion (see Figure 5). Further it paid salaries that were above civil service norms and its staff was regarded as honest, professional and competent. Although these regulatory characteristics are important when the reform introduces private sector participation, the Santiago case study demonstrates the importance of strong regulation even when the operator remains state-owned.

Broadly speaking, there are at least two issues when designing regulatory institutions. First, the government should insulate the regulator from political pressure. This can be done in various ways, including making the regulator's revenues independent of the budgetary process (e.g., financing the regulator through sector fees), preventing government officials from firing the regulator except under clearly defined conditions, and making the appointment of regulators independent of the political cycle. Second, the government needs to design institutions to prevent private operators from "capturing" the regulator. Clearly defining regulatory procedures and opening regulatory proceedings to the public can reduce the likelihood of capture by making it harder for the private operator to put pressure on the regulator. Table 5 provides a brief description of regulatory institutions in each of the case study countries.

Although formal rules can protect a regulator from both political interference and capture, it is difficult to do this when there are few checks on arbitrary government action. For example, if the regulator can not rely upon judicial support for its decisions, the private operator will have little incentive to follow the regulator's rulings. Similarly, if the judiciary is dependent on the executive, regulatory independence might not be adequate protection against government expropriation. In several cases, the contracts tried to provide substitutes for weak domestic institutions. For example, the

⁸ See Alcázar, Xu and Zuluaga (2000).

private operator in Guinea could appeal to an international organization in disputes with the government. However, in the absence of an independent judiciary, international institutions cannot enforce decisions if they rule against the government. In practice, therefore, this was not an effective way of resolving disputes. Instead, the private operator chose not to use this mechanism and, disputes were resolved, or often not resolved, through informal negotiations between the government and the private operator.

Although, it is hard to design contracts and regulation to resolve problems created by weak institutions, the cases suggest some actions that can improve regulation even when it is difficult to restrain arbitrary government action or punish misbehavior by the private operator. In particular, institutions should be designed so that:

- i. The regulator can compel the private operator to provide relevant information.
- ii. Regulatory responsibilities and powers are not divided between competing agencies.
- iii. Regulatory procedures are transparent and are open to interested parties, including consumer groups.

Authority to compel the private operator to provide information. Informational asymmetries between the regulator and the private operator were a major problem in our case. All of the contracts we studied provided for the operators to report regularly on their performance and most had fines for failure to do so. Despite this, the private operators routinely failed to provide the information required in several cases. In Guinea, the private operator consistently failed to provide the public regulator with required information in a timely manner. Most notably, it failed to separate its accounts for regulated and non-regulated functions, despite contractual obligations to do so. This made it difficult to assess whether the large price increases in Conakry were allowing the private operator to earn monopoly rents.

The experience from our cases suggests that the contract between the private operator and the government should spell out informational requirements in detail and prescribe penalties for non-compliance. The information should allow regulators to judge performance on contractual agreements (such as new investment or quality of service). In addition, private operators should provide accounts that separate regulated activities (e.g., water supply) from unregulated activities (e.g., infrastructure projects implemented for the government). When the private operator is responsible for operations in several urban areas, accounts should be produced by city or region, allowing the government to assess how large cross-subsidies between regions are. Enforcing these rules would have been hard in some of the case study cities, but it would help if penalties for non-compliance were spelled out in detail and applied automatically. For example, price increases and contract renegotiations might be refused until the private operator complies with its obligations. In addition, in some of the cases, bank supervision missions were able to help regulators press for better information (e.g., in Guinea).

To be able to use this information to monitor and enforce the contract, the public regulator needs to be staffed with sufficiently skilled workers. In the case studies in this project, the regulator was adequately staffed only in Santiago (see Table 5). Attracting well-qualified workers can be difficult under civil service pay structures, especially in small, poor countries, where well-qualified personnel might not be interested in working for the public sector. Although it is difficult to solve problems related to human capital, the cases suggest several steps that governments can take to minimize them. First, regulators should be able to pay above usual civil service standards. Allowing the regulator in Chile to do this meant that it could attract essential personnel more easily. Second, regulators should be given well-defined and narrow responsibilities. In several cases, the regulators were assigned additional non-regulatory responsibilities, aggravating the shortage of human capital. For example, in Peru, the regulator was responsible for promoting and strengthening water companies, in addition to regulating them. In Guinea, the public enterprise responsible for monitoring the contract with the private operator was also responsible for planning and implementing investment. Third, by reducing regulatory discretion (i.e., by having well-defined procedures), countries can reduce the informational burden on regulators and the operator's motivation for pressuring the regulator. For example, the price setting procedure in Chile is relatively automatic and is detailed in law, leaving the little room for the regulator to tinker with the outcome.

Clear delineation of responsibilities. Even when regulators are politically independent, dividing regulatory responsibility between several agencies can lead to inefficient outcomes. The case studies suggest that problems caused by overlapping responsibilities are worse in weak institutional environments. In these situations, disagreements between competing government agencies delayed decisions and increased uncertainty for the operator, who needed to get permission from several agencies with different priorities and competing visions. When they were competing regulators, individual agencies' responsibilities changed over time as their political power rose or fell. This prevented regulators from building the skills needed to monitor the operator and impeded information flows. It is telling that the regulators who were unable to provide us with the information needed to perform the welfare analysis were in the two cities where public sector responsibilities were divided between several agencies (Mexico City and Abidjan).

Although conflict between public agencies was a problem in several case studies, the problem was most severe in Côte d'Ivoire, where several public agencies were responsible for different aspects of sector policy. At the time of reform, responsibility for supervising and monitoring investment, which was implemented and planned by the private operator, was transferred between government agencies. However, the old agency remained responsible for monitoring the contract with the private operator and negotiating tariff changes, powers that it used to interfere with investment decisions. The transfer, and the different skills and priorities of the two public agencies, meant that the private operator had to negotiate with two squabbling agencies. This, in turn, slowed sector development and created considerable tension. Although problems appear to have been resolved, at least partially, by the late 1990s, divided and overlapping responsibilities interfered with sector operations for close to eight years.

Since many World Bank projects involving private sector participation in the water sector include components designed to set up an independent regulator, task managers need to be aware of the problems created by divided regulatory responsibilities. In particular, although allowing the ministries and agencies responsible for the sector before reform to keep control of some aspects of sector policy might reduce opposition to reform, this can create problems in countries with weak bureaucracies. For example, a new regulator was created in Peru in preparation for private sector participation. However, existing agencies continued to be active in the sector.

Transparent procedures. Although none of the cases scored high on openness, the experience from developed countries suggests that transparent regulatory procedures, where interested parties, including consumers, have a carefully delineated role in regulatory decision-making, can reduce the likelihood of regulatory capture by the operator and make political interference more difficult for the government. When procedures are non-transparent, it is difficult for the public to assess whether price increases are valid. For example, in Buenos Aires, after revenue from charges for the secondary network were lower than anticipated, the company asked to renegotiate the contract. However, the regulator and the private operator failed to reach agreement due, in part, to partisan disagreement among members of the regulatory board. Ultimately, the impasse was broken through the intervention of two Federal ministries. The partisan debate, and the political settlement, contributed to public disillusionment with the concession and to a general sense that the public was not protected against arbitrary price changes.

One way to avoid these problems is to restrict the regulator's discretion. To the extent that the regulator follows well-documented and transparent procedures, the public will be able to assess the reasons for price changes. Although limits on regulatory discretion and transparent procedures will be unlikely to fully protect the company or consumers in weak institutional environments, it makes political intervention or regulatory capture by the private operator more obvious and increases pressure of the operator to comply with informational requirements.

Metering

Metering is usually justified by the observation that when the marginal cost of water is high, metering can encourage consumers to reduce waste. In several of the cases, most notably Lima and Mexico City, metering is probably justified for this reason alone. In the other cities, the cost of raw water was low and water consumption was below the sustainable level of abstraction. However, metering can be beneficial even when raw water is cheap and plentiful, as the experience in Santiago illustrates. First, it increases the information available to regulators and makes it easier to assess investment needs. Second, metering gives consumers control over their bills, reducing opposition to price increases and allowing consumers to reduce their bills by fixing leaks and curbing wasteful consumption. Finally, metering can increase price transparency, making changes appear less arbitrary. Although metering does not immediately eliminate non-transparent pricing, tariffs based on consumption can reduce it.

Competition

The high cost of pumping water long distances and laying pipes means that water distribution is a local business. Further, since duplicating costly pipe networks is inefficient, water supply is likely to remain a local monopoly. Therefore, it is not surprising that direct product market competition, other than tolerating water vendors (Mexico City, Abidjan and Conakry) and allowing self-supply (Abidjan and Conakry) was rare in the case studies. However, competition can be introduced in other ways – most easily through allowing bidding over contracts.⁹

Bidding was not widely used in the case studies. In Santiago and Lima, plans for introducing private participation were abandoned (at least temporarily) and public operators remained responsible for sector operations. In Côte d'Ivoire,

⁹ Another possibility is to encourage 'yardstick' competition. London Economics (1998), *Competition in Water*, Paper prepared Department of International Development, London, estimates that the minimum efficient scale is about 500,000 people.

where the private operator had been active for nearly 30 years, the government decided not to bid the contract, instead negotiating a 20 percent real price reduction with the existing operator. Further, reform reduced the amount of bidding for investment projects. Although the government remained responsible for financing investment (i.e., the contract was a lease not a concession), the private operator could implement most maintenance and small investments without having to follow formal bidding procedures. Several observers suggested that the private operator used this to break large investments into small parts and favored small investments over larger projects when planning investment.

In the other cases, the governments invited bids for the contracts, although competition was muted even then. One consistent problem was that only five large international companies were actively involved in bidding for large contracts at the time. Further, these companies often joined into consortia to bid for single contracts (e.g., four French firms joined into two consortia to bid for the contract in Conakry).

Renegotiation after the completion of bidding – a common problem in water contracts in developing countries – was also a problem in several cases. For example, the concession contract in Buenos Aires was awarded to the company that proposed the largest price cut. However, after failing to meet several investment targets, the private operator negotiated an agreement that raised prices and reduced the operator's contractual obligations, in return for lower connection charges. Although contract renegotiations may be inevitable, and can benefit consumers and the government as well as the private operator, they can lead to strategic bidding, where the private operator bids low anticipating future renegotiations.

Several steps can be taken to enhance competition. First, encouraging bidding will improve the regulator's information and can lead to reduced prices. Given that the market for contracts to operate water systems in developing countries is relatively thin, removing criteria for tender that restrict smaller or less experienced private operators might be beneficial. Breaking large systems into several smaller parts might allow smaller operators to participate, as well as allowing yardstick competition. Second, the government can reduce the likelihood of renegotiation by spelling out criteria for renegotiation in the contract. In addition, regulatory proceedings and contract renegotiations should be conducted as transparently as possible. If consumer groups are allowed to play an active role in renegotiations, charges of strategic behavior will be lessened. When renegotiations are conducted behind closed doors or bypass standard regulatory procedures, it will be difficult to convince skeptical observers that the partners are acting in the best interest of consumers.

Reducing non-payment by the government and other consumers

One of the largest problems in the African case studies was non-payment by the government. In both African cases, the governments, which accounted for over 25 percent of consumption, failed to pay their water bill consistently. Non-payment by the Government contributed to the high relative price of water in both African cases (see Figure 5). Although the private operator in Conakry could cut off non-paying agencies, in practice it chose not to, fearing retaliation. It is difficult to deal with non-payment by the government in weak institutional environments, but some steps can be taken. First, during contract negotiations, the government and the private operator can draw up lists of the agencies that can not be cut off for non-payment (e.g., hospitals) and those that will be cutoff automatically. Although the private operator might still be wary about cutting off public agencies, placing a list in the contract might reduce pressure to maintain service to all agencies. Second, in other infrastructure sectors, payment has been secured through international guarantees (e.g., from donors) or by making sources of funds such as oil revenues hostage to the agreement. Similar actions could be taken in the water sector. Finally, greater publicity about the burden that non-payment places on sector development could increase public pressure for government to meet its obligations.

Table 3: Performance indicators before and after reform.

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Situation before Reform	Lease ¹	Government Ministry ²	Autonomous Public Entity	SOE	Fragmented management delegated to several agencies of municipal government	SOE
Type of Reform	Lease ¹	Lease	SOE	SOE	Service Contract	Concession
Prices						
Price below long-run marginal cost before reform	No	Yes	Yes	Yes	Yes	No
Unaccounted for Water³						
Pre-Reform	13%	60% ⁴	34%	42%	47% ⁵	44%
1996	16%	50%	20%	36%	37%	34%
Service Quality						
Pre-reform	Cutoffs rare. Water quality good.	Frequent cutoffs, water non-potable	Occasional Cutoffs	Frequent cutoffs, Low pressure	Poor water quality in some areas	Occasional cutoffs, Low Pressure
1996	No Change	Water potable, cutoffs rare.	Improved pipe maintenance	Same	Same	Improved Water pressure Cutoffs reduced

¹ Before reform, lease contract with some characteristics of management contract – compensation for utility was based upon projected consumption. After reform, lease contract gave private operator greater responsibility in planning and implementing investment and compensated private operator based upon actual consumption. ² Formally, utility was autonomous agency. In practice, it operated as if it were part of the Ministry of Natural Resources and Environment. ³ Unaccounted for water (UFW) is the differences between volume of water distributed and water sold. It includes physical losses from pipe breaks and overflows and commercial losses from illegal use and unregistered connections. ⁴ Estimates of unaccounted for water varied between 35 and 60 percent. Based upon the experience since reform, we believe that the higher estimates were more reasonable. ⁵ Estimates varied between 37 and 47 percent.

Table 4: Welfare Effects of Reform in case studies

	Abidjan, Côte d'Ivoire	Conakry, Guinea	Santiago, Chile	Lima, Peru	Mexico City	Buenos Aires, Argentina
Year of Reform	1987	1989	1989	1992	1993	1993
Welfare Gains from Reform						
Total Domestic Gains (million 1996 US\$)		\$23	\$284	\$43		\$1419
Government		8	241	40		-169
Consumers		16	4	57		1388
Workers		0	39	-55		43
Domestic Investors		0	1	0 12		160
Gains per Capita (1996 US\$)		\$12	\$64	\$6		\$150

Table 5: Regulatory Characteristics after Reform

	Buenos Aires	Lima	Mexico City	Santiago	Abidjan	Conakry
Delineation of regulatory responsibility	Separate agency.	Separate agency but under same ministry as company.	Three municipal agencies regulate quality, contracts & bill collection.	Separate agency	Four supervisory agencies plan and manage investment, debt, and supervision of contractor	State enterprise regulates & decides investment.
Autonomy & insulation from political interference	Has budget autonomy, but under political board.	Has budget autonomy but no political insulation.	No autonomy or political insulation.	Regulator's autonomy protected by legal status. High political insulation.	No autonomy or political insulation.	No autonomy or political insulation.
Power, & if powerful, discretion.	High nominal power, but by-passed in contract renegotiations. Recent fines, pricing decisions overturned. High discretion.	Low power.	Low power.	High power but subject to appeal. Little discretion.	Low power.	Low power.
Staffing skills	Inexperienced but improving	Weak.	Weak.	Strong	Split among many agencies.	Very weak.

RCWSS/2-01/1.2


THE CHALLENGES OF MANAGING WATER AND SANITATION SERVICES IN AN AFRICAN CITY

Anthony Still, Johannesburg Water Company

1

Outline of Presentation

- Introduction - The Context
- Igoli 2002 and overview of Water & Sanitation
- Formation of the Utility
- Procure an Operator
- Outcome of the Bidding Process
- Process to form the Utility
- Funding challenges and issues for the Utility
- The role of the GJMC vis-à-vis the Water Utility
- Funding options for the Utility
- Potential Funding Structure for the Utility
- Conclusion
- Questions



2




Johannesburg Water

3

The Context


- Change in jurisdiction for Johannesburg
- One "Unicity"
- 217 Councillors / 11 Regions
- Executive Mayor



4

IGoli 2002

- Why - Financial and Organisational crisis
- Debt Restructuring successful
- Service arrears remain



5

IGoI 2002 (continued)


- Utilities - Trading companies
 - ➔ Electricity, Water & Sanitation, Solid Waste
- Agencies - Non trading companies
 - ➔ Roads and Storm Water
 - ➔ Parks and Cemeteries



6

IGoI 2002 (continued)


- Corporatised functions - Municipal business enterprises
 - ➔ Zoo, Civic Theatre, Bus Company, Property Company, Fresh Produce Market
- Sale of non-core Assets
 - ➔ Gas works, Rand Airport
- Core Council functions
 - ➔ Planning, community services, emergency services, etc.



7

Water and Sanitation


- Current structure
- Scale of business
- Problems
- Formation of Utility



8

Current Structure


- 10 Operating divisions
- Support services
- Revenue
- Financing



9

Scale of Business


- Bulk provider = Rand Water
- 8 000 km plus water reticulation
- 8 000 km plus sewer reticulation
- 70 reservoirs; 26 Towers
- 1 000 Megalitres per day
- R1.6 billion turnover
- 2 700 staff



10


The Problems

- Organisational dysfunction
- UAW over 40%
- Environmental requirements

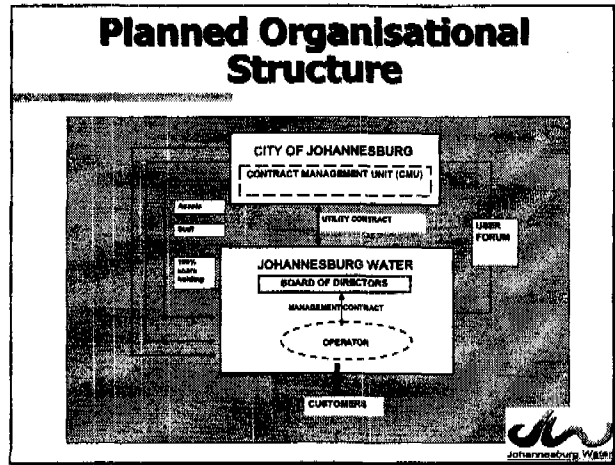


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Formation of the Utility




12



3

Why form a Utility?


- Accountability
- De-politicise
- Attract / retain good staff
- Investment



14

Why a Management Contract?


- Speed of change
- Ready made team
- Technology and experience



15

Why not another deal?


- Concession
- Sale
- Lease
- Context at the time
- Value creation



16

Work-Streams

- Form a Water & Sanitation Utility
- Procure a Management Contract (Operator)



17

Procure an Operator

- Council team
- Procure lead consultants - October 1999
- Procure other consultants - October/November 1999
- Issue pre-qualification tender - December 2000
- Pre-qualify - February 2000
- Criteria used



18

Pre-qualified Joint Ventures (J.V.'s)

- Acea (Italy), Nuon (Netherlands), Eskom Enterprises
- Azurix Services Ltd (UK/USA), Umgeni Water Services (Pty) Ltd, Zonkizizwe Investments (Pty) Ltd
- Northumbrian Water Group (UK), Water and Sanitation Services (Pty) Ltd (WSSA), Suez Lyonnaise des Eaux (SLDE) (France)
- Severn Trent Water International (UK), Taylor Woodrow SA
- Thames Water Overseas (UK), Black and Veatch (SA) Pty Ltd, Sirlus Development Foundation (Pty) Ltd
- Vivendi (France), Rand Water
- Water Corporation of Western Australia (Australia), Capital Formation Advisers (Pty) Ltd



19

Procurement (continued)

- RFP issued 5 June 2000
- Tenders received 1 September 2000
- Evaluation report by 6 October 2000
- Financials opened on 13 October 2000
- Advisory board / Council panel / Council committees
- Time Period - 23 October to 9 November 2000



20

Outcome of the Bidding Process

- Northumbrian Water Group JV
 - ➔ Preferred bidder
 - ➔ November 2000



21

Components of the Operator's remuneration

- Fixed fee (R25 million) - linked to delivery
- Incentive A (up to R20 million) for:
 - ➔ Human resource development
 - ➔ Capex delivery
 - ➔ Sewer overflows
 - ➔ Customer service
 - ➔ Plant downtime
- Incentive B - % of improved operating margin ("x" factor)



22

Bid Structure

- Two envelopes
- Technical / Financial: 60/40
- 75% hurdle on technical, with score retained
- Financial "x" factors
 - ➔ Northumbrian Water JV = 0.18%
 - ➔ Vivendi-Rand Water JV = 1.25%
 - ➔ Thames Water JV = 5%
- Why so aggressive?
- Implications
- Johannesburg contract vs future RSA water deals



23

Process to form the Utility

- Transfer staff, systems, assets and liabilities
- Going concern: Section 197 of Labour Relations Act
- Revenue function
- Utility contract - Service Delivery Agreement
- Sale of Business Agreement
- Incorporation documents
- Tax status
- Corporate Governance and Regulation



24

Challenges ahead

- People and culture
- Collective bargaining / pensions
- Partnership and control
- Informal settlements
- Financing



25

Financing Aspects



26

Funding Challenges and Issues for the Utility I

- The implications of the following Acts/Bills upon the Utility:
 - ➔ Policy Framework for Municipal Borrowing and Financial Emergencies
 - ➔ Municipal Finance Management Bill, 2000
 - ➔ Municipal Systems Bill, 2000
 - ➔ Water Services Act, 1997
- The availability of long term SA govt. subsidies for revised tariff structure and new capex



27

Funding Challenges and Issues for the Utility II

- The tax status of the new Utility and the investment return required by the GJMC
- The GJMC can delegate its responsibility to borrow to a municipal entity i.e. Utility
- Does not preclude the Utility's ability to borrow in its own name
- Exiting internal loans and the apportionment of existing external debt to the Utility
 - ➔ Total allocation of internal and external debt as at 30 June 1999 = R1 053m (US\$138m)



28

Funding Challenges and Issues for the Utility III

- Potential opportunity to re-finance the external debt on more favourable terms
- But, perceived lack of credit standing of the GJMC & the Utility with respect to commercial banks (despite credit ratings)
- No indicative credit rating available for the new Utility (at present)
- Allocation of the R550m grant from the SA Department of Finance to the GJMC for restructuring in terms of IGoli 2002/2010
 - ➔ seen as the biggest restriction on autonomous borrowing of the Utility



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Funding Challenges and Issues for the Utility IV

- Treasury function for GJMC and the Utility initially handled by current treasury outsourcing firm
 - ➔ Specialised Outsourcing (Pty) Ltd
- Utility will reserve its rights to explore alternative funding structures and funding sources to achieve:
 - ➔ lowest cost of funds
 - ➔ financial independence



30

The role of the GJMC vis-à-vis the Water Utility

- Issuer of the exclusive licence for the Utility (30 year period)
- Regulator of the Water Utility
- Sole shareholder in the Utility (over the 5 1/2 year Management Contract)
 - ➔ Equity
 - ➔ Shareholder loans
- Borrower on behalf of the Utility (initially)
- Approval of the business plans of the Utility



31

Funding Options for the Utility

- Lending on the strength of the GJMC Balance Sheet and credit rating
- Lending on the strength of the Utility Balance Sheet and credit rating (?)
- Lending on a Project Finance basis - secured by the Utility's cash flows and limited recourse legal and financial covenants



32

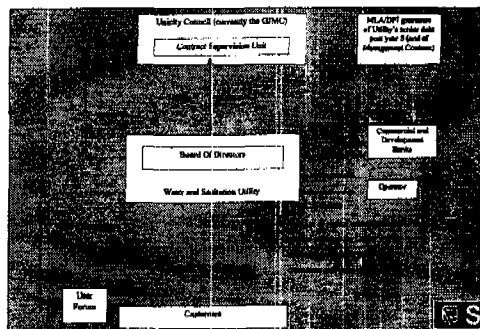
Funding Options for the Utility (continued)

- Lending on a Project Finance basis
 - ➔ focus on the Utility's free cash flows (ten years)
 - ➔ determine the debt capacity of the Utility with reference to annual cash flows and cover ratios
 - ➔ secure appropriate legal contracts including the Bulk Supply Agreement with Rand Water
 - ➔ enhance lenders security by means of a cession of the water off-take contracts from major customers to senior lenders?
 - ➔ credit enhancement and financial participation of local and international DFI's and MLA's (including stretch-out guarantee at end of year 5)



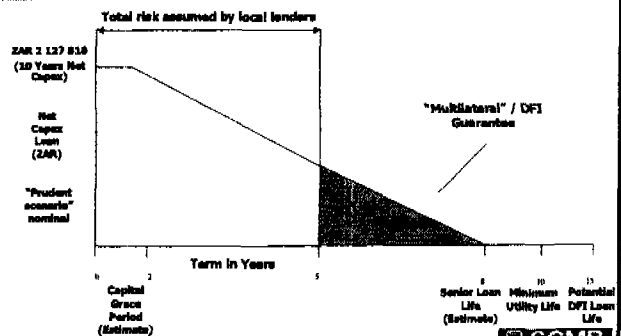
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Potential Funding Structure for the Utility



34

Proposed Stretch-Out Guarantee from a Multilateral Agency or Development Finance Institution to Senior Lenders



35

Structured Finance Options

- Proposed establishment of Utility affords a number of structuring opportunities
- Structuring process provides additional credit enhancement tools for the Utility e.g. security deposits
- Scope to structure existing/new debt at a lower effective cost of borrowing within sustainable debt levels (subject to credit approval of banks)
- Structures can be tailored to the specific requirements of the Utility/GJMC



36

Conclusion

- International and local finance should be available for the Utility - subject to credit ratings, appropriate legal contracts and negotiations with the GJMC/Utility
- Northumbrian Water Group JV and its financial/legal advisers to assist the Utility in its negotiations with the GJMC and Specialised Outsourcing (Pty) Ltd
- Business Plan for the Utility to be updated
- Utility financial models & scenarios to be updated
- Tax status of Utility to be confirmed
- Clarification on borrowing powers of Utility



RCWSS/2-01/1.3

*Panel Discussion: Role of the Major Stakeholders in the Reform Process***MANAGEMENT OF WATER SUPPLY SYSTEMS IN SMALL PERI-URBAN COMMUNITIES**

Joshua Kalebu, Private Entrepreneur, Uganda

Introduction

Managing water on a small scale requires close vigilance of all resources and practices. Every drop of water wasted is money lost. Failure to deliver water to a client is lost revenue. Down time due to power cuts or system breakdown is revenue lost. So at the end of the month, the volume sold, billed and collected, determines whether you will operate the following month. In other words efficiency of the whole operation is very important to the small operator.

How to accomplish efficiency

There was a general belief that anyone can manage water. But to have a successful operation there has to be a high level of efficiency which may only be achieved by a professional team. I have therefore come to appreciate that there is a definite science to successful management of a water system of any size for a community of any size. This science centres on efficiency which is necessary from the planning stage through the technical and commercial operations.

Let us look at some areas where efficiency is of great importance.

Equipment: When determining the type of equipment a system is to have, it is critical to consider both the technical as well as the economic and practical aspects of the alternatives. The size of pipe main that one uses could either be too large and therefore too costly or too small and will fail to deliver service to the community. Technical sense may require a 300mm water main, but common sense may dictate only a 50mm line. The type and number of pumps in a system is very important. During the initial life of a project the cost of energy could be about a third up to a half of the revenue if the design of the of the pump station was poor. Consider a project, which has three sump pumps in series, all of them having the same power rating. Only one pump would be sufficient thereby saving on the energy costs. Then there is the question of whether you need a sump or whether you could pump directly into storage. Whereby you would save by eliminating all the extra sumps and pumps and consultants charges.

Workers: Cheap things are usually not cheap. When you decide to employ cheap labour, you will pay the price. A person who is not trained in marketing will most likely not increase new connections. Without new connections, the volume consumed will stay low and therefore you will have low revenue. Efficiency in collection will only be attained by a professional and well trained team of employees who will realise the need to come up with innovative ways of improving collection. One needs to evaluate all positions with a somewhat skewed approach from that which is traditional. For example, utilities supply and management was traditionally a man's world. But provision of water and energy in the home especially in Africa has customarily been done by women. Could it be that you would obtain a higher efficiency of operation when you employ women? Could a social worker be a better area manager than an engineer? Could a woman perform better as a commercial manager? Could you achieve better service when you use a technician where you would traditionally use a plumber?

Technology: Determining the threshold of the time and type of technology is critical to efficiency. Thirty years ago in most peri-urban areas in Africa a hand-pumped well was quite adequate and somewhat efficient. Each well would serve about fifty users per day. So the pump would last about three years which is about 60,000 jerry cans of water. Now in the same village, a poorer quality pump is installed to serve a community of three hundred and fifty users per day. Within half a year the pump has already pumped the 60,000 jerry cans and reached its maximum life. This technology is now definitely unsuitable for this community. Unfortunately, most communities are about that size in Africa. Therefore, how we select our technology is important. What about technology selected for management of the water in a community?

Our communities have accepted provision of water to within a maximum of 300 metres. They can afford to pay reasonable charges for water used on a pay-as-you-draw basis. The service is not yet affordable nor is it well marketed and financed for most people to have house connections. Among the several technologies available to meet the pay as you go practice are the following;

- Kiosks with attendants
- Yard taps
- Coin actuated dispensers
- Pre-pay metered kiosks

There are advantages and disadvantages with all the systems above. Kiosks with attendants and yard taps can be installed at low cost. However the operators are only available about 30% of the time. Additionally as they collect the money from customers they use the money hoping that the time the bill is delivered they will have obtained it from somewhere so they most often fail to meet the bill payments. The coin actuated dispensers and the pre-pay metered kiosks have a high initial installation cost. However they provide a better management system and are open to users about 90% of the time. The pre-pay meter system assumes that the user will have enough money to purchase their bulk water supply in advance.

The Business Plan: A sound business plan has to be prepared and followed explicitly. Simply having a plan showing that the operation cost will break even with revenue and make a little profit, may not be desirable. The life of the project has to be taken into account as well as major repairs. Within five years the three sump pumps will start failing and will need replacement. The wells may start silting within the first year. It would be desirable to have included these projections in the business plan. Planning should make every effort to address all the details of the operation. Following a good plan will result in a profitable and efficient operation and management of any size of water system.

THE ROLE OF MAJOR STAKEHOLDERS IN THE REFORM PROCESS - LABOUR PERSPECTIVE

Jern Adee, Public Services Workers Union, Ghana

INTRODUCTION

Reform processes of privatisation and restructuring have arisen primarily due to the soaring demand for utility services and the incapacity of government and the public sector to provide adequate service due to myriad reasons.

Trade Unions, who are players of a traditional role of protecting its workers against exploitation and improvement of their living standards, also create a platform for workers to express their views on social, economic and political matters affecting society. This latter role identifies them as organs of civil society in a state.

The need therefore for their involvement in a process of change or reform is imperative.

This presentation attempts to give a summary of some key factors for facilitating a smooth reform process.

The Reform Policy

- Must be clear.
- Is it politically or economically motivated?
- How does it improve the existing service, e.g. accessibility, quantity, quality, affordability.

Involvement of Stakeholders

- What form does it take? Is it consultation or participation
- Which state and level does it take place?
- Who are the target groups?

Transparency of Process

- Setting up of committees for process, i.e. bidding, negotiating contracts, pre-qualification.
- Free flow of information through e.g. public programme, workshops workplace meetings.
- Study tours.

Contract and Agreements (For Operations)

- Right to Union activities.
- Participation in ownership (workers to buy shares).
- Training and job creation through development.
- Outsourcing of jobs to work gangs of retrenched staff.
- Probation clause on retained staff.
- Protection of consumer welfare against monopoly power, tariff regulation etc.

Negotiation of Severance

- Identifying and determining staff for retrenchment.
- Adequate compensation for retrenched staff.
- Who pays severance and how.

Post Reform

- Monitoring of operations performance.
- Ensure adherence of agreement for work gangs.
- Continued encouragement of such groups.

Water Sector Restructuring -- The Ghanaian Experience

- *Organised labor was not involved in the formulating of the reform policy by the government.*
- *Information flow initially was scanty and there was apprehension and insecurity amongst workers for fear of massive retrenchment due to privatisation.*
- *The workers led by the leadership of Public Utility Union, made a series of representations to the Section Minister.*
- *A study tour to Abidjan was organised for some union leaders, workers, and the Parliamentary Select Committee on Water. This was followed by another study tour to some countries in the West Coast.*
- *Seminars were organised for the workers by the restructuring Secretariat on the reform, and some token representation was given the Union on a sub-committee of the Advisory Board on the reform.*
- *The Secretariat has been involving the union in its workshop programmes of late. This has availed to the Union information on the reform process.*
- *The Union however is still demanding a representation on all committees to enable effective participation.*

ADDRESSING THE INTERESTS OF THE POOR AND VULNERABLE GROUPS IN THE REFORM PROCESS

RCWSS/2-01/2.1

WATER AND SANITATION SERVICES FOR LOW INCOME URBAN COMMUNITIES: ENSURING SERVICE DELIVERY THROUGH PRIVATE SECTOR SERVICE OPERATORS

Ms. Mukami Karuki, Water and Sanitation Program - Africa (WSP-AF)

1

Trends

- 50% of Africa's population urban by 2020
- Informal settlements already represent 40-70% of the urban population
- Urban poverty is deepening, and growing
- Negative health impact evident - cholera, water borne disease
- Growing movement towards PSP
- The bulk of future utility customers will be low income urban households

2

Policy does matter!

- Government's objective of "WATER FOR ALL" is not supported by clear strategy and legislation.
 - ✓ Ensure that sectoral policies and legislation mandates PO to work in unplanned, informal areas,
 - ✓ Remove exclusivity/monopoly clauses in legislation and allow for alternative service providers
 - ✓ Require PO to establish outreach service with adequate resources (inhouse or outsourced skills/capacity to reach out to the poor)

...this policy void has translated into lack of MANDATE for utilities to serve the poor...

3

A seat at the table.....

- Informal or illegal status of low income communities is a long term and complex problem but requires immediate action
 - ✓ enable PO to obtain moratorium/temporary licence (20 years) for delivery of services to the poor
 - ✓ reform technical/service standards to enable PO focus on outputs rather than inputs
 - ✓ allow PO to innovate, (e.g. condominal systems, above ground networks, flexible systems)

...illegal or informal status is a key constraint to financing... requires special arrangements to reduce investment risk...

4

Running the last mile.....

- Most poor households obtain water through a variety of intermediaries (neighbour, landlord, vendor, standpost, private source, etc)
- ✓ require PO to lower the entry/connection costs by allowing for financing/subsidy, installments
 - ✓ enable PO to increase access to network (infilling, extensions, multiple (individual) taps in yards)
 - ✓ enable PO to count group connections towards performance targets
 - ✓ innovate to get around controls on consumption
- ...financing connection costs is difficult for daily wage earners...

5

If you can't beat them...

CBOs/NGOs and the small scale private sector are primary service providers to the poor - they fill a gap the utility cannot meet in the short term and reach customers utilities are often unable to (demand responsive)

- ✓ allow PO to count alternative providers in targets)
- ✓ regulator or PO to legitimise and regularise activities of alternative providers (contracts, leases)
- ✓ PO to offer better terms and conditions (bulk rates, smaller deposits, shorter billing periods)
- ✓ fora for dialogue/discussion (vendors association)
- ✓ PO to incorporate SSPs in service delivery plan

...join them - partnerships/co-op/competition....

6

Missing the target....

The primary targets of social blocks, lifeline tariffs - the poor are often not connected...and buy second or third hand...in small quantities

- ✓ adapt block tariffs to accommodate multiple family dwellings, domestic vendors, etc (volumetric tariffs)
- ✓ introduce bulk rates for non-conventional retailers (domestic vendors, tanker filling stations)
- ✓ encourage PO to allow for smaller payments made more frequently (billing/collection cycle, prepayment)
- ✓ enable PO to offer credit for inhouse/yard Installations

... low income consumers require different tariff structure, payment systems, service arrangements

7

One size does not fit all.....

Low income communities - a complex market for water and sanitation that requires a range of options/service levels

- ✓ require PO to offer a range of services that respond to demand from different segments of the market
- ✓ allow PO to enable communities cross subsidise internally (contributions according to ability)
- ✓ allow a range of providers to compete in the market (regulatory framework for all - water quality focus)
- ✓ require PO to introduce customer based approach

....and leads to self initiated action - illegal connections signal unmet demand?

8

Sanitation Is health....

■ Utilities are often best placed to facilitate financing of improvements in on-site sanitation, hygiene...

- ✓ require joint management of water and sanitation (management contracts, leases, dumping permits)
 - ✓ enable PO to finance sanitation/hygiene education through water supply (surtax for on site facilities), public financing
 - ✓ require PO to carry out consumer awareness programs -commercial and hygiene aspects
-shift public financing for sewers...to latrines? hygiene?

9

Key Lessons - good practice

- Specialised Peri-urban Units and Targeted Policies (Lusaka, Abidjan) -focus on poor, dedicated resources
- Financing mechanisms - taxes, surtaxes (Abidjan, Dakar, Ouagadougou-fund for on-site sanitation)
- De-regulation of emptying services and outsourcing of management of public toilets- (Tanzania, Ethiopia)
- Legitimising and enabling regulation of Alternative Service Providers - contracts, leases, licences (Abidjan, Kumasi, Accra)
- Vendor/Tankers Associations (Kano, Abidjan, Accra)

10

Key constraints....1

In two thirds of the 9 case study countries stakeholders identified these constraints.....

- Low government priority/lack of political will
- No dialogue/poor coordination among actors
- Inadequate skills/knowledge about serving the poor
- Inadequate cost recovery (poor revenue collection) - constrains services delivery, extensions to new areas
- Inadequate community or user consultation/ participation in choosing service levels/options

11

Key constraints....2

- Poor organisational/management skills of CBOs, Small Scale Providers
- Limited community-utility interface, no fora for regular dialogue with un-connected users
- Lack of awareness among users - of hygiene, proper use of facilities
- Poor planning/physical layout and limited upgrading
- Uneven/Inequitable distribution of services/limited access to some communities
- Limited access to financing for extending services to the urban poor

12

Key roles for Governments

- develop sample tools for working with alternative providers (training materials, financial management, agreements) - *Regulator*
- undertake tariff reforms to ensure that poor are adequately understood and accommodated - *Government*
- ensure the development of performance targets (baseline information, delivery modes) for services to LICs - *Transaction advisors*
- prepare business/Service Delivery Plans (payment, actors) that incorporate specific activities to extend services to LICs - *PO*
- establish in-house or out-sourced Outreach Services Function/ Consumer services for reaching consumers in LICs - *POs*
- develop knowledge of requirements in LICs by carrying out consultations, demand assessment (WTP) - *Transaction Advisors*

13

Conclusions

more effort is needed to

- Reform policies and laws to include the poor, accommodate other service providers
- Develop regulations and guidelines for reaching the poor
- Integrate management of Water and Sanitation
- Incorporate hygiene and health education initiatives into core business
- Avail financing and improve access for consumers/SSIPs

"Cholera spreads when the water we drink is contaminated with human faeces. This happens when sanitation is poor, and people go to the toilet in or near the river or other water sources, or if they wash infected babies' nappies in the water. The faeces of people infected with cholera contaminates the water that people drink and use for household purposes."

Introduction

The provision of clean water and adequate sanitation services are inextricably linked and foundational to human health and well-being. The challenge faced by Africa and specifically South Africa is the provision of clean water and adequate sanitation services to all our people, regardless of race, gender, culture, ethnic origin, class, disability, HIV/AIDS status or any other inherent human characteristic.

South Africa inherited a multitude of water laws from our apartheid past. Apartheid was an inefficient racial spoils system. Under the apartheid regime, access to and distribution of water rights were determined on a racially discriminatory basis. This is because distribution of water rights was linked to land. The colonial and apartheid era was characterised by an oppressive programme of land dispossession. That programme gained momentum at the turn of the century when legislation was introduced which aimed to prevent 85% of South Africans, that is black South Africans, from acquiring, holding or disposing of immovable property². Under apartheid, distribution of water took no account of the basic needs of the nation's people as a whole. Consequently, in South Africa today, there are still approximately 8 million people without access to safe water and over 20 million without access to adequate sanitation³. According to the October Household Survey of 1999, 60% of rural South African households have no access to sanitation facilities at all. Among the historically privileged population, infant mortality rates are about 20 per thousand. In some water deprived rural areas we lose 370 infants per 1000 births. The reform of South Africa's water law was hence a process of national importance - a life and death matter - and may be said to have been mandated as long ago as June 1955, when at the Congress of the People, held at Kliptown near Soweto, it was declared that "all apartheid laws and practices shall be set aside".⁴

The Water Law Review process commenced with a detailed review of all South African water law. In March 1995, a document entitled "You and Your Water Rights"⁵ was published by the Department of Water Affairs and Forestry. It constituted a "call by the Government for everyone to contribute to this historic process, from the boardrooms of industry to the local village development forum"⁶. The document sought to assist the public in making meaningful contributions and sought to raise certain questions about the water laws which were inherited by South Africa's new democracy from the apartheid past. That document not only sought to set out the main principles and provisions of the then existing legal structure but also contextualised these against their origin and historical development.

In April 1996, the Fundamental Principles and Objectives for a new water law in South Africa was published for comment. These principles were designed to focus attention on the primary areas of water resource management requiring urgent reform and transformation. The principles are simple and concise statements which would constitute a framework or paradigm for the development of a new detailed water policy and a new national water statute. In April 1997, Cabinet

¹ Extract from the October 2000 Newsletter of South Africa's Sanitation Task Group ("SANTAG"), available at www.santag.org.za.

² See for example the Native Land Act 27 of 1913

³ White Paper on a National Water Policy for South Africa, Department of Water Affairs and Forestry, April 1997, page 9

⁴ See "The Freedom Charter", www.anc.org.za/ancdocs/history/charter

⁵ You and Your Water Rights, South African Law Review - A call for Public Response, March 1995, Department of Water Affairs and Forestry

⁶ Ibid. p1

approved the White Paper on a National Water Policy of South Africa⁷ which was a comprehensive and detailed document addressing resource management and water supply. The White Paper identified key proposals which would guide management of water in South Africa and served as an official democratically developed and approved guideline for the drafting of the new National Water Act.

The White Paper on a National Water Policy for South Africa became the beating heart of the water law review process. South Africa's new water policy embodies "our national values of reconciliation, reconstruction and development so that water is shared on an equitable basis, so that the needs of those without access to water in their daily lives are met, so that productive use of water in our economy is encouraged, and so that the environment which provides us with water which sustains our life and economy is protected"⁸.

On 9 February 1998, South Africa's then Minister of Water Affairs and Forestry, Professor Kader Asmal MP, expressed his exhilaration and pride at being able to share with millions of South Africans "a transformative, constructive, forward looking piece of legislation"⁹ - The National Water Act 36 of 1998 ("the Act"). On the same occasion, Professor Asmal confirmed that the Act was drafted with the vision that "one day all of South Africa's people will be served with water"¹⁰. The United Nations reported in its annual Human Development Report 2000, that approximately three million people have benefited from the South African Government's water supply programme.¹¹

On 19 December 1997, the President of the Republic of South Africa, Mr Nelson Mandela, signed into law the Water Services Act, 108 of 1997 ("the Water Services Act"). The Preamble to the Water Services Act states that –

"RECOGNISING the rights of access to basic water supply and basic sanitation necessary to ensure sufficient water and an environment not harmful to health or well-being;

ACKNOWLEDGING that there is a duty on all spheres of Government to ensure that water supply services and sanitation services are provided in a manner which is efficient, equitable and sustainable;

ACKNOWLEDGING that all spheres of Government must strive to provide water supply services and sanitation services sufficient for subsistence and sustainable economic activity;

RECOGNISING that in striving to provide water supply services and sanitation services, all spheres of Government must observe and adhere to the principles of co-operative government;

ACKNOWLEDGING that although municipalities have authority to administer water supply services and sanitation services, all spheres of Government have a duty, within the limits of physical and financial feasibility, to work towards this object;

RECOGNISING that the provision of water supply services and sanitation services, although an activity distinct from the overall management of water resources, must be undertaken in a manner consistent with the broader goals of water resource management;

RECOGNISING that water supply services and sanitation services are often provided in monopolistic or near monopolistic circumstances and that the interests of consumers and the broader goals of public policy must be promoted; and

⁷ Department of Water Affairs and Forestry, April 1997

⁸ Ibid, p2

⁹ Opening remarks by Professor Kader Asmal MP, then Minister of Water Affairs and Forestry, at the presentation of the National Water Bill to the South African parliament's portfolio committee for Agriculture, Water Affairs and Forestry on 9 February 1998.

¹⁰ Ibid.

¹¹ See www.undp.org/hdr2000

CONFIRMING the National Government's role as custodian of the nation's water resources..."

Accordingly, the objects of the Water Services Act include –

- (a) "the right of access to basic water supply and the right to basic sanitation necessary to secure sufficient water and an environment not harmful to human health or well-being;
- (b) the setting of national standards and norms and standards for tariffs in respect of water services;
- (c) the preparation and adoption of water services development plans by water services authorities;
- (d) a regulatory framework for water services institutions and water services intermediaries;
- (e) the establishment and dis-establishment of water boards and water services committees and their duties and powers;
- (f) the monitoring of water services and intervention by the Minister or by the relevant Province;
- (g) financial assistance to water services institutions;
- (h) the gathering of information in a national information system and the distribution of that information;
- (i) the accountability of water services providers; and
- (j) the promotion of effective water resource management and conservation."

A Right to Water and Sanitation?

The distribution of South Africa's water across the population is even more unequal, measured in class, race and gender terms. More than half of the country's raw water is and has historically been used for white dominated commercial agriculture, of which half is considered to be wasted due to poor irrigation techniques and inappropriate crop choice. A further quarter is used in mining and industry. Around 12% of South Africa's water is consumed by households, but of that amount, more than half goes to white South Africans and less than a tenth is consumed by all black South African households.¹² Minimal water access is one reason why black South Africans suffer by far the highest form of mortality and water related disease rates in all of Africa in relation to per capita GDP.

Water-borne sanitation is available to approximately only one third of black South Africans, and excessive amounts of water (typically 13 litres per flush) are used in virtually all middle and upper class areas, predominantly by white South Africans. Mass pit latrines in urban and peri-urban areas remain factors in the spread of faecal bacteria. Faecal pollution is a problem in many urban areas due to most low income households' inadequate sanitation.

The Constitution of the Republic of South, Act 108 of 1996, guarantees every person the right to have access to sufficient food and water and obligates the State to take *reasonable* legislative and other measures, within its *available resources*, to achieve the *progressive realisation* of the right (Section 27). Further, section 24 enshrines the right to an environment that is not harmful to human health and well-being.

The Water Services Act, in section 3, stipulates that everyone has a right of access to basic water supply and basic sanitation, that every water services institution must take *reasonable measures* to realise these rights and every water services authority must, in its water services development plan, provide for measures to realise these rights.

¹² Bond, P and Ruiters, G: *Drought and Liquidity Water Shortages and Surpluses in Post-Apartheid South Africa*, p10 (Unpublished).

The National Water Act operationalised the water access rights provided for in the Water Services Act by providing for a national water reserve, superseding existing riparian rights to water (based on land related water sources such as boreholes or river access). The basic human needs reserve provides for the essential needs of individuals served by the water resource in question and includes water for drinking, for food preparation and for personal hygiene.

The National Environmental Management Act, 107 of 1998, further codifies the right of South Africans to environmental justice, recognising that many inhabitants of South Africa live in an environment that is harmful to their health and well-being, that everyone has the right to an environment that is not harmful to his or her health or well-being, that the State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities and inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices, and that sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.

However, discourse on whether access to water and sanitation are enforceable fundamental human rights, continues. In 1998, the United Nations Panel on Water declared that water should be paid for as a commodity rather than be treated as an essential staple to be provided free of cost.¹³ The Water Services Act stipulates that the Minister of Water Affairs and Forestry may, with the concurrence of the Minister of Finance, from time to time prescribe norms and standards in respect of tariffs for water services, taking into account, among other factors, the socio-economic and physical attributes of each area. The Department of Constitutional Development (now the Department of Provincial and Local Government) correlated the services to be provided (whether a communal tap or a house/yard tap; whether pit latrines or flush toilets) to households' ability to pay for such services. For example, the Department of Constitutional Development provided yard taps and pit latrines to those households who earned less than R800 per month. The Department of Constitutional Development also established pre-paid metering systems, which could result in the cut off of water supplies in the event that a consumer does not pay.

The World Bank's water expert, John Roome, advised the Department of Water Affairs and Forestry to ensure a credible threat of cutting water services to non-paying customers and to promote the wholesale commodification of water.¹⁴ Bond and Ruiters note that during 1997 water cut-offs rose dramatically – a ten-fold increase in water cut-offs in Gauteng alone. Water cut-offs during 1998 continued and included entire townships, as well as users who had paid for water services. In 1998 the newly enacted National Water Act stipulated in section 36, that "[n]on payment of water use charges will attract penalties, including the possible restriction or suspension of water supply."¹⁵

Do South Africans then actually have an operative fundamental core right to water and sanitation? In October 2000, the South African Constitutional Court handed down its first significant judgment concerning the enforcement of socio-economic rights.¹⁶ The Court, in enforcing section 26 (the right to have access to adequate housing) and section 28(1)(c) (the right of children to basic nutrition, shelter, basic health care services and social services) emphasised that neither of the socio-economic rights gave the claimants a right to shelter *immediately*. Nonetheless, after evaluating the Government's housing programme in force, the Court held that the programme fell short of what was required by the Constitution – the provision of basic shelter to those desperately in need, such as women and children. Despite Government's provision of a significant number of houses since 1994, the desperate situation of the claimants demanded some sort of short-term housing, even if such housing failed to fulfil standards of durability, stability and habitability. The core right to shelter had to be given effect to.

Applying the Court's decision to another socio-economic right guaranteed under the Bill of Rights – water – it is submitted that South Africans do have an operative right to water and sanitation services, especially having regard to the current

¹³ *The New York Times*, 22 March 1998.

¹⁴ *Bond, P and Ruiters, G*, op.cit, p18.

¹⁵ *Ibid*, p18.

¹⁶ *Government of the RSA and Others v Grootboom and Others* (CCT 11/00 – Unreported).

alarming rate at which cholera cases are being reported. At the Mvula Trust Conference on Women, Water and Sanitation held on 7 August 2000,¹⁷ Ronnie Kasrils MP, the National Minister for Water Affairs and Forestry stated that his department will in future allocate at least 10% of its budget to sanitation, amounting to R80 million annually. Further, the Department of Water Affairs and Forestry recognises that the provision of sanitary services is a departmental priority, noting that water should be affordable and possibly even free to those who cannot afford to pay. The Durban Metropolitan Council recently inaugurated a policy of a lifeline provision of water to meet social needs. A lifeline tariff provides citizens in a locality with a minimum standard of water supply to maintain family health. In Durban this has been set on the basis of the first six kilolitres per household being free. The Government is examining this model of cross-subsidisation for the purposes of implementing on a national scale.

Under the banner of the Reconstruction and Development Programme ("RDP"), the Department of Water Affairs and Forestry in 1995 began implementation of a household sanitation programme, which commenced with establishment of a National Sanitation Task Team. In June 1996 the Draft National Sanitation Policy White Paper, was published calling for the establishment of provincial sanitation task groups. In the South African province of KwaZulu-Natal, the KwaZulu-Natal Sanitation Task Group ("SANTAG"), equipped with resources and personnel devoted to developing proactive sanitation strategies engage in numerous education and training initiatives such as advocacy, technical support and awareness promoting health and hygiene awareness as a vital part of an integrated sanitation programme. In the remote northern region of KwaZulu-Natal, Ingwavuma, the Ingqalabutho Sanitation Project has resulted in the construction of 2000 toilets. The project is managed and run by the communities by mean of sanitation committees. These committees have successfully lobbied for funding from the Mvula Trust, a non-governmental organisation and AusAid.

In the Northern Cape Province approximately 338 000 people are believed to not have access to adequate sanitation services. The Department of Water Affairs and Forestry's Household Sanitation Project in this province recently resulted in the building of 540 toilets. District Councils provided at least R2 890 000 for dry sanitation facilities which are cost effective and affordable to households.¹⁸

A total of 613 dry sanitation systems have been built by householders themselves. The dry sanitation system implemented is maintained by the household. No water is used and the system has no working parts. Consequently, the maintenance cost is very low. The household does not have to buy any chemicals to maintain the toilets and the running costs are thus affordable. The Project can be replicated by any other organisation. Community to community visits are regularly arranged whereby one community learns from the other.

The success of the programme can be contributed to the integration of services. Role players involved in the success of the programme included the Department of Water Affairs and Forestry, the Department of Health, the Department of Local Government and Housing, District Council officials, Local Authority officials and most importantly community members.

Equity and the Right to Water and Sanitation

Women, in particular, have been targeted as beneficiaries of Government's water policy both in terms of representation on water project steering committees and in terms of easing the burden placed on them in the rural areas to provide water to their households.

Mjoli has argued conclusively that water and sanitation projects are more sustainable when women have ongoing responsibility for their operations and maintenance as they are more committed since they are adversely affected by project failure¹⁹. Water policies, thus have to have a gender-based approach to ensure sustainability.

¹⁷ See the August 2000 Newsletter of SANTAG at www.santag.org.za

¹⁸ See www.impumelelo.org.za/projects/hse_san

¹⁹ See Hemson, Dr David, *Accelerated Delivery? Rural Women and Water*.

The provision of water to rural households and the maintenance of family well-being relate closely to gender issues in South Africa as they do elsewhere. Over 75% of the very poor households are African households in the rural areas and most are headed by females. Rural mothers (and grandmothers), and their daughters, invariably take exclusive responsibility for bringing water to the family and for family health. The Lund Committee noted that rural areas, which is where most poor women and children are, there is little easy access to such basic services as running water in the home, sanitation, and fuel. Water and fuel collection are tasks undertaken almost exclusively by women and girls, with more than three quarters of a day on average being spent on water collection.

It is well established that households headed by a young women in rural areas are the poorest and even those households headed by elderly women receiving pensions are very poor. South Africa's children are concentrated in rural areas: of the households with children less than 5 years old, 69,5% are in the rural areas, often living in conditions of desperate poverty.

Rural schemes such as that established in rural Ndatshana in KwaZulu-Natal charges R8.00 for a kilolitre of water with charges starting from the first litre. The amount that people in the Durban Metropolitan area get free, costs the rural poor R48.00. There are indications that other rural projects charge considerably more, making clean water unaffordable to the desperately poor. The problem is partly one of scale.²⁰ In an urban setting there are sufficient customers for the local authorities to apply cross subsidies within the area of supply. Such groupings of rich and poor don't always exist in rural areas. Water Projects are regarded as stand-alone projects, that is, they are relatively small scale and include a range of incomes ranging from a small number of modest middle class to large numbers of poor and very poor. In some projects there is still a partial basis for cross-subsidisation; the contribution of the many in an area towards operating and maintaining could provide sufficient of a surplus to carry the widow or the otherwise desperately poor. However, cross-subsidisation has almost been eliminated by the use of water dispenses which are operated by electronic cards which are charged at the offices of the water service provider and works on a pre-paid basis.

This is ideal for the operator who sees a steady cash flow before providing water supplies, but destroys entirely the idea of a lifeline tariff to provide the citizens of the rural area with guarantee provision of an essential minimum for public health. In addition, it eliminates the possibility of cross-subsidisation: the only basis for support for the poorest in the community is by another family handing over their card for needy family to use. This accelerated form of delivery, often on the basis of a public private partnership such as BoTT (Build, Operate, Train and Transfer) in which a private consortium builds and operates a project until its eventual transfer to a local authority, places the burden for supply of clean water directly on the poor. Some time ago, Kadar Asmal stated that nowhere in the world did the very poor have to pay for their water, but this is presently the South African experience²¹. Officials do argue that they are not charging the community for water, but for a service. AqaManzi, the BoTT Consortium in KwaZulu-Natal, have undertaken a study which found that the African woman takes about four hours a day to fetch water and that closer access had cut this to one hour.²²

The rural poor tend to deal with the problem of the water tariff by returning to traditional sources of water, this restricts the consumption of safe water. During the wet season in rural Ndatshana, when springs are flowing nearby the household, the use of piped water declines, but in the dry season when women may have to walk 3 km to additional sources, the use increases.²³ In rural Africa alone, 40 million hours was lost each year on collection of unsafe water from distant sources. Over 250 million people – half of Africa's population – are without access to portable water.²⁴

When projects fail the women have to carry the burden of maintaining the health of their families and undertake the extra labour of returning to traditional sources of supply. In the case of the Mfundweni Water Project in Umzimkhulu, where the water project has broken down, the community felt that the running water of the river would be safe, but they now

²⁰ See Hemson, Dr David, Ibid.

²¹ See Hemson, Dr David, Ibid.

²² See Hemson, Dr David, Ibid.

²³ See Hemson, Dr David, Ibid.

²⁴ See Hemson, Dr David, Ibid.

experience many stomach upsets and the children are often sick.²⁵ The women have to walk long distances to and from the river everyday.

Duncker puts forward strategies to empower women in water delivery and makes the following points:

- that women should be more involved in planning and operations as part of a strategy to build a more equitable society;
- that their involvement should be more than labour, and include access to resources, decision-making and management;
- that care should be taken not to overburden women and automatically perpetuate and reinforce the traditional roles of women; and
- that a gender approach to development needs to be worked out.²⁶

A conference of practitioners, people representatives, and NGO's in the field of water delivery recently met to demand a lifeline tariff of 50 litres per person per day free of charge. If this was implemented with household connections and accompanied by vast acceleration in the delivery of rural sanitation, the burden on women would be reduced and the survival and continued health of our rural children will be much improved.²⁷

Beginning in 1995, municipalities were encouraged to contract out infrastructure-related services to the private sector using what were initially called "public-private partnerships" (PPPs), for which in 1997 the Department of Constitutional Development issued guidelines and helped establish the Municipal Infrastructure Investment Unit based at the Development Bank of Southern Africa. This was followed by the Department of Constitutional Development's Draft Regulatory Framework in 1998, in which PPPs were renamed "municipal service partnerships" (MSPs) and characterised as a variety of risk-sharing structures within public-public, public-private and public-NGO/CBO partnerships. By December 1998, the SA Local Government Association and the Department of Constitutional Development had negotiated the Municipal Framework Agreement with unions.

Beginning in 1996, the Department of Water Affairs and Forestry's Community Water Supply and Sanitation programme commissioned several dozen extremely small-scale, rural PPPs, known as "build-operate-train-and-transfer contracts", involving NGOs and some private firms. But serious problems soon emerged – unsustainability, lack of consumer affordability given cost recovery pricing policy, poor technical design, poor community control functions, mismatched NGO/private-sector roles and expectations, systematic inconsistencies with neighbouring government-subsidised water schemes, and lack of training and transfer prospects – that by 1999, the concept was in many areas evaluated as a "failure" with respect to implementation by the Department Water Affairs and Forestry the Mvula Trust.²⁸ According to even BoTT proponents "[t]he gaps between practice and policy have to be addressed head on lest the policies be invalidated".²⁹

The effects of privatisation bear most radically on the poorest in the community; there is widespread evidence of more cut-offs in service and generally a harsher attitude towards lower income "customers". Water in Britain is a case in point. Water and sewerage bills have increased by an average of 67 percent between 1989/90 and 1994/95, and during roughly the same period the rate of disconnections due to non-payment by 177 percent.³⁰ The inflexibility and hostility which often characterised public utilities attitude towards non-payment has, over the same period, been replaced by an emphasis on pre-payment meters and "self-disconnection" as public goods have been commodified. Pre-payment metering is greatly

²⁵ See Hemson, Dr David, Ibid.

²⁶ See Hemson, Dr David, Ibid.

²⁷ See Hemson, Dr David, Ibid. See also the August 2000 Newsletter of SANTAG at www.santag.org.za

²⁸ Bond, P and Ruiters, G, op.cit, p32.

²⁹ Ibid, pp. 32 and 33

³⁰ Ibid, p34.

advantageous to companies as the problem of poorer customers is avoided, there is a continuous revenue stream in advance of consumption, less of a "political" problem in confronting disconnections, and better form of debt recovery.³¹

A Consultative Water Law Reform Process

South Africa's Constitution³² requires that the National Assembly (or National Parliament) must facilitate public involvement in its legislative and other committees, must conduct its business in an open manner, and must hold its sittings and those of its committees in public³³. The constitutional enjoiner, a fundamental requirement of participatory democracy, underpins the consultative approach adopted throughout the Water Law Review process. This commitment to proper and effective consultation, consensus- and nation-building has not been abandoned with the enactment of National Water Act. As will be described more fully below, the National Water Act itself commits national government and all the institutions established by the Act to pursue, proper and effective consultation and public participation throughout the process of the implementation of the Act and its enforcement as national law.

The constitutional imperative of participatory democracy and law making was translated into a number of strategies and objectives which were effected throughout the course of the Water Law Review process. The consultation process was designed to broaden the involvement by all stakeholders - communities, civic-based-organisations, non-governmental organisations, environmental interest groups, water users, women, labour, industry and Government. This was in pursuit of the goal of ensuring that the activities of the Department of Water Affairs and Forestry and the catchment management agencies (to be established under the National Water Act) would enhance and complement the principle of sustainability - a key feature of the National Water Act. The Minister of Water Affairs and Forestry and the Department of Water Affairs and Forestry sought to forge real partnerships with all water users as part of the overall new and democratic approach to water resource of management.

The consultation process was "not an isolated initiative designed to appease or pacify stakeholders. It was deemed necessary to provide an environment that was conducive to people to unlock their potential and to play a role in the social and economic development of South Africa and to remove any constraints placed upon them by pursuit of selfish needs of supremacy and political ambition"³⁴. From the outset of the process it was clear that national government, the public trustee of the nations water resources, could not assume all responsibility for implementing the objectives of the National Water Act. Participatory democracy and the need to fulfil the fundamental rights and values enshrined in the Constitution required a change in approach to governance - that is democratic governance which through strong political leadership ensured greater access to decision-making and responsible participation by all players in the water sector. A dedicated effort was made to find common solutions to different needs and expectations.

The Water Law Review process commenced with a detailed review of all South African water law. As noted above, in March 1995 a document entitled "You and Your Water Rights"³⁵ was published by the Department of Water Affairs and Forestry. It constituted a "call by the Government for everyone to contribute to this historic process, from the boardrooms of industry to the local village development forum"³⁶. The document sought to assist the public in making meaningful contributions and sought to raise certain questions about the water laws which were inherited by South Africa's new democracy from its apartheid past. That document not only sought to set out the main principles and provisions of the

³¹ Ibid, p34.

³² The Constitution of the Republic of South Africa Act 108 of 1996

³³ Section 59, of the Constitution of the Republic of South Africa Act 108 of 1996

³⁴ Speech by the Minister of Water Affairs and Forestry, Professor Kader Asmal MP, Minister of Water Affairs and Forestry of the law of the National Water Forum, 29 April 1999

³⁵ You and Your Water Rights, South African Law Review - A call for Public Response, March 1995, Department of Water Affairs and Forestry

³⁶ Ibid. p1

then existing legal structure but also contextualised these against their origin and historical development. In addition, a comparison of the legal frameworks of certain selected countries was presented.

Arising from the call for a public response to the review of South Africa's water law, in April 1996 the *Fundamental Principles and Objectives for a New Water Law in South Africa*, was published for comment. These principles were designed to focus attention on the primary areas of water resource management requiring urgent reform and transformation. The principles are simple and concise statements which would constitute a framework or paradigm for the development of a new detailed water policy and a new national water statute. They were developed, through consultation, by having regard to, for example, constitutional shortcomings noted in the existing law; the urgent need for a modern and more appropriate need to water resource management in South Africa; and an acknowledgement of the need to establish founding principles and objectives for the development of new policy and law that would be accessible to the nation's people.

For example, principle 1 provides:

*"the water law shall be subject to and consistent with the Constitution in all matters including the determination of the public interest and the rights and obligations of all parties, public and private, with regards to water or taking cognisance of existing uses the water law will actively promote the values enshrined in the Bill of Rights"*³⁷

After undergoing a number of revisions following widespread formal consultative meetings (culminating in the National Water Law Review Conference held on 17 and 18 October 1996) these principles, upon being finalised, were approved of by Cabinet in November 1996³⁸.

In April 1997, Cabinet approved the White Paper on a National Water Policy of South Africa which was a comprehensive and detailed document addressing resource management and water supply.

Drafting of the National Water Act commenced in July 1997. This exercise was preceded by a number of policy discussions lead by the Policy and Strategy Team of the Water Law Review process, as well as the various task teams formed to consider specific topics and issues in respect of the draft National Water Act. International expert assistance sponsored by, among others, the FAO and the Finnish government made an important contribution to the formulation of the first draft of the National Water Bill. At least 36 workshops were held throughout the country on the draft National Water Bill. These workshops were designed to give stakeholders an opportunity to understand the objectives and goals of the proposed legislation and to afford an opportunity to stakeholders to express their fears, concerns and comments. In addition, the Minister of Water Affairs and Forestry and members of the policy and Strategy Team held direct consultations with various interest groups and representatives of business, labour agriculture and communities. The draft Bill was issued for public comment in early August 1997, once a stage had been reached when the Bill was in a form suitable for meaningful public comment³⁹. Following a 3 day retreat with the Minister of Water Affairs and Forestry, the Policy and Strategy Team and the Drafting Team of the Water Law Review process, it was decided that a final draft of the Bill would be prepared for tabling in Parliament (following Cabinet approval) in 1998.

Upon receipt of comments from the public and experts, as well as comments generated from within the Department of Water Affairs and Forestry and other provincial and national government departments, the draft National Water Bill was revised. Further drafts were generated during the course of October to November 1997. Inputs from certain sectors, for example, labour, agriculture and business and various directorates within the Department of Water Affairs and Forestry and other government departments were received during the course of October to November 1997. The Bill, in draft form was also discussed widely during this period at a number of workshops convened in South Africa's nine provinces before

³⁷ Ibid. p11

³⁸ *Fundamental Principles and Objectives for a New Water Law in South Africa*, Department of Water Affairs and Forestry, February 1997

³⁹ That is, once sufficient policy guidance had been obtained from the Policy and Strategy Team and the Ministers approval in respect of the release of the Bill had been confirmed, a fourth draft of the National Water Bill was released for public comment on 5 September 1997.

formal structures such as the National Economic Development and Labour Advisory Council, sectoral interest organisations, organised local government and with political parties.

In December 1997, a smaller drafting team was constituted in order to ensure that the National Water Bill was consistent, coherent and constitutionally compliant. It was recognised as an imperative that the Bill be sensitive to other water-related and environmental legislation in that it was capable of integration with, for example, the supply objectives of the Water Services Act as well as the policy initiatives, underway in South Africa, for the development of a system of integrated pollution control. The National Water Bill was considered by a Joint Cabinet Subcommittee on 14 January 1997 and subsequently approved of by Cabinet on 21 January 1998. Thereafter the Bill was referred to the State law advisors for certification in accordance with South Africa's parliamentary rules. It was presented to the National Assembly's Portfolio Committee on Agriculture, Water and Forestry on 9 February 1998. The Portfolio Committee held public hearings on the Bill during the course of March and April of 1998. Thereafter, the National Water Act was finally approved of by Parliament and was assented to by the President in August 1998⁴⁰.

The direction taken in the White Paper on the National Water Policy and the National Water Act to water management was also influenced by consultation at the international level. A number of significant international events dealing with water management were attended by the Minister of Water Affairs and Forestry and members of the Department of Water Affairs and Forestry. These included: the UN Conference on the Human Environment (Stockholm 1992), the International Drinking Water Supply and Sanitation Decade Launch (Mar del Plata, 1997); the World Conference on Water and the Environment (Dublin, 1992); the UNCED Earth Summit - Agenda 21 (Rio De Janeiro, 1992), and the first World Water Forum of the World Water Council (Marrakesh, 1997). These events highlighted South Africa's international obligations as far as management of shared water resources are concerned. Accordingly the National Water Act makes specific provision for international water management institutions and South Africa's regional and international obligations.

The Way Forward

In a letter in the Cape Times of January 10, 2001, Mike Muller, Director-General, Department of Water Affairs and Forestry, asserts that the Department has been the first to state that providing water will not contain cholera on its own. We also need to provide hygienic sanitation facilities and critically, to train behaviour, to reduce the risks that people face from diseases such as cholera. He instances this commitment by references of the Northern Cape Household Sanitation Programme, an award-winning pilot project of the Department which addressed poverty by implementing affordable sanitation measures that can be maintained by the household. This programme has been mentioned above.

The acknowledgement of sanitation as a priority area is however undermined by the low status given both in the Department of Water Affairs and Forestry, where the national head of sanitation occupies only a Deputy Director position, and also by the Health, Education and Provincial and Local government departments, which have not given sanitation the attention it has long deserved. Financial allocations for sanitation activities are relatively small and even these have not been fully spent by the provinces. While it may be true that sanitation is not amongst the numerous pressing priorities of the poor, it is nonetheless both a felt need and a central component of a comprehensive strategy to reduce the heavy burden water-related disease imposes on the majority of South Africans. Indeed, authoritative research has suggested sanitation provision may be the most critical element in the water-sanitation-hygiene awareness triad necessary to combat diarrhoeal disease (of which cholera is but the most dramatic). Further, without adequate sanitation, huge

⁴⁰ The legislative process in respect of the Bill is that defined in Section 75 of the Constitution of the Republic of South Africa Act 108 of 1996. That process requires that when the national assembly passes a Bill (other than a Bill amending the Constitution or a Bill which affects the legislative competencies of South Africa's 9 provinces), the law must be referred to the National Council of Provinces which must either pass the Bill, pass the Bill subject to amendments proposed by them, or object the Bill. Once the national assembly passes the Bill it must be referred to the President for consent. It should be noted that a specific provision is made in the National Water Act that it will only come into operation upon a date determined by the President. That provision was incorporated in order to ensure that all the necessary implementation structures were in place prior to the National Water Act becoming operative. The majority of the provisions of the National Water Act accordingly came into operation on 1 October 1998 with the remainder of provisions coming into force on 1 October 1999.

expenditure on new water schemes is badly compromised, as faecal contamination of communal water sources, which are still used for high volume activities such as washing and bathing, continues unabated.

Regarding commodification of water, the most critical feature of privatisation, however, has been that cross-subsides are rooted out after privatisation: those who need costly help have to pay for these services directly themselves. The early PPPs suggest a penchant for long-term management contracts, entailing "delegation" of defined municipal functions for a ten, twenty-five or thirty year period. They include the operation, rehabilitation, maintenance, customer services and expansion of assets, which are, however, still owned by the municipalities. Contracts are flexible, allowing for the company to extend or upgrade facilities but with municipal or non-company finances. Unlike concession contracts, they involve less greenfield investment (such as extension of services to townships) and hence far lower risks for the successful bidder.⁴¹

Companies like Water and Sanitation South Africa (WSSA, a Lyonnaise des Eaux/Group Five joint venture) promised to "render an affordable, cost effective and optimised service, implement effective consumer management" and ensure that customers are "willing and able to pay for services, while maximising revenue collection". Yet in practice, in the town of Stutterheim, water services were instead characterised by WSSA's failure to serve any of the 80% of the region's township residents and mass cut-offs of water by the municipalities of township residents who could not afford payments.

Water supply cannot be separated from sewerage and roads. There is bound to be confusion, dislocation and diminished accountability. By fragmenting responsibility for road works, refuse removal and sanitation, residents will have to visit different company offices to register complaints, increasing the bureaucratic hurdles for consumers.

⁴¹ Bond, P and Ruiters, G, op.cit, p35.

RCWSS/2-01/2.3
Abstract**TOWARDS SUSTAINABLE FINANCING OF WATER AND SANITATION SERVICES IN AFRICA**

Sam Kayaga, Consultant, Uganda, Teun Bostma, Director, Streams of Knowledge, IRC,

Chris Njiru, WEDC, United Kingdom

Despite major efforts made in the drinking water sector, cost recovery is still one of the major obstacles towards sustainable drinking water supply in Eastern Europe and Developing Countries. Moreover, the challenge of cost recovery for sanitation has yet to be met. The situation in Africa is in many respects not different from that in many countries outside the continent and there is opportunity to share experiences with a view to integrating cost recovery for drinking water with financial strategies for waste water management and sanitation. An important challenge is to develop guidelines and tools that can be used under different specific social and economical conditions, but that are based on commonly accepted principles.

Decades of conceptual evolution, directly or indirectly linked with cost recovery, have highlighted some of these basic principles, such as the fact that users should pay for the service of water and that communities and local authorities should have a role in managing water supply and sanitation services. An important point of departure is the gender and equity perspective laid down in the World Water Vision. It appears clearly though that there are no blue prints generally applicable to all situations and contexts, and there are however certain factors which can contribute to sustainable cost recovery, and which can be adjusted / adapted to local circumstances. This paper addresses some of these factors or principles of sustainable cost recovery based on research carried out by IRC and by IHE/WEDC showing there are alternative financing options to be further explored in the context of both utility and community or municipality managed systems. For instance research on service differentiation and pricing in Mombasa shows that it is possible to improve cost recovery while still meeting the water requirement of the poor.

The paper also presents some highlights and conclusions of a recent expert meeting on cost recovery in Delft, The Netherlands.

Based on analysis of key issues and constraints, the participants concluded that:

- There is a need to better map experiences, past and ongoing;
- There are several promising research projects and probably many interesting case studies to build on;
- There is a urgent need to clarify concepts and vocabulary for better information of decision makers, planners, managers and various stakeholders;
- Cost recovery needs to be addressed more holistically; interdisciplinary approach is essential to realistic solutions;
- It is possible and necessary to better use both urban (including small towns) and rural experiences to address cost recovery in different contexts;
- Cost recovery relating to other aspects: sanitation, water resources management (also waste water) is a big gap;
- Synergy between different types of actors and stakeholders working on this issue is very desirable.

Follow-up of the meeting includes the development of a strategy to address cost recovery issues at the international level through the re-establishment of the international working group on cost recovery and the organisation of a wider international event. Other priorities identified were the development of guidelines and tools for managers and planners (utilities, co-operation), and reaching a wider target group in the context of capacity building for cost recovery in demand responsive environment.

RCWSS/2-01/2.4

**PUBLIC — PRIVATE PARTNERSHIPS IN THE WSS SECTOR:
RISKS AND OPPORTUNITIES FOR UTILITY EMPLOYEES**
Javier Jarguila, World Bank Institute

1

Outline

- Rationale for Public-Private Partnerships
- Risks
- Opportunities
- Process Issues

2

How water utilities go bad

3

How does the sector perform?

Performance indicators

Area	Target	Reality
<i>Service coverage</i>		
Urban population w/access to safe water	100%	70%
<i>Utility Management</i>		
Employees/1000 connections	2-5	>10
System losses	15-20%	>40%
<i>Commercial</i>		
Accounts receivable (days)	30-60	>180
<i>Financial</i>		
Cost recovery	100%	1/3

4

Potential Benefits of PSP

- Operating and financial efficiency
- Technical and managerial expertise
- Additional sources of capital
- the bottom line: better and increased coverage of services

5

Forms of private participation

Private O&M Private O&M + financing

- A continuous range of public-private partnerships, with varying degrees of private risk-taking
- Hybrid or intermediate forms

6

Austria	France	Guinea	Cote d'Ivoire	USA
Chile		France	France	UK
Germany		Spain	France	
USA		Poland	Spain	
			Argentina	
			Turkey	

1993

signed
proposed

7

Austria	France	Colombia	Argentina	Chile
Ghana	West Bank, Gaza	Cote d'Ivoire	Australia	Germany (non)
Germany	Trinidad	Czech Rep	Bolivia	UK
India	USA	Hungary	Brazil	USA
Mexico	Venezuela	Guinea	China	Thailand
Russia/F.	Jordan	France	Colombia	
Tunisia	Georgia	Mozambique	France	
USA	Armenia	Poland	Cabon	
Algeria		Senegal	Germany	
Bangladesh		Spain	Indonesia	
		Ghana	Mexico	
		Guinea-Bissau	Malaysia	
		Niger	Morocco	
			Philippines	
			Slovenia	
			Spain	
			Thailand	
			Turkey	
			USA	
			Greece	
			Lebanon	
			Jordan	
			Nigeria	
			Panama	
			Tunisia	
			India	

1998

signed
proposed

8

Ingredients for successful PSP

- Strong political and stakeholder commitment
- Financial viability
- Credible processes
- Enabling legal and regulatory environment

9

Risks

- Loss of employment security
- Loss of jobs...
- Severance packages to mitigate risks

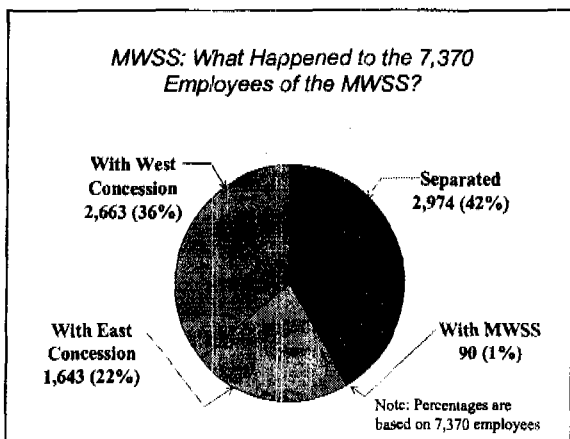
10

Aguas Argentinas

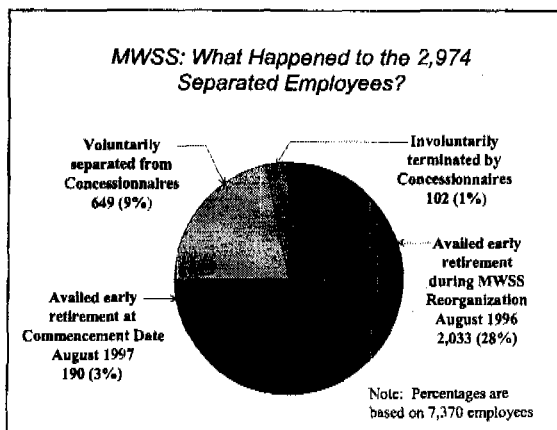
Total Staff

Category	Total Staff
Origin	~7,500
Afo 1	~2,500
Afo 2	~2,500
Afo 3	~2,500

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12



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MWSS Reorganization: Early Retirement Plan

Early Retirement Benefits are:

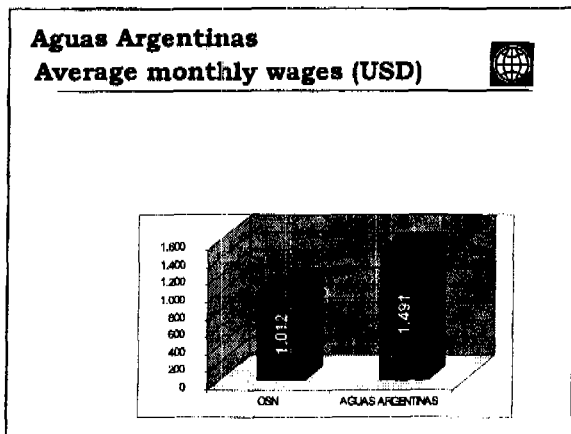
- *For 20 years or less service: 1.5 months of "Gross Monthly Pay" (instead of the usual "Basic Monthly Pay" per year of service
- *For more than 20 but less than 30 years of service: 2 months of "Gross Monthly Pay" per year of service
- *For more than 30 years of service: 2.5 months of "Gross Monthly Pay" per year of service

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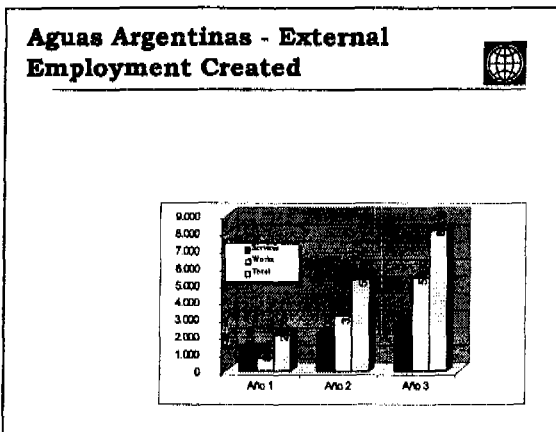
Opportunities

- Better career opportunities
- Professional training
- Improved work environment
- Higher compensation and incentives
- Job satisfaction/accountability
- Possible participation in ownership of new company
- Additional external employment creation

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MWSS Employee Stock Option Plan

- * Ownership of 6% of stocks to regular employees
- * Concessionaire to grant to every regular employee an Annual Stock Purchase Bonus equal to not less than the last basic monthly salary during that year, until all of the 6% available shares are fully subscribed

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Process Issues 

- Stay informed
- Consult
- Participate in the process
- Learn from other experiences

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Phase 2: MWSS Privatization

- * Principal Advisor, International Finance Corporation, engaged in November 1995
- * Labor Relations Advisor, Ogilvy and Mather (O&M), engaged in early 1996 as part of IFC Team
- * Meetings and consultations by O&M with various sectors of MWSS labor force
- * Publications and newsletters distributed
- * Consultation with labor at various decision points conducted by MWSS Board of Trustees and IFC

20


Labor Union and Supervisors Association Join Argentina Trip

MWSS Team included the following:

- * Administrator
- * Deputy Administrator
- * President of Labor Union
- * Two Vice-Presidents of Union
- * President of Supervisor's Association
- * Representative of Technical & Administrative Depts.
- * Representative of Customer Service Departments

Team (minus the Administrator) responsible for drafting Labor portion of Concession Agreement

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Participation and Consultation with Labor 

- Buenos Aires: Labor was part of 13-member privatization committee (2 seats)
- MWSS Study tour
- MWSS Labor-Management Committee wrote labor sections of concession contracts

FINANCING STRATEGIES FOR AFRICA'S WATER SUPPLY AND SANITATION REFORM

RCWSS/2-01/3.1

EXPERIENCES AND CHALLENGES OF FINANCING WATER SYSTEMS IN AFRICA
 Griefo Yiga/Hall, African Development Bank (AfDB)

1

African Development Bank

INTRODUCTION

Need for Water Sector Evaluation

- take stock of past interventions in the sector
- trace the way forward for sustainable development

Water Sector Reviewed

- rural water supply and sanitation projects
- urban water supply and sanitation projects

2

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Sample of Projects Reviewed

Table 1: Number of Projects Reviewed by Region

Sub-sector	Region					Total
	East	West	North	South	Central	
Urban	9	6	5	7	3	28
Rural	3	8	5	3	1 (cancelled)	20 (1 cand.)
Total	12	14	8	10	4 (1 cancelled)	48(1 cand.)

NOTE: Urban sample- 28 out of 208 completed projects for which individual PCR/PPER were prepared
 - on going projects approved since 1995
 Rural sample- all rural water supply projects

3

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Overall Bank's Portfolio in the Water Sector

From 1967 to 1999

- No of operations in water sector = 224
- Total Bank Group Operations = 2,290
- Percentage share = 9.7%
- Amount in UA = 2.1 billion
- Total Bank Group Loans&Grants=27.09 billion
- Sector's share of total = 7.75%

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Trend of Bank Group Lending in the Sector

Table 2 Bank Group Lending to Water Supply and Sanitation Sector (million UA)

	1979		1989		1999	
	Amount	%	Amount	%	Amount	%
ADB	180	32	1624	28	3223	58
AFD	000	00	9695	157	4008	97
NIJ	000	00	000	00	600	65
BANKGROUP	180	32	2619	135	8886	73

Source: ADB Sector Demand/DBX


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Scope of Presentation

- main findings
 - from the Study Reports
 - from recent evaluation field mission reports
- key issues
- General lessons and recommendations
- Country Specific lessons and good practices


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Main Findings

- first and second generation project components
- sector goals and objectives
- relevance
- quality at entry
- efficiency of implementation
- efficacy of Bank assistance
- institutional development and capacity building
- recent development

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First Generation Projects' Components


Urban

- **Water:** rehabilitation and expansion -dams, intake works, treatment plants, transmission and distribution systems, limited house connection meters, etc
- **Sanitation:** sewerage treatment plants, pumping stations, sewer mains, storm water drainage systems, etc

Rural

- **Water:** construction of dams, bore holes, hand and mechanical pumps, treatment plants, pipeline networks, water points


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Second Generation Project Components

- **Emphasis became more on rehabilitation works**
- **Technical assistance for studies and capacity building**

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Sector Goals and Project Objectives

Very General

- **The sector goal was improvement of the health condition and socio-economic development of the population through the provision of basic infrastructure facilities for water supply and sanitation services**
- **The project objectives were provision of safe piped water and proper sanitation facilities to meet existing and future demand by expanding coverage in the areas served (rural and urban areas)**

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Were the Projects Relevant?

Were relevant then because:


- they met governments and donors development agenda of the time that aim at provision of basic infrastructure required for development

They are not fully relevant now since

- they by and large fail to meet the basic needs of the urban poor, the informal settlements and most of the rural areas

Note: More recent projects aim to redress past shortcomings

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How good was quality at entry?

Inadequate:

Reasons:

- projects selection usually based on immediate felt needs and piece meal in approach
- Lack of comprehensive sector and feasibility studies
- Lack of integrated water resources management approach
- no clear and quantified performance indicators
- limited skill mix for project preparation and appraisal leading to poorly prepared projects
- stakeholders involvement and participatory approach limited or non-existent

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Was there efficiency in project implementation?

MIXED

Reasons:

- poor quality at entry
- time and cost overrun common features of most projects
- inadequate supervision
- inadequate and/or delayed availability of counterpart funds
- civil strives
- lack of autonomy, skilled manpower, financial viability

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Was there efficacy in Bank Assistance?

Limited

Reasons:

- benefits far below projections- assumptions and parameters changed
- poor institutional, operational and financial performance - high level of unaccounted for water, huge receivables
- inappropriate choice of technology
- poor operation and maintenance and service delivery
- lack of standardization of pumps for rural projects
- supply-driven approach hence no participation, no ownership, no sustainability

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What impacted from Bank Assistance?

MIXED:


Positive

- Has contributed in meeting the increased demand for basic human needs in areas served
- improvement in rural living conditions especially for women and children living in areas served
- improvement in the health condition in the areas served

Limitations

- less investment in sanitation hence poor sanitation in most countries remains unsolved
- limited interventions - urban poor, informal settlements, rural areas inadequately catered for


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Scope of institutional support

- applied its credit leverage in 1970s and early 1980s - imposing conditionalities on Governments/Executing Agencies to take appropriate measures for institutional improvements and financial viability- tariff increase, reduction in receivables, unaccounted for water (UfW), etc
- technical assistance for recruiting external experts, on the job and external training, provision of logistical services, studies, institutional reforms in late 1980s and 1990s

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Design and Implementation of Technical Assistance (TA)

Limitations

- limited in scope- project orientated
- focused on 'public utility/executing agency' needs
- piece meal approach, no comprehensive need assessment study, no consideration for public/public or public/private partnership to capitalize on limited resources
- not well structured (lacked motivational and incentives mechanism to enhance corporate norms)
- not well supervised
- funds sometimes diverted to engineering components

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Outcome and Impact of TA

Positive Aspect

- studies help develop Bankable projects, which second generation projects were based upon
- transferred skill to local counterpart staff
- creation of and equipping Project Implementation Units helped to implement projects
- stock of national experts even if there was staff turnover from the targeted entity
- helped in the development of local consultants (consulting firms and individual consultants)

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Was TA sustainable?

Not sustainable, mainly because:

- most entities lack autonomy- not run on commercial lines, no corporate norms even in those reorganized to operate as a corporation or company. Therefore:
 - poor management and financial performance
 - poor service delivery and poor O&M
 - Lack of stakeholders involvement and participation of communities- so no ownership
- capacity building not institutionalized

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Recent Development

Recent Initiatives

The Bank Group

- adoption of a new Vision Statement- mainstreaming cross cutting issues- poverty, gender, environment, public/private partnership and stakeholders and community participation in project/program from inception through monitoring and evaluation stages
- adoption of Integrated Water Resource Management Policy
- strict application of logical frameworks
- allocation of adequate resources for more supervision with appropriate skill mix
- actively participated in Africa Water Vision for 2000

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Recent Development (con't)

Regional Member Countries (RMCs)

- Improved enabling environment- good governance, public sector reforms, participatory development
- have prepared or are preparing Policy for Integrated Water Resources Management
- decentralization of public services to local authorities
- encourage private sector participation
- mainstreaming cross-cutting issues in project design, implementation, operation and evaluation


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KEY ISSUES

- The need to review donors funding priorities and product lines to effectively assist RMCs in their decentralization efforts
- The need to effectively implement the policy of **Integrated Water Resources Management in line with the Mission Statement of Africa Water Vision 2000**
- The need to effectively enhance public/public and public/private partnership and participatory approaches for resources mobilization and service delivery improvement- play their catalytic role effectively
- Pricing Issues: the need to strike appropriate balance- cost recovery/affordability


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GENERAL LESSONS AND RECOMMENDATIONS

Included in the document distributed

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Some Country Experience- Lessons and Good Practices

- Ethiopia
- Kenya
- Morocco
- South Africa
- Uganda

Included in the document distributed

RCWSS/2-01/3.2

**PUBLIC—PRIVATE PARTNERSHIP (PPP)
FOR MUNICIPAL WATER SERVICES**

Marie-Marguerite Bourbigot & Yves Ricaud, VIVENDI Water

Continuous under-funding of the urban water sector has created a situation where Governments do not have the financial ability to "catch up" for expansion or for improvement.

The World Commission on Water states that US\$ 600 - 800 billion need to be spent over the next 10 years to alleviate water and sanitation challenges in developing countries. Actual investment in 1997 was US\$ 25 billion, some 36% of the desired total. The private sector has the ability to raise the balance, if :

- risks are apportioned fairly and,
- the Private Sector is able to generate a fair profit.

Consequently, private capital can play a role in African countries or big cities where the GDP/capita is not too low (Box 1). In other countries or secondary cities, private money will be too expensive. Private water companies are listed on the stock exchange and have to report to their shareholders, who expect a fair profit. The higher risk (for instance political or foreign exchange) in Africa compared to other parts of the world leads to a higher return on investments. Often, a lease contract is the most appropriate solution for PPP in the African water sector with some exceptions, especially when water and electricity services are offered by the same company.

Box 1. Role of private capital in Gabon and Niger	
GABON	<ul style="list-style-type: none"> ▪ GDP/Capita : 4000 US\$/capita ▪ Electricity and water company ▪ 20 years concession ▪ Turnover : 670 MFF ▪ Equity : 150 MFF (51% Vivendi - 49% local)
NIGER	<ul style="list-style-type: none"> ▪ GDP/Capita : 200 US\$/capita ▪ Water company ▪ 10 years lease contract ▪ Turnover : 58 MFF ▪ Equity : 10 MFF

Three principal skills the Private Sector can contribute to secure a long-term relationship with the African urban water sector are:

- Good management and technical skills,
- Appropriate technology expertise, to solve engineering/administrative problems.
- Income-generation skills, both as equity and debt,

A partnership in the form of a long-term contract with the private sector will shift attention to better ways of providing an efficient service and delivering value for money. Private Sector input must be sought for its efficiency and expertise in the delivery of services and the subsequent guarantees on performance. Private Sector funds should not be the primary reason in the short term, for seeking its involvement. Private funds will in due course be available in as much as the project is bankable. Bankability comes in two alternative or complementary forms:

- Guarantees securing the flow of payments by the municipalities or Governments,
- Sufficient and assured revenues from the users of service.

To ensure continued revenue from the users, it is necessary to improve the confidence of the population. Due to the inefficiency of the public service, the community seeks alternative sources of supply. Some industries and certain domestic customers drill their own boreholes indiscriminately, with resulting risks of over abstraction. Others go for tankered services. Low income earners are forced to buy expensive water or otherwise obtain it from surface run-offs. People are not inclined to pay for poor public services, neither can the charges be increased to cover the cost of renovation. When the service is significantly improved, it becomes feasible to charge prices that are closer to the economic cost of water. Once a decent cash flow is assured, it is possible to invest in more assets and to deliver a service in line with the expectations of the municipality and the government. However, it is indispensable to set up an investment fund in the form of a soft loan below market conditions, at the initial stages of the process.

In the Lease Contract set up for Niger, the operator (VIVENDI Water) will manage an Investment Fund (Box 2) financed by the World Bank to begin the cycle of better services. Improved services translate to increased revenues able to fund further improvements. Later this Investment Fund could be replenished as revenue is generated from the users. A percentage of the water bill could be allocated to the Investment Fund to ensure long-term sustainability.

ROLE OF THE PRIVATE SECTOR

- The Build, Operate and Transfer (BOT) Model. New components of the water system by BOT contract that can be isolated from existing operations may appear attractive to the utilities. In practice, BOTs have proven to be expensive or simply non-fundable, as large up-front funding is required. Additionally, the water distribution systems have to be improved to ensure that customers benefit from improved services. Such projects might be necessary but should only be one phase of a long-term strategy.
- Rehabilitation of existing assets. PPP should not be considered only as a means to provide and operate new capital works, but should first tackle rehabilitation of existing assets. The logical way forward for most water providers is to deal with distribution challenges (leakage, pilfering, metering) and plant refurbishment. Good housekeeping of existing assets is essential to gradually improve the levels of service to customers.
- Management, leasing or concession contracts. Private operators are skilled at renovation and operation of existing assets, through management, leasing or concession contracts. Such contracts would equally address customer-relation issues (for instance, revenue collection, customer centres) and training the work force in all aspects of the water business. (See example of Chad - Box 3).

PROGRESSIVE CONTRACTS, OUTSOURCING CONTRACTS

Apart from management contracts, lease contracts or concessions, there are other possible contractual arrangements. The contracts should be adapted to the different country situations, and countries and the private sector need more flexibility in the contractual approach. For instance:

- CHAD has a good example of a situation where a management contract progresses to a concession contract, on condition that each requirement is fulfilled at the various stages (Box 3).
- In TOGO, the World Bank is holding talks with the water utility and the government, to outsource the commercial management.

Box 2. Investment Fund in Niger, Lease (Contract Period - 10 years)

- Target population: 1.6 million out of a total of 10 million
- Number of customers : 53000 (including 2500 standpipes)
- Average tariff: 197 FCFA/m³ (in 1999) (US \$ 30)
- Turnover : 58 million FF (US \$ 8.13 million)
- Staff: 540 employees

The operator will manage an Investment Fund of US \$ 5 million financed by World Bank over a period of 5 years. This investment will be dedicated to the construction of :

- 200 km of pipes DN63
- 11.200 connections
- 550 stand pipes

The extension of tertiary network and the increase of number of connections will increase the revenues of the operator and initiate the pump for improvement of the service.

Box 3. CHAD: From a management contract to concession			
Basic contractual framework	Licensing Agreement State - STEE		
Events	Donor's agreement on financing	Start-up of Farcha	Majority shareholding of the Group in STEE
Concession Management method	PHASE 1 PRIVATE MANAGEMENT without majority shareholding		PHASE 2 PRIVATE MANAGEMENT with majority shareholding
	Global management <ul style="list-style-type: none"> Assistance provided by donors Upgrading of equipment and management structures Implementation of licensing structures Planned diesel 2 x 5 MW from year 1 and start-up of Farcha 	Flat fee remuneration (if conditions precedent to phase 2 have not been satisfied at the end of the Global Management period) <ul style="list-style-type: none"> Legal, accounting and technical management of the concession Provision of services for a flat fee calculated on the basis of tariffs 	Management of the concession by the private sector partner with a controlling interest <ul style="list-style-type: none"> Global management of the sector by shareholders in compliance with the Licensing Agreement between the STEE and the State. Operator's contribution of assets of the development company (merger)
	Special Project account <ul style="list-style-type: none"> Cash management of investments by the private partner jointly with the State and the donors Financed by operating surplus, loans and contributions of the donors 		
Financial undertaking of the Group	No financial undertaking	Equity of the development company subscribed in its entirety by the Group	Acquisition of at least 51% interest in the share capital of STEE

- **Affordable solutions.** The Government should allow the water service provider to develop an affordable solution, for long-term sustainability of the service.
- **Change in philosophy.** The issue is whether a water utility should be perceived as a public service activity with continued government subsidies or as an industry with a product to deliver and customers to serve. Changing to the Private Sector requires more focus on customer relations.

Government Support

- Governments should realise that water provision services have to be run commercially. For long-term sustainability, services have eventually to be directly financed by the customer and therefore tariffs have to be raised gradually. However, there is fear that tariff increases are synonymous with political conflicts, which is correct if tariff increases take place in an environment of continued poor levels of service. Governments do the people a disservice if they advise that water should be free, because they prevent the customer from having a sustainable water supply service.
- With respect to human resources, existing staff in the water industry may feel threatened by PPP. Careful planning by both the government and the Private Sector is essential to attract support from the work force.
- Governments have an important role to play in educating the population on the importance of conserving water, on the cost of abstraction, treatment and distribution of a potable supply as well as collection and treatment of wastewater.
- Lack of legislation leads to bad practice, making it difficult for water operators to deliver. Legislation should be enacted to control abstraction from current water resources, water quality, and effluent discharged into rivers, lakes, aquifers, etc. What are the regulations on service quality? Is there a possibility of changing and adapting to the local situation; who will measure performance and what are the sanctions for not meeting the criteria? Regulations need to be

achievable at affordable costs to the customer, to ensure continued upgrading of service standards, rather than one-off improvements that the population cannot afford. It is important that the regulatory body build capacity to address poverty concerns and that the government strategise on social issues. The Private Sector consequently sets prices based on the regulations, but often the capacity to enforce regulations is inadequate.

- **Sharing of Risk.** Private Sector contracts are generally long term. It is not possible for the Private Sector to control risks related to country macro-economic factors such as currency devaluation, inflation, political and other major forces. A reduction in the level of risks, as well as protection from risks will cut down project expenses incurred by the Private Sector and thus reduce the tariff burden on the customer.

RECURRENT CONTRACTUAL ISSUES

In different tendering procedures, particularly for management contracts, some recurrent contractual issues create imbalanced negotiating conditions between the operators and the water authority, thus jeopardising the smooth performance of the contract.

- The operator does not control the factors determining the performance incentive compensation, which is mainly based on the improvement of the water provision and wastewater services. The operator and the water authority should agree, before signing the contract, on an investment plan and an investment fund, the authority should bind itself to implement such a plan. The parties may modify the investment plan during the contract period by mutual agreement.
- Once a contract is signed, no provision is made for re-adjustments in the case where unforeseen factors which may have a significant impact on financial / contractual issues arise. The contract should provide for a fair adjustment of the fixed fee and incentive compensation if an event significantly:
 - increases the operator's real costs and expenses,
 - alters the environment in which the operator carries out its obligations, or
 - causes material hardship to the operator.
- Performance targets are not always based on objective criteria and are not readjusted periodically to ensure their conformity with the status of the services. The operator should be allowed to assess the services for a determined period once the contract is in force. Thereafter, the parties should agree on new, more realistic performance targets if necessary.
- The contract usually provides a list of determinant events which, though not exhaustive, is not appropriate for the water business because it does not take into consideration the basic needs. Pertinent fears include :
 - confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government, de jure or de facto authority or ruler. Any other act or failure to act of any local state or national government authority,
 - strikes (especially staff strikes which the operator cannot control but is responsible for),
 - interruption or failure in the supply of electricity,
 - changes in the quality of the raw water supplied to the operator (due to floods, for instance),
 - insufficient quantities of raw water, thus preventing the operator from meeting performance standards (e.g. drought).

LESSONS REGARDING SERVICES TO THE POOR

1. Private - public partnership is often followed by stricter enforcement of standards on water quality and level of services, stepping up costs and maintaining or worsening the exclusion of the poor.

The poor could access the service more easily if the operator was permitted to deviate from this uniform standard. Delivery of different levels of service to different customer groups must be recognised as objective criteria, but should be explicitly stipulated in the contract.

Durban Metro Water in South Africa has proven to be proactive and innovative in this approach (Box 4).

2. It is necessary to set clear rules for partnership with small-scale independent providers (SSIPs). Though they can contribute low-cost alternatives, aspects of price and quality should be regulated and not left to market forces.

In Gabon, exclusivity of services is granted to the operator (VIVENDI Water) who has the leeway to opt for third party provision. The SSIPs should obtain a written agreement from the operator (Box 5).

The incentive to facilitate entry for SSIPs is that the expansion mandate would be structured to welcome any contribution that would enable targets to be met.

Box 4. Durban

The Durban Metro water department has developed a variety of different water supply service levels in order to supply affordable water to the large number of poor households. These choices are:

1. A conventional full pressure system
2. A semi pressure roof tank system
3. A semi pressure system with ground tanks
4. Stand posts

Both the low pressure systems (roof tanks and ground tanks) can be installed at substantially lower costs than conventional systems, because they use small diameter, low pressure pipes, inexpensive valves and fittings, and manual labor. The labor intensive nature of the installation and operation also provides local employment. The water bailiffs who operate the groundwater systems also operate stand posts at which they sell water by the litre to residents who do not have ground or roof tanks, thus ensuring that everyone has access to some form of water supply. In some areas automated stand posts where users insert a pre-paid card have been installed.

In March 1999, Durban Metro entered into an agreement with the private sector, VIVENDI Water and an NGO, Mvula Trust to further explore low-cost ways of supplying water and sanitation services to the poor. Umgeni Water, the regional water board and bulk water supplier as well as the Water Research Commission of the Government of South Africa are also partners in the project. The project is part of the Business Partners for Development (BPD) program, initiated by the World Bank, and it aims to demonstrate the role that tri-sector partnerships, bringing together the private sector, NGOs, and government, can have in addressing development problems.

3. Urban policy in marginal areas: It is important to clarify government social policy, and agree on what can be incorporated into the contract and service provision to the population, consider long term objectives and also initiate short-term measures (see Box 5).

4. Establishment of tariffs that are affordable to the poor: The general agreement is that it is better to subsidize connection fee instead of consumption charges. Poor consumers cannot afford large one-off payments and they are not perceived to be credit worthy. Options are that: the utility partners with a micro finance provider; or the utility itself provide micro finance services; or, the utility subsidize connection fees for low-income house. Many water services providers in Africa have chosen this third option. In Ivory Coast the social connection charge is reflected on the water tariff. In Senegal connections for low-income households are subsidised.

CONCLUSION

To successfully provide better water services to the population, the private sector needs:

Flexibility and pragmatism in the contractual approach: a model that works in a country should not be applied to another without taking into account specific constraints. Smooth transition from a management contract to a lease contract, then a concession contract if necessary, can be more efficient and less costly than a rigid system with bidding at each phase.

Once the contractual approach is selected, tender documents should be **realistic** and should ensure an **affordable solution**. The roles of the private sector and the government need to be clearly defined. The private sector cannot solve all the problems and control all the risks. There is need for government support in particular to educate the population on the cost of potable water supply and sanitation services. It is also important that the government develop strategies to address social issues.

With regard to services to the poor, the private sector equally has a role to play with other actors (Government, NGO, etc.). This role should be clearly defined in the tender documents.

Failure in privatisation of a water utility due to inappropriate contractual approaches and unfair tendering procedures will result in an un-sustainable service and will penalise the water sector which desperately needs more investment.

Box 5. Gabon - Concession contract: A tailor-made policy for peri-urban areas and isolated centres

1. Concession contract for 20 years :
 - Population concerned : 1,0 million
 - Number of customers : 62.000
 - Average tariff : 255 FCFA/m³
 - Turnover : 67 billion CFA (2000)
 - Staff : 1492 employees
2. Under the leadership of VIVENDI Water, the group implements a policy specifically adapted to peri-urban areas and isolated centres. Although small centres and peri-urban zones have only small effects on SEEG turnover (5 to 7%). VIVENDI Water will consequently take concrete actions with the main objective to improve the quality of water services for the greatest possible number of persons.

The separate proposals developed in water services include the following strategic broad aspects:

- **Technical:** VIVENDI Water seeks solutions to minimise production and distribution costs and investments in peri-urban areas and isolated centres (for instance, optimising production installations, water treatment and storage)
- **Commercial:**
 - Maximum reduction of outstanding payment risks in administrative services;
 - Promotion of social connections;
 - Simplification of procedures for new connection installations;
 - Promotion of new metering facilities : prepayment, contract prices.

However, two main challenges should be addressed to extend services to people in poor areas:

- **Legal:** In the informal settlements, SEEG is not mandated to lay pipes.
- **Technical:** During rainy seasons (9 months out of 12), pipes could burst if streets are not well constructed. Local and central government are responsible for site development.

KEY ASPECTS OF REFORM: OPTIONS FOR PUBLIC - PRIVATE PARTNERSHIPS, BIDDING PROCESS, REGULATORY REGIME

SELECTING A PRIVATE OPERATOR

Jan G. Janssens, Sr. Water Sector Specialist, The World Bank

1

Outline

- > Introduction
- > Main Principle: competitive bidding
- > Two-stage bidding
- > Background considerations
- > The bidding process

2

Introduction

- In January 1995 the World Bank adopted new rules dealing specifically with private infrastructure or concession contracts that it finances.
- The new guidelines link the way the private developer or operator is selected to the way it will have to procure Bank financed goods, works, and services.

3

Main Principle: competitive bidding -1

- if the private operator is selected competitively under ICB or limited international bidding
(as defined in the Bank Guidelines on Procurement)

the operator is free to use its own procedures to procure contracts financed by the World Bank

(as long as these come from eligible countries, that is, World Bank-member countries, and, on the condition that these were included in the bidding package)

4

Main Principle: competitive bidding -2

- when the private operator is not selected competitively,

the private operator to procure goods, works, and services on an ICB or limited international bidding basis (in accordance with standard Bank procurement rules)

5

Main Principle: competitive bidding -3

- if a PSP contract (e.g. *affermage*) is awarded by ICB or LCB,

IDA can finance the government's share of the physical investments without specific procurement rules for the private operator on the condition that these physical investments were included in the bidding package.

6

Main Principle: competitive bidding -4

- it is prudent to involve Bank staff from the beginning of the process if the government or private operator:

to hold onto the option of letting a competitively selected private operator procure Bank financed goods and services using its own procedures.

7

Two-stage Bidding -1

- **Technical Bid:**

- Bidders present separate technical proposals containing their business plans (including investment and eventually financing plans) for meeting the service objectives.
- These proposals are reviewed for consistency with the project specifications and requirements, and evaluated before proceeding to the financial offers.

8

Two-stage Bidding -2

- The evaluation of technical bid is conducted on a pass or fail basis - that is, only those bidders that pass the technical evaluation proceed to the financial evaluation.

- The winning bidder is then selected on the basis of the best financial proposal from among those who passed the technical evaluation.

9

Two-stage Bidding -3

- ✓ An alternative is to weight the technical and financial evaluations:

- technical proposals are required as in the two-stage bidding process, but rather than passing or failing, the proposals are scored.
- the financial proposals are also scored, and,
- the contract is awarded on the basis of the weighted technical and financial scores.

10

Two-stage Bidding -4

- ⇒ but: a process involving a ranked technical evaluation of proposed business plans has important drawbacks:

- ✓ It often involves considerable discretion and judgment on the part of the evaluation committee, which reduces the overall transparency and automaticity of the award process.
- ✓ Experience has also shown that changing market conditions after contract award often require operators to make significant (and justifiable) modifications in their business plans (and investment programs in case of a concession).
- ✓ These changes reduce the meaningfulness of the evaluation process to the extent that it relied heavily on the assessment of the proposed business plans.

11

Background Considerations -1

- in case water tariffs do not allow cost recovery of needed rehabilitation of the system,
- to avoid that the private operator uses the excuse of delays in procurement for not achieving target performances,
- *it is advised to delegate to the private operator the execution of the rehabilitation and renewal component, financed by the Bank or donors*

12

Background Considerations -2

- if the selection of the private professional partner for the operating company is done through ICB
 - then IDA can finance e.g. rehabilitation or renewal works, to be executed by the private operator provided that these works were included in the said bidding package;
 - as a result of the said ICB, the winning operator would be free to procure the works from eligible sources using its own procedures.

13

Background Considerations -3

- The (private) operating company can be asked to do the detailed design, supervision and/or commissioning, or otherwise take part in the procurement process of Bank financed works, e.g. large expansion facilities, and goods.
 - *In this case the private operating company, and its affiliates, are excluded from the bidding process because of conflict of interest.*
 - *Involving the private operator in engineering design and supervision, is an advantage since he will be operating the system after commissioning.*

14

Background Considerations -4

- If the private operating company is allowed to participate in the bidding process, then a **clear separation at best has to be created** between him and those preparing the design and tender documents, and supervision or accepting the completed work in order to guarantee fair competition and the perception of fair competition as well.

15

The two-stage bidding process -1

- Prequalification
- Prebid Conference

A prebid conference will be held, during which pre-qualified firms/consortia are invited to comment on the draft bidding documents.

This meeting provides an opportunity for the key Government sector actors and the potential bidders to engage in a frank exchange on a number of issues:

- ✓ *in addition to the selection process itself, discussions may revolve around issues such as the transition period, human resource management, the remuneration of the operator, the prevailing sector policy, the content of the renewal program to be implemented by the operator, the performance standards to be respected by the operator, contractual target values of performance indicators and related incentives, and current sector experience with regard to the collection of payment from users, particularly the public agencies, (and investment program in case of a concession).*

16

The two-stage bidding process -2

- Stage 1: Technical Proposal (1)

– Bidders are then asked to submit a technical proposal detailing how they would meet the operational objectives and performance targets specified in the draft contract, a copy of which is included in the bidding documents.

– Technical proposals are evaluated as either satisfactory or unsatisfactory ("pass or fail"). They are not ranked.

17

The two-stage bidding process -3

→ Stage 1: Technical Proposal (2)

- Clarification Meetings: the evaluation committee can meet with the bidders individually, to discuss the technical proposal and request clarifications or modifications. These individual meetings are *confidential*.
- Memorandum: Cross-cutting modifications to the bidding documents, accepted by the evaluation committee, are put together in a Memorandum, sent to all bidders.

18

The two-stage bidding process -4

→ Stage 1: Technical Proposal (3)

- In the interest of maximizing competition for the contract, the companies with an acceptable (but not yet fully satisfactory) technical proposal are invited to submit a second technical proposal, to be joined with the financial proposal (see Stage 2).
- The eventual second technical proposal will be requested to incorporate all the clarifications or modifications as asked by the evaluation committee and as stipulated in the Memorandum.

19

The two-stage bidding process -5

→ Stage 2: Technical and Financial Proposal

- All the bidders whose technical proposals were judged satisfactory in Stage 1, and those bidders who are invited to submit a second modified technical proposal, are invited to submit a financial bid.
- The financial bids are opened in a public meeting.
- The submitted final technical proposals are evaluated by the Evaluation Committee on their conformity with stipulations in the Memorandum.

20

The two-stage bidding process -6

→ Award of Contract

- The contract is awarded to the lowest bidder after a conformity check by the evaluation committee of the submitted final technical proposals.

RCWSS/2-01/4.2

ABSTRACT

REGULATIONS AND INCENTIVES AS MEANS OF
ADDRESSING INTEREST OF ALL STAKEHOLDERS AND ENHANCING COMPETITION

Alan Booker

In order to place the role of the regulator into context it is important to be clear about the big picture. This will help to achieve better understanding about the role of the regulator later in the development process. This paper starts with the big picture, then focuses on the institutional framework, and finally moves into a detailed examination of the role of the regulator.

The regulation of quality and the representation of customers are covered in the paper. But concentration is placed on the role of the economic regulator, which is the least understood of the regulatory roles.

The theoretical role of economic regulation has been developing over many years. Historically, the role was developed in the US where regulatory bodies established on a State-by-State basis supervised the charges of a range of public services provided by private companies. The approach adopted was known as "cost of service" regulation. The detailed cost structure of the service provider was examined by the regulator on application by the company and after due process charges for services provided were set.

Regulators were generally political appointees who sometimes acted like politicians. The due process developed into a highly legalistic one rather like a court hearing, often taking two years to complete. The charges when set lasted until the next application. In periods of higher inflation or new standards demanding higher investment, the long process of determination placed great stress on the finances of the companies. The other aspect was the demand placed on the resources of the regulator who needed an army of accountants, engineers and consultants to examine the costs of the companies and advise accordingly. This approach is still the one which predominates in the US.

A new approach to economic regulation known as "yard stick" regulation, was first developed in the US by academics. This approach was taken up enthusiastically by the emerging regulatory economists in the UK in the 1980's who were developing a regulatory model in response to the "Thatcher" push to privatise former state industries and companies. They wanted to build into the supervision of private monopolies, quasi competition through comparisons between regional monopolies in an open and transparent regulatory process.

The outcome was the development of a philosophy known as "incentive regulation" where pressure on the monopolist to improve efficiency came from all stakeholders derived from a regime of financial rewards and penalties supervised by the regulator. Shareholders wanted greater profits, customers wanted improved services and lower charges, government wanted to remove itself from the equation, financiers wanted low risk investment and all parties sought stability and sustainability.

This philosophy, promulgated through medium term price caps allied to performance measures, has now developed into a sophisticated system of supervising the behavior of monopoly service providers. At the same time the regulator has responsibility to promote competition through structural change and market liberalisation.

In the context of developing appropriate regulatory institutions and approaches for Africa it is important to bear in mind how the theory and practice of regulation has developed elsewhere in the world and why. It can then be adapted to meet the specific restructuring needs of the continent, which will be as diverse as similar needs in other continents. Elements of both cost of service and incentive regulation may be

needed, and the specific options adopted will need to take into account the chosen institutional structure for service delivery, and the modalities for contractual arrangements and award.

The paper is presented with some knowledge of water sector restructuring in Africa. Although it does not purport to be a case study of the water sector restructuring in Ghana, it does draw on the authors experience in Ghana, as a member of the Adam Smith Institute team helping to build the capacity of the Public Utilities Regulatory Commission in the water sector. The paper does not necessarily represent the views of the Adam Smith Institute.

RCWSS/2-01/4.WG.A

*The choice of options for PPP: Country Experiences***NAMIBIA: COMMERCIALISATION OF THE BULK WATER SUPPLY SECTOR**
Kuin F. Tjipangdjara, Namibia Water Corporation (NamWater), Namibia

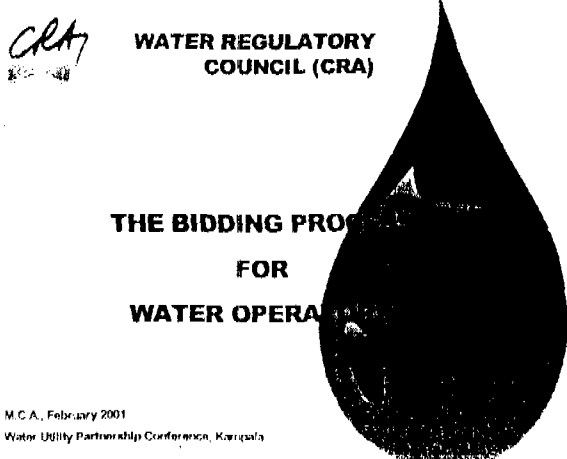
Commercialisation of the bulk water supply sector in Namibia and the establishment of the Namibia Water Corporation (NamWater) were necessitated by the public sector rationalisation policies and the need to improve water service delivery at national level. This presentation discusses the process that preceded the establishment of NamWater, the organisational structure and functions. In the discussion on the relationship among NamWater, the bulk water users and the line Ministry, attention will be given to strategies being used to develop bulk water supply infrastructure, the process of tariff setting and the factors that contributed to the review and adoption of the zonal tariff policy. The roles played by other government agencies (in particular the Directorate of Rural Water Supply), as well as local and regional authorities in the supply of water will be expanded on. Finally, comments will be made on the ongoing activities with the Ministry of Agriculture, Water and Rural Development to reform the water sector.

RCWSS/2-01/4.WG.B

The bidding process: Country Experiences

MOZAMBIQUE: THE BIDDING PROCESS FOR WATER OPERATORS
Manuel Carrilho Alvarinho, Conselho de Regulação do Abastecimento de Água

1



WATER REGULATORY COUNCIL (CRA)

THE BIDDING PROCESS FOR WATER OPERATORS

M.C.A., February 2001
Water Utility Partnership Conference, Kampala


2

STEP BY STEP PROCESS

Phase 1
Situation Assessment / Marketing
PSP Options/ Institutional Review/ Strategy
Investment Programme Outlined **12 months**

Phase 2
Prequalification process/ Bid documents
Prepare Financing arrangements **12 months**

Phase 3
Legal measures/ Institutional Reform decrees
Negotiate Financing arrangements
Tendering/ evaluation/ discussions/ contract signed



M.C.A., Maputo, February 2001
Water Utility Partnership Conference, Kampala

3

Prequalification of Potential PSP Operators

Minimum Criteria (lead water company):

- Connections served > 250,000
- Largest lease/concession for > 150,000 connections
- One contract out of home country
- One contract in Sub Saharan Africa (or comparable)
- one project in a similar developing country
- Ave turnover in water activities: \$100 million/year
- A consistent record of profitability

M.C.A., Maputo, February 2001
Water Utility Partnership Conference, Kampala

4

Selection of Operators

- Timing after issue of bid doc.'s
 - Pre-bid Conference: 2 weeks
 - Submission of bids: 14 weeks
- Integrated Technical & Financial Evaluation
 - Technical scoring: 25% of weight
 - Financial scoring: 75% of weight

M.C.A., Maputo, February 2001
Water Utility Partnership Conference, Kampala

5

Technical Evaluation

- Based on 7 Functional Strategies:
 - Strategy to Reduce Unaccounted for Water
 - Strategy to Achieve Levels of Service
 - Asset Management Strategy
 - Strategy to Promote Mozambican Involvement
 - Strategy to Improve Water Supplies to Peri-Urban
 - Human Resources Strategy
 - Strategy for Improving Collection Efficiency (Management Contracts)

M.C.A., Maputo, February 2001

Water Utility Partnership Conference, Kampala

6

Financial Evaluation

- Based on The Total Bid Price, being the sum of:
 - Operator Revenues- the first 5 years (Lease Contr.)
 - Management Fees, excluding Incentives (Man.Contr.)
 - Construction Fees – Rehabilitation Works/5 years
 - Construction Fees – New connections/5 years
 - Fees for Managing the Capital programme and procuring/supervising works

M.C.A., Maputo, February 2001

Water Utility Partnership Conference, Kampala

7

OVERVIEW & RESULTS

- 8 Candidates
 - France, UK, Portugal, Germany, Brasil, Iran
- 4 Qualified
- 3 Bids
- Winner Consortium: France/Portugal+Mozambique



And

**No need for immediate
Tariff Increase!**

***The easy part
is done!***

M.C.A., Maputo, February 2001

Water Utility Partnership Conference, Kampala

THE PROCESS OF SELECTING A PRIVATE OPERATOR FOR
THE DAR ES SALAAM WATER SUPPLY AND SEWERAGE AUTHORITY
R. Swero, Ministry of Water, Tanzania

Introduction

This paper describes the bidding process which is currently going on in Tanzania in an effort to privatise the Dar es Salaam Water Supply and Sewerage Authority (DAWASA). It gives in brief, the reforms which took place in the Water Supply and Sanitation Sector prior to taking decision to privatise DAWASA. Issues encountered in the process of bidding and the way forward have been briefly highlighted.

Background

The Urban Water Supply and Sanitation Sector has undergone considerable reforms in the past few years.

1. Prior to these reforms, the Government was collecting water fees as one of the sources for its revenue and in turn was giving out funds from its budget for running and maintaining water supply and sanitation services. Normally, the amount of money issued by the Government was less than the revenue collected and was by far less than the money required for running and maintenance of water supply and sanitation services.

2. The urban water supply activities were before 1994 run as part of the office of the Region Water Engineer. Under this arrangement budgetary allocation for urban water supply and sanitation services was given low priority with respect to other activities.

Decision was taken in 1994 to establish independent urban water supply and sewerage departments, and to allow them to retain revenue collected through sale of water and related services to meet the operation and maintenance costs.

3. In 1997 further developments in legal and institutional reforms were made, and these transformed Urban Water Supply and Sewerage Departments to executive Water Boards. These changes backed by legislation, made the boards more independent in running their affairs

In the same way the former National Urban Water Authority was transformed into the Dar es Salaam Water Supply and Sewerage Authority (DAWASA).

4. In 1997 a decision to privatise the Dar es Salaam Water Supply and Sewerage Authority was made and a legislation to that effect was enacted in 1999.

The decision made by the Government was to have the privatisation of DAWASA done in two stages.

(a) The first stage is to have the Dar es Salaam and Sewerage Water Authority leased to a private operator for at least 10 years. During this stage, DAWASA will have its infrastructure rehabilitated and improved while at the same time its operations and management improved through engagement of private operator. Financing for the infrastructure rehabilitation and improvement has already been secured.

(b) The second stage is expected to find DAWASA more improved in terms of infrastructure and management. The privatisation status of DAWASA will then change from lease to concession.

The DAWASA legislation (1999) provided for formation of a Regulatory body and assets owning body to be known as the Public Granting Authority (PGA). The PGA will own the DAWASA assets on behalf of the Government and will lease them to the Private Operator once the latter is in position.

The above mentioned reforms are being undertaken in line with reforms in utility services delivery in Tanzania.

Most recently, the Government made a decision to have a multi-utility regulator for all utilities (Electricity, Telecommunications and Water). Preparation to have this decision given legal power are under way. This change will have to repeal portions of the DAWASA Act. (1999).

Bidding

Following decision by the Government to have DAWASA privatised, the exercise of getting a private operator started. Responsibility for effecting reforms of parastatals in the country is vested with the Presidential Parastatal Sector Reforms Commission (PSRC). PSRC having been formerly asked to spearhead the DAWASA privatisation exercise, started work by forming a technical committee called DAWASA Divestiture Technical Committee (DTT). DTT has members from DAWASA, Ministry responsible for Water, Ministry responsible for Finance, Ministry responsible for Planning, Attorney General's Chambers and the PSRC itself.

Since privatisation of this nature is completely a new thing in Tanzania, an international consultant versed with experience in privatisation of utilities was appointed to assist PSRC in the exercise.

The first thing was to compile the information on DAWASA to be included in the Tender Documents. At the same time, several seminars to the stakeholders were carried out to enable them understand and appreciate the importance of the exercise.

Initially, pre-qualification document was issued. The document was prepared by the consultant, checked by DTT and approved by the PSRC before sending it to the World Bank for Review.

Once pre-qualification document was approved, advertisement calling for interested bidders to collect the document was issued. Interested bidders collected the documents, filled them and submitted them.

On the closing date, pre-qualification submissions were opened and evaluation exercise organised. DTT and the consultants carried out evaluation and prepared an evaluation report to the PSRC and later to the World Bank for review. Three firms out of four which applied were pre-qualified for bidding.

Having got the pre-qualified bidders, tender documents were issued to them. Tender documents were also prepared and processed in the same way as it was for prequalification documents.

At the time when bidders were busy working out their bids, one of the firms withdrew, leaving only two bidders in the run. The main reason given for withdrawal was that the bidder was not quite comfortable with the terms and conditions contained in the bid document.

On the closing day, tenders were opened and then passed over for evaluation. DTT and the consultants did the evaluation.

The evaluation was done on technical submissions first and results submitted to PSRC Commission and the World Bank as per earlier described procedure. Approval was obtained and this enabled evaluation exercise to be conducted on financial submissions. At this stage the evaluation team discovered that each one of the two bidders, attached a number of conditions to his bid which made it difficult to select a preferred bidder.

A report on the situation was prepared and submitted to the authorities. After a lengthy debate on the way forward, it was resolved to re-bid, after making thorough review of the bidding documents. The re-bid was made open to all eligible bidders, setting aside completely the previous exercise.

Meanwhile, the re-bid exercise has already started. The revised terms of reference for the pre-qualification were prepared and advertised. Sixteen firms responded by collecting documents. Out of those sixteen firms, only 8 firms made their submissions. Evaluation for prequalification is in progress now. At the same time revision of the bid documents to take care of the shortfalls which occurred in the previous exercise is also in progress. The consultants have already submitted their proposals on the revised bid documents, which are being reviewed by DTT.

Issues Encountered:

Several issues were encountered during the bidding process which either did slow the progress or made it difficult to get through. Some of those issues are described below:-

- **Lack of experience in the privatisation of water supply and sanitation utility.**

(i) Though considerable reforms had already taken place in the sector, when it came to having a private operator, the whole thing was seen by majority of stakeholders as something endangering the reliability and affordability of the services. It took quite sometime to educate them through seminars, meetings and publications.

(ii) There was very little knowledge, among the people entrusted with the exercise, on what should be done. This resulted in delayed actions and sometimes in taking wrong actions.

- **Lack of accurate data on the utility to be privatised.**

Accurate information and data on the firm to be privatised is very important for the intended investors. At the time the decision was taken, there was only scanty information available on DAWASA. Special studies had to be conducted to have the required information prepared.

- **Inadequate legal framework appropriate for privatisation.**

The legal reform on the water supply and sanitation which had been undertaken only covered operation of the utility up to the level of management by Water Boards. These Boards were in fact still owned fully by the Government. The legal framework in place was therefore not capable of taking care of private operator issues.

Having seen this problem, revision of DAWASA Act was made in 1999. Right now further reforms are under way and these are expected to review the portions of the DAWASA Act, 1999.

- **Inadequate number of investors ready to take part in the privatisation of water and sanitation facilities.**

We have already called for expression of interest in participating in the privatisation of DAWASA twice, but response from investors is not encouraging. In the first instance only three firms showed interest but only two firms eventually submitted their bids. In the second instance, only three new firms showed interest in addition to the three firms which had appeared in the first instance. It is not known yet how many of these will undergo the bidding process to the end.

So far only outside firms have shown interest. No single local firm has come forward yet, despite a special workshop specifically organised to sensitise them. There is a requirement that the selected operator forms a local company with at least 20% shareholding by local investors. As it looks, this may pose a problem at the time the private operator is ready to take off.

RCWSS/2-01/4.WG.C

*Regulatory Regime, Contract Implementation and Monitoring: Country Experiences***DEPARTMENT OF WATER AFFAIRS AND FORESTRY
REPUBLIC OF SOUTH AFRICA****THE REGULATORY REFORM OF THE WATER SERVICES SECTOR****1. INTRODUCTION**

The government of South Africa welcomes the participation of the private sector in its efforts to improve the delivery of services to its customers. In recent years there has been increased participation in the water services sector by the private sector. The Department of Water Affairs and Forestry is in the process of developing and implementing regulations to create an enabling environment for the sector.

The Department of Water Affairs and Forestry is presently playing the role of the regulator in the water services sector and discussions are already underway to argue for the establishment of an independent regulator or establish a dedicated unit in the department to play that role. This will be a challenging process and international experience and expertise both in Africa and the rest of the world will be needed.

The Department of Water Affairs and Forestry is the national department whose function is to ensure the provision of equitable and sustainable water and sanitation services by local government in order to meet their constitutional obligation. This department is also responsible for the building of competent local government institutions as a form of support to enable them to provide services.

There are, however, other departments that must complement the role of DWAF in order to make service delivery efficient and effective. These departments are the national Department of Health and Department of Provincial and Local Government. To ensure adequate provision of water and sanitation services there are a number of legislation and policy documents created to provide a legal framework for the provision and regulation of these services.

Participation in this conference on the reform of the water and sanitation sector should be viewed as part of our on-going process to obtain further understanding of the need of regulatory regimes and options available to the water sector.

2. THE CONSTITUTION

According to the constitution (the supreme law of the country) both the government and the individual have rights and obligations with regard to basic water supply and sanitation. The constitution sets out the broad institutional framework for service delivery.

Chapter 2 of the constitution (the Bill of Rights) i.e. section 24 guarantees all citizens of a healthy environment. According to this section everyone has a right to:

- An environment not harmful to health or well-being
- An environment protected for the benefit of present and future generations

It further guarantees everyone the right of access to "sufficient water" in section 27b.

The constitution further allows for the division of functions and responsibilities for the three spheres of government in order to achieve these rights. However reasonable legislative and other measures, within the available resources need to be considered to be able to achieve the progressive realisation of these rights.

3. NATIONAL AND PROVINCIAL GOVERNMENT:

- The national government is responsible for the establishment of norms and standards for service provision
- Both the national and provincial governments must support and strengthen the capacity of local government to manage their own affairs, exercise their powers and to perform their functions
- Both national and provincial government have legislative and executive authority to see to the effective performance by municipalities of their functions, by regulating the exercise of this executive authority

4. LOCAL GOVERNMENT

The local government is responsible for the provision of local services to consumers. According to schedule 4b, water and sanitation services which are perceived to be limited to potable water supply systems, domestic waste water and sewage disposal systems, are the responsibility of local government. However this must be done in a sustainable manner.

5. CO-OPERATIVE GOVERNANCE AND INTERGOVERNMENTAL RELATIONS

There must be a continuous and sustained interaction among the three spheres of government and they must support each other in a spirit of co-operative government.

Equitable share

In the constitution an allowance is made for the funding of municipal functions through a National Equitable Share Fund. Local government will be able to use the equitable share to pay for running costs for municipal services. Funds will be targeted at low-income families.

To fulfill its constitutional obligations the governments has created legislation for water and sanitation delivery. These legislation and framework are discussed in the following sections.

6. THE WATER SERVICES ACT (ACT 108 OF 1997)

This Act was signed into Law 1997. The Act sets out norms and standards for water services delivery in the country. It defines the roles and functions of the different spheres of government for the provision of water and sanitation. The overall objective of the Act is to assist local government in its function of water services provision to ensure effective, efficient, affordable and equitable access to water services for all people.

Some of the objectives of the Act are to –

- Ensure and define the right of access to basic water supply and basic sanitation services
- Set out the rights and duties of those who provide services, those who are responsible for providing services and those of consumers,
- Allow the Minister of DWAF to set national standards (including norms and standards for tariffs) to ensure enough continuous, affordable, and equitable water services. All water services providers must comply with these standards,
- Promote, support and strengthen the capacity and authority of local government, while creating mechanisms that will allow the provincial and national government as well as consumers to monitor its performance,
- Regulate contracts for the provision of water services to promote the fair and transparent provision thereof,
- Create effective and financially viable statutory institutions to assist local government in fulfilling its obligations under the Act

Rights and duties

As already indicated above one of the objectives of the Act is that it sets out the rights and duties of consumers, water services authority (those responsible for provision of water services i.e. water services authority), and water services providers (those actually providing water services).

Rights of Consumers

The Water Services Act, 1997 (Act No. 108, 1997) confirms that everyone has a right to basic water supply and a right to basic sanitation. What this basic water supply and basic sanitation means is prescribed by the minister. This is currently described as 25 liters per person per day, within 200m of the person's dwelling. The 25 liters is argued by health experts to be little for someone to perform his/her daily household need to meet the minimum health requirements.

It is based on these rights that the government of South Africa has undertaken a study to develop a strategy and guidelines for local government to provide free basic services (water and electricity) to the poor. The debate around free water is currently ongoing although a decision has already been taken at cabinet level to implement this.

The consumer also has a right to sufficient information so that he or she is aware of important aspects involved in water services provided or that will be provided to him or her.

Limits to the rights in the Act

Below are the limitations placed by the act on rights given:

- Access to water services must be through the water services authority and that no person may operate as a water services provider without the approval of the water services authority concerned,
- Access is subject to the availability of financial, human and natural resources,
- Consumers have a duty to pay reasonable charges for water services provided
- The water services authority has a right to limit or discontinue water services if reasonable conditions including payment, are not met. However this process should be fair; must include notice to a consumer of the intention to limit or discontinue the service, and must provide for an opportunity to make representations, before steps are taken. No person's access may be limited or discontinued if that person can prove to the water services authority that he or she is unable to pay for services.

7. WATER SERVICES PROVIDER

A water services provider is the local government structure that is responsible for providing the water services to consumers or other water services institutions in a specific area. A water services authority is the structure that actually provides the water services to a consumer or other water services institutions. A water services authority must make sure that consumers get water services that are compliant with the act i.e.: affordable; efficient; economical and sustainable.

A water services authority can choose to be the water services provider, or it can appoint another water services authority, a water board, a voluntary water committee or a private company as the provider. Where the water services provider is the same as the water services authority then the authority must manage the water services functions separately from other activities, and must keep the financial accounts related to the water services separately from the other accounts.

There must be a contract between the water services provider and water services authority. The contract must be public knowledge. The water services authority must consider public water services providers before entering into an agreement with private providers.

8. WATER SERVICES INTERMEDIARIES

This is a person or organisation that provides water and/or sanitation to people as a minor part of a contract. Examples of these are a farmer who provides water and/or sanitation to farm labourers; mines with company housing and hostels and

a landlord with tenants who pay to live on the property is a water services intermediary. A water services intermediary must meet the standards as set by the Minister and the water services authority concerned.

If a water services intermediary fails to perform effectively the authority may direct it to rectify this failure. If it fails to rectify, the authority may, after a reasonable opportunity given to the intermediary make submissions to it and after a hearing on the intermediary's submissions, take over the relevant functions on behalf of the intermediary until such time that the intermediary is in a position to resume its functions effectively.

9. WATER BOARDS

A water board is an institution that provides water to other services institutions within a defined area. The water board can only be established by the Minister. Their executive authority is vested only in the minister to make sure the activities of the board serve both national and regional interests.

A water board is allowed to perform other activities provided that it does not limit its capacity to perform its primary activity and is not likely to be to the financial detriment of the board, water services institutions, consumers or other users, that are situated within its defined services area and are served by it. Other services could include providing management services, training and other support services to water services authorities etc.

Water boards are regulated and monitored with the following instruments:

- The board is required to prepare a policy statement on specific matters listed in the act. This allows the minister to have an overall view of the activities of the board
- The board must prepare an annual business plan for the next five financial years. The information to be provided in the business is:
 - each specific primary and other activity to be undertaken and the performance targets for each;
 - the tariff applicable to each service, the method by which it was determined;
 - the motivation for the tariff and the estimated tariff income;
 - forecasts of capital expenditure for the primary and other activities for the next five years; and
 - any other information which the minister may prescribe from time to time.
- The board must further prepare an annual report on the activities of the board for each financial year with financial statements included

The Minister has the power to amend its policy statement and business plan if it is not in the best interest of the general population served by the board or not in accordance with the act.

10. WATER SERVICES COMMITTEES

Water services committees are established by the Minister to provide water services to consumers within a defined area. They are established after a wide consultation with: affected community; the relevant province (MEC for Local Government; affected water services authority; and The Minister of Development Planning and Local Government.

Others see water Services Committees as safety nets. If a water services authority lacks the capacity to fulfill its functions – the minister can set up a water services committee to provide services to consumers within its area of jurisdiction. As soon as the Minister is satisfied with the ability of the of the water services authority to provide the services effectively the water committee must be disestablished.

The water services committee must clearly sets out the conditions under which it will provide the water services. This information must be made available to the local community. Anybody who uses water services provided by the water services committee agrees to the conditions set by the committee.

11. MONITORING AND INTERVENTION

Water services authorities must monitor the performance of water services providers and water services intermediaries within its area of jurisdiction and to make sure that they are complying with the Act. The Minister and Provinces must also check the performance of water service institutions to ensure compliance to the Act.

Intervention is requested from the relevant Province by the Minister in terms of section 139 of the constitution if the Minister feels that a water services authority has not done one or more of the jobs it is supposed to do. If the province fails to intervene effectively the Minister has the power to do whatever is needed to fulfill that function effectively. These may be:

- assuming responsibility for that function by directing the water services authority to fulfill that function effectively
- providing financial, managerial and technical advice and assistance,
- or on notice to the water services authority taking over any of its functions to the necessary extent

If the National Council of Provinces has not approved the take-over, a take-over must end.

12. WATER SERVICES DEVELOPMENT PLANS

Each water services authority is required to prepare and implement a water services development plan in consultation with the MEC for Local Government and the local community for its area. The plan must:

- be developed within one year of the commencement of the Act
- detail information on current and future water services provision
- set out time frames for the provision of water services to those currently not served
- indicate how industry can use water and how it can get rid of its polluted water

13. WATER FOR INDUSTRIAL USE AND DISPOSAL OF POLLUTED WATER

To get access to water industry needs permission from the water services authority in the area. The authority must also approve the industry's methods of effluent disposal. If there is a problem with the industrial use of water or the disposal of effluent, the minister can be asked to confirm, change or withdraw any decision of the authority concerned.

14. NORMS AND STANDARDS (SECTION 9 REGULATIONS)

The Minister is in charge of setting national standards for:

- the quality of water;
- the effective and sustainable use of water resources;
- the nature, operation, efficiency and viability of water services;
- the requirements for people who install and operate water services works;
- the construction and functioning of water services; and

The Minister may in concurrence with the Minister of Finance set norms and standards for tariffs to ensure affordable and equal access to water services. To achieve these norms and standards may:

- place limitations on surplus, profit and the use of income generated by the recovery of charges
- provide for tariffs to be used to promote water conservation
- differentiate on an equitable basis between different types of water services, different users, and different geographical areas are allowed

Water services institutions are expected to comply with the prescribed standards and may not use a tariff, which is substantially different from any prescribed norms and standards.

15. THE NATIONAL WATER ACT, 1998

The main emphasis of this Act is on the country's scarce water resources. It aims to regulate water use to ensure equitable and sustainable use of available water resources. It aims to ensure that the water resources are protected,

used, developed, conserved, managed and controlled. The Act wants to make sure that the management of these scarce resources is based not only technical considerations but also on social, economic, political and environmental considerations.

For the purpose of this exercise, the National Water Act is not reviewed in much detail, as it does not detail a framework for the water supply and sanitation services to households.

16. LOCAL GOVERNMENT LEGISLATION

With local government being constitutionally responsible for provision of water and sanitation services, the government realizes that it has a duty to create competent local government structures to provide effective services delivery. The Department of Development Planning and Local Government created a number of legislation to support local government institutions.

16.1 LOCAL GOVERNMENT MUNICIPAL STRUCTURES ACT 1998

This Act defines the institutional and political systems of municipalities. It determines the categories, types, powers and functions of municipalities.

16.2 LOCAL GOVERNMENT MUNICIPAL SYSTEMS ACT 1999

The act focuses on the internal administrative functions of municipalities, including human resources, labour relations, financial and development planning.

16.3 LOCAL GOVERNMENT MUNICIPAL DEMARCATION ACT 1998

This Act defines the process for establishing a demarcation board, and the principles and criteria within which the board will set about re-demarcating municipal boundaries.

17. REGULATIONS

The water sector is undergoing fundamental changes and consequently, millions of dollars are being spent upgrading and operating existing infrastructure. There is also the challenge to provide millions of poor people from under-developed areas with running water. Governments on their own are not able to provide these services and therefore the need for partnerships. Public-Public Partnerships or Public Private Partnerships is one of the options facing us.

The involvement of the private sector requires a body with the necessary skills and expertise to regulate the industry. The focus on profits by the private sector in contrast to the focus on the provision of basic services to poor communities by government need to be balanced. It would require an effort for the private sector to be involved in rural areas where the returns on investments are low or non-existent.

Governments need to be committed to the protection of consumer interests in order to ensure an equitable and reliable provision of services. The regulation of price and a margin on profits should be clearly defined in the regulations.

18. NATIONAL REGULATOR

The provision of water services is the function of local government. The regulations should be implemented at local level. The contracts for the provision of services are entered into at local level. The question is whether local government should regulate these contracts with the national regulator overseeing the whole process.

The Department of Water Affairs and Forestry is presently playing the role of national regulator in the water services sector. Discussions are already underway to establish the need for a dedicated regulatory unit within the department or an independent regulator. International expertise and experience will be important in this challenging phase.

Abstract**WATER SECTOR REFORMS AND REGULATING IN ZAMBIA**

Gsward M. Chanda, NWASCO - Zambia

The Government of the Republic of Zambia has reorganized the water sector in Zambia, commercialising water supply and sanitation service provision and devolving the responsibility to the local authorities and the private sector. Various options for private sector participation have been given within the confines of the law. The Zambian government has been implementing water sector reforms since 1993, has clearly defined legal and institutional frameworks for providing water supply and sanitation services and has further lead to the establishment of an independent regulatory agency. The framework of the water sector reforms is clearly defined in the National Water Policy and is summarised as follows in the seven sector principles:

1. Separation of water resource management from water supply and sanitation.
2. Separation of regulatory and executive functions.
3. Devolution of authority to Local Authorities and private enterprises.
4. Achievement of full cost recovery for the water supply and sanitation services through user charges in the long run.
5. Human Resource Development leading to more effective institutions.
6. The use of technologies which are more appropriate to local conditions.
7. Increased Government priority and budget spending to the sector.

Nine commercial utilities have been established with at least three more expected to be formed. Water supply and sanitation service provision is a natural monopoly, therefore the Zambian government has established the National Water Supply and Sanitation Council (NWASCO) under the Water Supply and Sanitation Act of 1997 to regulate all water and sanitation services providers in the country for improved efficiency and sustainability.

In order to achieve this new policy direction, new techniques and instruments for regulating the water providers are required. NWASCO regulates all aspects of the water supply and sanitation in both public and private institutions. NWASCO has been mandated to ensure that there is improved serviced delivery and coverage of water supply and sanitation in the country, through regulating the service providers. This means the services are extended to all within the service area including the poor, there is an acceptable minimum service level, increased efficiency in service delivery and acceptable tariff policies and removing monopolistic tendencies.

To achieve this, NWASCO will employ comparative competition, promote efficiency gains, fix charging limits, monitor investments, expenditure, incentives and set penalties. Licensing is the key instrument for achieving this goal.

There is transparency in regulating providers through representation by a wide spectrum of stakeholders on the board of the regulator. The providers have been given an option to seek redress from the judiciary in the event of an unsatisfactory decision from the regulator.

The presentation outlines the Zambian experience and major achievements of the water sector reforms and the working of the water regulator.

INSTITUTIONAL REFORM FOR SANITATION SERVICES

RCWSS/2-01/5A.1

URBAN SANITATION: THE NEED FOR A STRATEGIC APPROACH

Abulman Saifu & Jean Doyen, Water and Sanitation Program - Africa (WSP-A)

Overview

In Africa, rapid urbanization is largely taking place through the expansion of *informal and peri-urban settlements*. Central governments, municipal agencies and utilities have failed to provide water and sanitation services to this segment of the urban poor. Alternatives that involve communities and informal services providers are, generally, inadequate and relatively expensive.

Up to now, these settlements were considered a marginal and transitory phenomenon by many governments. Gradually, however, countries are waking up to the reality that these settlements are here to stay. In fact informal settlements absorb the largest part of urban growth; in the capital cities of the region they account for 40% to 60% of the city population. In Nairobi, informal settlements shelter about 50% of the population on 5% of developed urban land (Box 1). It is in these settlements that the challenges of urban poverty and environmental degradation will have to be met.

The present paper briefly reviews the characteristics of informal settlements and the sanitation services available to their inhabitants. It then outlines the way forward on the basis of emerging experience from the region. Finally, it provides an overview of the cost involved and who should bear them.

Characteristics of Informal Settlements

Informal settlements dot the landscape of many large African cities - Nairobi, Lagos, and Abidjan. They serve as the "first-stop" for many poor people on rural-urban migration who provide the bulk of informal labor to their adjoining city areas. They reflect the fact that in many countries in Africa urban growth has outstripped the capacity of municipal administrations to plan urban space and provide basic services.

High-density slums are found on low-grade land or public reserves located close to central business districts or industrial areas. They provide no security of tenure and have typically a high proportion of tenants. In Kibera, more than 75% of residents are tenants and there is the same proportion of absentee "slumlords".

Peri-urban settlements grow at the fringes of urban areas as a result of the initiatives of individuals and private developers subdividing land and building structures ahead of any formal urban planning outside of the relevant regulatory frameworks. This is the case for Accra, Lomé and Kampala. While in most cases peri-urban settlers have some degree of security in land tenure their settlements are developed without basic services; roads, drains, communal facilities etc.

Poverty and precarity lead to low standards. The dwellings are often made from cardboard, wooden planks, dilapidated metal sheets, polythene and canvasses. These are often perched on eroding embankments of natural drainage ditches.

Municipal and administrative services in informal settlements are typically grossly inadequate. It is common to find a low-level local branch of municipal administration serving several ten of thousands of people from a makeshift building.

For water utilities, the extension of water supply services to informal and peri-urban settlements presents considerable risks due to the uncertainty of land tenure, uncontrolled development, high proportion of tenancy, low and precarious income, and lack of security (vandalism, difficulties in billing and collection). In a number of countries, utilities are explicitly prevented by policy or regulatory strictures from serving such informal settlements. When utilities have been mandated to provide minimum lifeline services to informal settlements (often as a measure against cholera outbreaks) they have found it difficult to do anything more than scattered and unreliable standpipes.

Poor households of informal settlements primarily depend on small-scale-independent providers (SSIP) and, in some cases, communal self-help with support from NGOs for basic services. While the role of SSIP's has up to now not been recognized, recent surveys in Dar Es Salaam, Kampala and Nairobi, have shown that the proportion of households

obtaining services from SSIP's is as high 30% for water and 50% for sanitation; for poor urban households the proportion are close to 80% and 90.

Poor households typically pay higher cost for water and sanitation services than users served by the utility. The ratio of between prices charged by private vendors and public utilities for water in a number of African cities are as follows : Togo, Lomé (10); Uganda, Kampala (4-9); Kenya, Nairobi (11); Mauritania, Nouakchott (100), Ivory Coast, Abidjan (5)¹. In Accra (Ghana) the freight charge by water tankers is more than 5 times the cost of water.

In a number of cases, NGOs provide support through community groups but they generally operate in isolation with high overheads. The lack of "trunk" infrastructure limit their effectiveness. In Addis Ababa (Box 1), about 23 NGOs run 72 community-based environmental sanitation projects (CBES). The average value of each CBES project is about US\$300,000.00. In Nairobi, 250 NGOs are active in the nine villages that make up Kibera (Box 2). Fragmented operations, and weak or non-existent municipal support services have restricted and prevented scaling-up and replication of successful NGO initiatives.

Sanitation in Informal Settlements

Investments in urban environmental sanitation services are wholly inadequate for many countries of the region and poor households of informal and peri-urban settlements who bear the brunt of the consequences in terms of ill health, unfit living conditions and lost opportunities.

Box 1: Addis Ababa

Addis Ababa with an approximate pop. of 2,400,000 people has less than 10% served by sewerage, 60% depend on dry-pit latrines and 5% use septic tanks whilst some 25% of residents have no sanitation services. Solid waste services cover less than 45%. Open-ditches serve many parts of the city and are used as open sewers and refuse depositories.

In 118 Community-Based Environmental Sanitation Projects (CBES) examined more than 65% of projects are delivered by NGOs with little coordination and integrated approach to projects focus.

(Source: WSP-ESA Field Note: Environmental Sanitation in Addis Ababa)

Excreta Disposal: the high densities and the prevalence of tenants and the lack of enforcement of environmental and hygiene standards lead to as little space as possible "wasted " for the installation of sanitation facilities. Congestion and low-standards, 150 persons per pit reported in Kibera (Box 2), lead to clandestine modes of disposal.

Box 2: Kibera (Nairobi)

The informal settlement of Kibera, located in a drainage reservation area, provides shelter to 500,000 persons (more than a quarter of Nairobi's population). The settlement area is only 250 hectares and so it has one of the highest densities in the region (2,000 persons per hectare).

Excreta & Sullage Disposal

- Lack of space for toilet construction and landlords unwillingness to convert rooms (loss of income) and incur extra costs.
- 69% of residents use "flying toilets" (wrap and throw method, using polythene bags).
- 80% of latrines are emptied manually by discharge into drainage ditches. Vacu-Tug serves a small portion of the community due to lack of access.
- There is organized seizure of communal toilets by influential landlords who restrict usage to their tenants.
- 75% of residents use living rooms for ablution and wastewater thrown into nearby ditches.

(Source: WSP-ESA Field Note: Water and Environmental Sanitation Needs of Kibera)

In parts of Accra and Lagos EMS (expedited mail-shit) service is practiced – where wrapped black polythene bags are left, stealthily, in vacant lots and dark alleys. In Kibera, Nairobi, "flying toilets" is the most common mode of disposal.

The lack of access to reach the few constructed latrines and communal toilets leads to manual emptying into ditches and vacant plots. Where small motorised vehicles (e.g. Vacu Tug) are used, final discharge of septage is often just at the outskirts of settlements because of lack of access to sewer main or treatment facilities.

Drainage: natural drainage ditches and storm water gullies serve as the conveyance infrastructure for liquid and solid waste.

The construction of structures in flood plains and often across drainage channels bring a lot of pollution health hazards as many of the dwellings become inundated during rainy seasons.

¹ Bathia, R. and Falkenmark, M. (1993), Water Resources Policies and the Urban Poor: Innovative Approaches and Policy Imperatives, Water & Sanitation Currents, UNDP-World Bank WSP.

Primary drainage infrastructure like main roads need to be planned as part of city-wide networks and are not suitable for investments by community groups. In some cases, efforts have been sabotaged as people settled downstream become alarmed at the consequences of any drainage improvements upstream. The same lack of primary and secondary infrastructure dissuade investments in tertiary drains even if landlords grudgingly agree to provide them.

Solid Waste: solid waste services provided by municipalities in many developing countries of Africa cover on the average only 45% city-wide. Informal settlements are, normally, not covered and dumping in open spaces, into drainage channels, burning and burial of refuse (in that order) are the options open to households.

Refuse collection stands out as one aspect of urban environmental sanitation services which has high public good attributes. It has been a priority area for community initiatives. Primary collection need to be co-ordinated with city-wide arrangements for haulage and final disposal.

There is a number of successful examples of primary collection systems organized by NGOs and community groups with many of them relying on SSIP's for refuse collection and transportation. In a peri-urban settlement in Kumasi (Ghana), the use of animal-drawn carts, small motorised vehicles and tractors with trailers performed very good primary collection services but the weak link was the transfer of communal containers to the final disposal site by the municipality.

The Way Forward

Many developing countries recognise that improvement in infrastructure services to informal settlements is a key component of the fight against urban poverty. Informal settlements cannot be bulldozed away as the problems simply shift to other adjoining areas, not to mention the hardship on people. Improvements will have to be gradual and respect the needs of communities that live in such settlements.

Community-based infrastructure upgrading schemes with minimum of resettlement and dislocation is broadly accepted as the method of choice and constitute the framework under which urban environmental sanitation programs will have to be planned and implemented.

In mapping out the way forward, it is useful to keep in mind the gradual process through which sanitation services gradually emerge as towns grow into cities. The development ladder of sanitation infrastructure and services, typically, progress through the following steps;

- Absence of collection or conveyance infrastructure for sewage and grey water, with reliance on natural drains along roads with discharge into rivers and downstream flood plains;
- Construction of lined drains and sewers for handling both storm water and wastewater, with on-site sanitation facilities for individual premises; sewerage network serving the central business district and privileged areas;
- Construction of dedicated wastewater collection and conveyance infrastructure to handle discharge of larger volumes of wastewater from increased population of municipalities;

At this stage drain fields and subterranean soils serving septic tanks and on-plot latrines have reached saturation and have become inadequate for high housing and population densities. This is some 50 - 60 years after the installation of the on-site systems.

At a later stage:

- Development of treatment plants at out-falls of conveyance infrastructure.

The above process, in a number of cases, evolves out of concern for the conditions of downstream settlements (in flood plain areas) and for the pollution of water resources.

The Need for Strategies

Several countries as well as cities (Zambia, Nairobi) have found it useful to prepare strategies aimed at improving environmental sanitation and water supply services for informal settlements. Such strategies are useful :

- (i) to create consensus among various institutional actors and stakeholders;
- (ii) to establish common framework for coordinated action and partnerships;
- (iii) to remove legal/regulatory obstacles and define needed institutional reform;
- (iv) to clarify sources of funding for various components at different levels (users/households, neighborhoods, village/settlement, municipality, and central government).

Informal settlements strategies have also included a review of the range of technology options with particular attention to low-cost options, maintenance and management implications.

All strategies recognize the need to combine community initiatives with small scale providers, utilities and municipal agencies. They also emphasize users choice and cost recovery. Finally, they stress the importance of intensive formation, education and communication to promote hygiene and to mobilize communities and strengthen their role in planning and oversight.

From Strategies to Programs

The experience of the city of Kumasi (Ghana) has led to the strategic sanitation approach (See Box 3). The SSP process is geared to achieve the following outputs:

- examination of a range of technical solutions;
- assessment of options to fit the peculiar situations of different communities;
- provide flexible solutions which can change over time; and
- an integrated approach to sanitation development.

The SSP approach enables decentralised decision making and address how to:

- work at the urban community level (including informal settlements);
- involve local authorities (including traditional rulers), and decentralised structures;
- develop local capacities;
- enable shared management within the institutional framework (defined roles/programs of public institutions, SSIP's and households);
- emphasise real opportunities and incentives for all stakeholders; and
- work within a global context for urban development.

Box 3: Elements of Kumasi SSP

- **Sewerage Improvement**
 - pilot simplified sewerage
 - improve satellite sewerage with community management
 - promote SSIPs in de-sludging services
- **Improvement of Public Toilets Mgt.**
 - pilot management by SSIP's
 - scale-up city-wide and enable BOT schemes by SSIP's
- **School Sanitation**
 - provide investment profile for school facilities
 - school hygiene curriculum development & promotion
- **On-Site Sanitation**
 - pilot community revolving loan scheme
 - scale-up city-wide and involve SSIP's in promotion and delivery
- **Institutional Capacity Building**
 - establish waste management Dept.
 - defined roles of SSIP's, and program capacity development needs

(See WSP-WCA, Ouagadougou and Kumasi Sanitation Projects: A comparative Case Study)

The SSP recognised that "sanitation is a way of life" and starts at the personal level of the household unit before aggregating into a community or public good. Understanding the factors that drive the demand for improved environmental sanitation by households and by communities is critical. The constraints and incentives for hygiene promotion and social marketing need to be identified for each community.

Embedded in the SSP is the concept that the achievement of a clean and healthy environment is a long-term goal that can only be achieved in small steps² in pace with the demand and capacity of households.

Although much has yet to be learned from the regional experience, the following guiding principles can be put forward for the design of environmental sanitation programs for informal settlements.

² see Field Note, WSP - South Asia. "Guiding Principles of Sanitation Development Plan" in Urban Environmental Sanitation Planning: Lessons from Bharatpur, Rajasthan, India.

Emerging principles:

- Establishment of settlement specific institutional capacity for planning and implementation of local infrastructure investment and for overseeing support to community initiatives (e.g. Local Infrastructure Board);
- Up-front emphasis on community participation through information, training and mobilisation including hygiene and sanitation promotion and marketing;
- Close "vertical" co-ordination between improvements in trunk systems under the responsibility of municipal agencies and utilities, and community initiatives; e.g. roads and secondary and primary drain; sewer mains; final solid waste haulage and disposal.
- "Horizontal" coordination between interventions in different sub-sectors: e.g. drainage and roads, drainage and solid waste management.
- Commitment to address land tenure issues in a manner that recognizes the needs of current occupants and involves the community. The civic capital and organizational capacity developed through community participation in environmental sanitation programs would be applied to the more difficult issue of land tenure reform.

The challenge is to establish an institutional framework and financing mechanism that harness households' and communities' resources for neighborhoods services and facilities, and that ensure co-ordination with investments in trunk infrastructure and services.

Table 3 provides examples of environmental sanitation programs targeted at informal settlements.

Box 4: Cost Allocation and Financing Mechanisms - Based on "Incidence of Benefits"

Incidence of Benefits	Service Type	Cost Allocation to		Financing Mechanisms
		Investments	O & M	
Private	On-plot infrastructure (e.g. household latrines, WC fixture + septic tank, house-to-house waste collection, tertiary drainage)	Households	Household	Home saving + in-kind labor Neighbors labor Credit scheme Subsidies for targeted component and over a limited demonstration period (investments only)
Neighborhood	Share neighborhood infrastructure (e.g. Neighborhood public latrines or sanitation marts, institutional – school, prisons, health centers, latrines, collector sewers, waste transport, secondary drainage)	Communities Government, utilities	Block Governance unit (ward, unit committee, commune) School Hygiene Education Committees	Neighborhood taxes Rotating credits Community tariffs User fees Private sector financing (leasing and BOT)
Public	Infrastructure and services with broader externalities (e.g. treatment facilities, landfill, primary drainage, artisan training, hygiene promotion)	Municipality Government, Utilities	City or village wide District wide Nationwide	General city or village taxes (property rates, surcharge on utility bills) National indirect taxes (central government or local government transfers, donor transfers) Private sector financing (Leasing, Concession, BOT)

How much and where from ?

Strategies for delivery of improved sanitation services for informal settlements need to be founded on a clear understanding of who pays for what in terms of "software", capital costs and O&M. Box 4 illustrates a framework for cost allocations and financing sources reflecting the distribution of benefits among households, neighborhood communities, settlements, the city at large and the nation as a whole.

Costs for environmental sanitation programs should not only cover "hardware" but should also take into account "software" requirements i.e. community mobilisation, training, technical support, hygiene promotion etc. Hygiene education and sanitation improvement campaigns improve social welfare. The externalities resulting from hygiene education go beyond the confines of communities, and so there is a strong case for a larger proportion of financing for education and related strategies (such as PHAST) to be borne by central governments.

Tables 1 and 2, below, indicate the order of magnitude for investments required and unit costs for sanitation and water services for developing countries over the next 25 years. The GWP estimates show that investment costs for sanitation and hygiene improvement will have to increase 17 times, and municipal waste water treatment 5 times, above current levels.

Table 1: GWP- FFA³ Indicatives Annual Investment (US \$billions)

	Today	2000-2025
Access to drinking water	13	13
Sanitation and Hygiene	1	17
Municipal waste water treatment	14	70
Others: Industrial Effluents, Agric. & Env.	47	80
Total	75	180

Table 2: Average Unit Costs per Person are as follows (US\$ per person)

VISION 21 Basic services ⁴		GWP-FFA	
Urban water	50	WS standpipe	50
Household connection	200		
Peri-Urban sanitation & hygiene	25	Basic pit latrine	25
		Condominial	75
Rural water	15	Potable water	15
Rural sanitation & hygiene	10	Sanitation & hygiene	10

Mobilising additional resources for sanitation may not be easy as a lot of the initial investments will have to be directed at sensitizing the primary contributors of the resources; governments and communities.

Informal and peri-urban settlements make up to 50% of the urban population of many urban cities of developing countries, therefore, a large proportion of investments have to be mobilised and channeled to these areas.

As an illustration, employing the basic level of services of Vision 21, and assuming a growth rate of 4% for Kibera, the population of this informal slum will grow, on the average by 25,000 annually. To achieve and maintain a 60% sanitation

³ Global Water Partnership (GWP), Towards Water Security: A Framework for Action (FFA). Investing for a Secure Water Future.

⁴ WSSCC, Vision 21: A shared Vision for Hygiene, Water Supply and Sanitation & A Framework for Action – Mobilizing External Resources.

services coverage for Kibera requires investment levels of about \$6 million annually over the next ten years. For on-site sanitation systems, \$600,000 will be required, annually, towards operation and maintenance management.

Summing up

African countries and their partners have taken up the challenge of improving environmental sanitation in informal and peri-urban settlements. Related programs are seen as essential components of all poverty eradication strategies.

The emerging regional experience suggest the following key steps:

- First, to start with the preparation of country or city level strategies specifically directed at water and sanitation services for informal settlements. Such strategies will define guiding principles and identify institutional roles and foster partnerships among trunk institutions (municipalities, utilities), communities and small scale providers.
- Second, to launch settlement-specific environmental sanitation and local infrastructure programs combining support to community initiatives, improvement in trunk services and build-up of community capacity for participation and oversight.
- The third element would be to develop city-wide frameworks and programs to replicate successful models to other settlements and to integrate informal settlements in the framework of municipal institutional arrangements and budget planning.

Our challenge as water supply and sanitation professionals is to support the move from problem recognition and pilots to scaled-up long term programs.

Table 3: Examples of Approaches that Trigger Sustainability

Project Name/Location	Project(s) Focus	Coverage	Innovative Approach	Sustainability Principles	Sustainability Indicators
1. PROSANEAR, Brazil	Water/Sewerage to Urban Poor (Favelas)	Water/Sewerage connections to about 1 m residents in 60 low-income settlements in 17 cities.	Project/Community Devp.-Centred Approach	<ul style="list-style-type: none"> • Up front Community Participation • Low-cost Tech. Options/Cost Recovery • Environmental Protection • Improved Household/Community Identity 	<ul style="list-style-type: none"> • Long-term arrangements for O&M of low-cost (robust systems) established; • Community structured to demand/respond to other Community Infrastructure /amenity improvement programs.
2. Ahmedabad Parivartan, India	Pilot Community Infrastructure Upgrading to urban poor (Sanjaynagar)	Roads/paving, water supply, sewerage, street lighting, solid waste management, landscaping to 181 households. Target : 1,029 informal settlements(300,000) families. 40% of Ahmedabad Municipality	CBOs as key players, Multi-agent partnerships which allows service delivery to meet demand	<ul style="list-style-type: none"> • Setting project rules within city-wide plans • Integrated infrastructure development • Community-designed financing arrangements for identified projects • Costs/ Costs sharing arrangements clearly defined 	<ul style="list-style-type: none"> • clear rules on household contributions on costs and O&M • Partnerships with CBOs, NGOs and Trusts with long-term development Agenda • community-led soliciting of financing from trusts
3. Port-au-Prince Water Supply, Haiti	Improving Water Supply to poor households	Water-supply extension to 10% of city neighborhoods	NGO/Community Water Committees responsible for neighborhood secondary water reticulation/distribution systems	<ul style="list-style-type: none"> • Community-selected water committees • transparent community-negotiated and set tariffs for payments to utility and running costs 	<ul style="list-style-type: none"> • lowered water bills plus extension of household coverage • benefits of surplus water committees generated funds used for neighborhood development (drains, showers, meeting rooms)
4. Ouagadougou, Burkina Faso	Sanitation improvement to the city of Ouagadougou	Provision of VIPs and pour-flush toilets to low-income neighborhoods	Utility financing of on-site sanitation promotion /campaign and re-investing sanitation surcharge on sanitation infrastructure	<ul style="list-style-type: none"> • Community engagement and consensus building • Large scale information sharing and social marketing involving schools • Capacity building of SSIPs 	<ul style="list-style-type: none"> • clear incentives for household participation - surcharge on water • No external subsidy for investments for on-plot sanitation infrastructure.

WATER SECURITY THROUGH INTEGRATED WATER RESOURCES MANAGEMENT

1. Introduction

In this presentation, Integrated Water Resource Management is discussed with reference to the urban water supply and sanitation sub-sector.

2. The Need for Water Supply and Sanitation Sector Reform

It has been observed that Africa is currently the region which is urbanizing most rapidly in the world. It is estimated that "between 1990 and 2025 Africa's urban population is expected to grow from 150 million to 700 million representing an increase in the percentage of the total population from 30% to 52%".⁵ It has also been noted that while a greater percentage of the urban population will be found in large cities the bulk of the growth will be in small informal settlements which are unplanned and consequently unserved. People housed in these settlements have very low levels of access to affordable water supply and sanitation services. It is estimated that only 64% of Africa's urban population have access to safe water supply and 55% have access to sanitation, with even smaller percentages having house connections and water borne sanitation.⁶ It is also unfortunate to note that the above service level estimates are based on design capacity of the existing infrastructures and not on their actual operating conditions. In reality, it may be found that the service levels are much lower due to either malfunctioning or poorly functioning of these old, inadequate infrastructures.

The current pathetic water supply and sanitation service situation in urban and especially in the peri-urban areas is attributed to several factors. First, the rapid urbanization observed in many, if not all, African countries is putting heavy stress on the water supply and sanitation infrastructures. The current demand for water and sanitation services that is partly due to increased urban population and a desire for higher living standards, exceeds the capacity of the existing installations. Second, old sources of water are inadequate to cope with the present, let alone, future demands. Third, the unplanned and uncontrolled urban settlements, especially of the peri-urban areas, make it difficult to develop adequate water supply systems, let alone, sanitation infrastructures. Consequently, lack of appropriate and adequate sanitation facilities leads to haphazard disposal of untreated or inadequately treated wastewater thereby causing pollution of both surface and groundwater sources. Fourth, the deficiency in water supply and sanitation delivery can also be attributed partly to lack of adequate funds needed to invest in extending services and partly to deficiencies in the management and the operation of existing facilities. Fifth, in some cases, urban growth has encroached on water sources thereby reducing the sources capacity and affecting the quality of water from those sources. Sixth, the urban water supply and sanitation systems being used in African urban areas are appropriate for planned and controlled settlements (which retain efficient linear corridors) but are, unfortunately not suitable and effective for the current pattern of unplanned urban settlements. The efficiency of these systems is greatly curtailed by the nature of settlements found in the peri-urban areas.⁷

In short, failure of water supply and sanitation utilities to extend services especially to the poor communities that reside in peri-urban areas can be attributed to legal, financial, technical, managerial, institutional constraints as well as lack of appropriate policies that address the plight of people in peri-urban areas.

⁵ WUP 1998, *Strengthening Capacity of Water Utilities to deliver Water Supply and Sanitation Services, Environmental Health and Hygiene Education to Low-Income Urban Communities*.

⁶ Ibid.

⁷ Peter Newman, 2000, "Sustainable urban water systems – Steps towards a new approach" in *Water Security for the 21st Century – Innovative Approaches*, Abstracts, Stockholm Water Symposium

There is obviously a need to take the necessary steps to arrest the deteriorating nature of water supply and sanitation services in urban areas and to reverse the trend. Achievement of this objective will require extensive reforms to be carried out in the water supply and sanitation sector. To begin with, the required reforms will have to take place in the following areas:

Institutional Reforms

Judging from the current situation of water supply and sanitation services, it is obvious that the existing institutional arrangements have not been very successful in delivering the expected services. There is need to effect institutional developments which will be able to respond to the needs of specific areas by taking into consideration a whole range of factors such as the political structure, the unity of the resource in a basin or aquifer, the communities to be served together with their needs, interests, customs and practices.

Community Participation

Water being a resource that affects everybody, it is only logical that every stakeholder should have a say in how it is managed. Consequently, stakeholder participation is essential for effective management of the resource. Participation of stakeholders can take place in different forms. Participation can involve communities coming together and making decisions on what type of service levels they want and can manage. Participation can also be through democratically elected representatives, etc. What is important is that the management system chosen should reflect the views and wishes of the target groups.

Legal reforms

The current thinking in water resource management favors increased community participation as well as private sector participation. There are situations where public private participation appears to be the best solution to water resource management. However, the existing legislation in some countries is not suitable for these types of developments. Public utilities and/or government agencies are still legally recognized as the sole organizations or institutions responsible for the delivery of water and sanitation services. It is also common to find sectorally oriented laws that are contradictory or inconsistent on some aspects of water resource usage.⁸ There is therefore a need to revise water laws to reflect the current thinking on water resource management.

Financial Reforms

Failures by water supply and sanitation utilities to deliver adequate services are often blamed on lack of sufficient resources especially funds. Shortage of funds can partly be attributed to misguided perception of water as a free good to which everybody is entitled to free of charge. This is not a perception restricted to consumers. Previously, some African governments thought that their citizens were entitled to access to free water services. Consequently, legislation or directives were issued which did not require consumers to pay for water. Consequently water allocation did not reflect its limited nature and at times, it was allocated to low-value uses. In the current situation when we recognize that water resource is limited and there is competition for this scarce resource, there is need to recognize the full value of the resource and to price it accordingly.

The nature of the reforms that are being proposed suggest that these cannot be done sectorally. Due to their interrelationships, the proposed reforms have to be effected in an integrated manner if any tangible results are to be achieved. It is for this reason that an integrated approach in water resource management is preferred to sectoral approach. What is this integrated approach?

⁸ Global Water Partnership, 2000. "Integrated Water Resource Management" Technical Advisory Committee (TAC) BACKGROUND PAPERS No.4.

3. Integrated Water Resource Management

Although the words Integrated Water Resource Management (IWRM) are widely used these days when discussing the management and development of the resource, there is no explicit definition of IWRM. In spite of lack of a universally accepted definition of IWRM, there are certain agreed principles that go a long way in describing what IWRM is or what it entails. Based on these principles different institutions dealing with water resources have developed their definitions of IWRM which in essence do not depart very much from each other. Using these principles IWRM can be defined as:

A dynamic process of devising and promoting alternative and coordinated sequences of development and management interventions in water, land and related resources, and selecting the sequences or activities that will optimize the achievement of economic and social well being of all stakeholders in an equitable manner and at the same time ensuring the sustainability of the ecosystem.

The key word and central theme in the above definition is **integration**. It requires integration to involve interaction between human and natural systems. It is important to consider the interaction with the human systems because it is through these systems that water resource use is determined with the consequent impacts on quality and sometimes quantity. It is equally important to examine the interaction with natural systems because it is the natural systems, through the hydrological cycle that determine resource availability and quality.

4. Integrated Water Resource Management and the proposed WSS Sector Reforms

In this section, an attempt will be made to show why the integrated approach is a necessary framework for sustainable sector reform taking cognizance of the inherent interrelationships and interactions between the human and natural systems.

Institutional reforms

The objectives of institutional reforms being proposed is to improve the delivery of water supply so that all the intended targets can get easy access to reliable sources of adequate water of good quality and can at the same time be provided with satisfactory sanitation services. These reforms aim at formulating policies, allocating financial resources and eventually facilitating the development of efficient water supply and sanitation management bodies. However, the expected outcome of these reforms would not be sustainable, if attention were not paid, at the same time, to the natural systems. For example, the physical availability or non-availability of the resource would greatly affect the performance of the institutions. Consequently, an understanding of the physical endowment of the resource is equally important as the creation of the management units. It should also be noted that decisions and actions of the institutions would also impact on the availability of the resource both in quantity and in quality. For instance, plans for increased water supply for domestic and industrial use would have to be formulated taking into consideration the impact they may have on the quality of surface and groundwater resources or other wastewater receiving bodies.

Because of the sectoral approach being used in water resource management, it is common to find two or more institutions from different sectors dealing with the same issues of water supply and sanitation. In carrying out the reforms, it will be necessary to avoid duplication by interacting with other sectors that may be involved with the same issues.

Legal reforms

The fact that water is a key determinant of the character and health of all ecosystems and all economic and social activities, reform of water laws cannot be done in isolation of other laws governing the development, use and management of other resources. For example, land use development, agriculture, forestry development, livestock keeping, fisheries, etc. all depend on water and also affect water resources both in quantity and quality. Effective legislation for sustainable management of water resources demand an integrated approach that would look at and reconcile the water demands of all interrelated sectors. Otherwise, the result would be a collection of conflicting and contradicting legislation.

Stakeholder Participation

There is universal recognition that stakeholder participation in planning and managing water resources is essential in achieving a balanced and sustainable utilisation of water. Water is required for many uses and stakeholders have different and sometimes conflicting uses. To achieve harmony in water use requires recognition of the existence of these uses and developing tools for equitable utilisation of the resource. Thus, there should be interaction among stakeholders. Integration of various sectoral views and interests in decision making is the key to successful water resource management.

Financial reforms

The financial reforms being proposed have their foundation in the principle that looks at water as an economic good with an economic value. Pursuance of this principle leads to concepts of full cost recovery for all water uses and raises the question of how this goal of full cost recovery would affect poor people's access to water. Furthermore, the principle of water as an economic good with its logical goal of full cost recovery seems to contradict another principle that recognizes water as a social good.

It is an indisputable reality that for water utilities and water management agencies to be effective and sustainable, they need to have adequate resources which they can raise sustainably from the water users. It is suggested that, as a minimum, water utilities should recover full supply costs⁹. The question that remains unanswered is: would water users who cannot afford to meet even these minimum costs be denied access to water services? These and many other similar questions show the importance of an integrated approach that would consider social needs together with financial requirements for sustainability purposes.

Conclusion

In effecting sector reforms it is necessary to have a holistic approach which recognises the need to interact with other sectors which, in their operations, depend on water resources and which in the process have impact on it. Therefore, reforms should neither be conceived nor implemented in isolation of other relevant sectors.

⁹ Global Water Partnership, 2000. "Integrated Water Resource Management" Technical Advisory Committee (TAC) BACKGROUND PAPERS No.4. p. 21



This summary is prepared for the sole purpose of presentation on the Regional Conference on the Reform of the Water Supply and Sanitation Sector in Africa. For authoritative, use reference has to be made to the bank group's policy for integrated water resources management approved in March 2000.

(see list of abbreviations and glossary at the end of this summary)

Introduction

1.1 Background

1.1.1 Water plays a crucial role in the economic development of African countries, and in sustaining the natural ecosystems. In Africa, water scarcity, weak policy environment, insufficient knowledge and information, and inadequate institutional capacity and investment are considered as the main factors for the underdevelopment of the water resources potential of the continent. International concerns about water resources management have led to the global consensus on the need to adopt a new approach to managing water resources. The new agenda calls for a comprehensive water resources management framework that integrates social, economic and environmental considerations. In view of these important changes, the Bank Group has reviewed its activities in the field of water resources management and developed this Integrated Water Resources Management (IWRM) Policy.

1.1.2 The IWRM policy rests on the principles that water should be treated as an economic, social and environmental good, and policies and options that guide water resources management should be analyzed within a comprehensive framework. Its central objective is to promote efficient, equitable, and sustainable development through integrated water resources management in Africa. In line with these policy principles and objective, strategies covering the economic, social, and environmental spheres of influence, and the technical and institutional framework have been formulated.

1.1.3 The Bank's mission is to contribute to the economic development and social progress of its regional members with an overarching objective of poverty alleviation. It is self-evident that water issues have considerable relevance for improving and sustaining living standards and human welfare. Over the period 1968-1999, an amount of US \$ 4.63 billion or about 13.3% of the total loan commitments per year have been provided to finance a total of 330 projects. The majority of the loans (62%) have been provided for water supply and sanitation, 26% for irrigation, and 12% for hydropower projects.

1.1.4 Bank-supported investments in the water sector, have suffered operational, social, economic, and environmental problems. The main causes for the poor performance have been inadequate planning within an integrated framework; weak institutional and legislative setup, lack of proper technology choice and development poor cost-recovery; inadequately motivated personnel, and insufficient stakeholder participation.

1.1.5 In the context of its strategic approach, and considering the circumstances of the RMCs, the Bank would play a major role in the water sector in the region. The water sector, due to its linkages with water supply, sanitation, agriculture and irrigation, energy, health and education is regarded as a major instrument in the fight against poverty in the region which is the over-arching objective of Bank operations.

1.2 Existing Situation

1.2.1 The great variability of rainfall and evaporation over Africa presents a significant problem for sustainable management of water resources. Inter-temporal regional and climatic variations, giving rise to alternative periods of floods and drought, will continue to cause uncertainties. The Region's water resources will come under pressure from increased demand created by rapid population growth. Fourteen African countries are experiencing water stress or water scarcity and this figure is expected to increase to twenty-five by year 2025, partly due to the high population growth rate experienced by African countries.

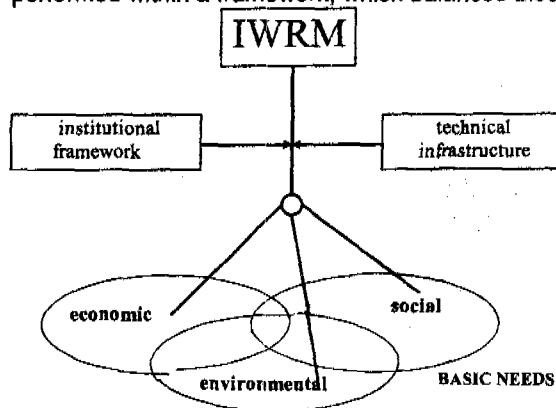
1.2.2 In general, about 65% of the rural population and 25% of the urban population lack access to safe drinking water while 73 % of the rural and 43 % of urban population are without access to adequate sanitation. Of an estimated 185 million hectares of arable land, only 12 million hectares are under irrigation. The total area currently under irrigation constitutes just about one-fourth of the potential irrigable arable land, of about 45 million hectares. Only about 4% of the energy demand is covered by hydropower. The small-scale hydropower potential particularly for rural energy supply is hardly exploited. The potential of other water uses such as tourism, fishing and transportation are hardly developed.

1.2.3 There are 55 major watercourses and lakes, which cross or constitute international borders and shared by the majority of RMCs. The water resources of many internationally shared river basins are subject to inter-country competing demands for various purposes. The equitable sharing of common resources between riparian nations is an important issue in Africa.

CONCEPT AND OBJECTIVES

2.1 Conceptual framework and Vision Context

The technical infrastructure and institutional framework provide the enabling facilities for water resources management. The balancing of the three basic needs –social, environmental and economic–has a crucial bearing on the management of water resources. The needs interact in a symbiotic and dynamic relationship. Water resources management should be performed within a framework, which balances these inter-related needs.



2.1.2 The Bank has defined its vision to be the leading development institution in Africa dedicated to providing quality assistance to RMCs' development effort. The IWRM Policy will function as an important instrument for the fulfillment of the Vision by enabling the sustainable development of water resources for the purpose of attaining the main objective of poverty reduction directly, and also through its congruence with other sub-sectoral and cross-cutting themes of the Vision.

2.1.3 The use of water resources for household consumption, agricultural production, and energy, fulfils critical dimensions of basic human needs for survival and food security. The Policy advocates minimal prices for lifeline water supplies, to enable the poor to have access to water services. Projects in the water sector would be reviewed for their impact to ensure linkages between water resources development and basic and community development programmes. Concerns for environmental sustainability are given priority attention in the Policy. Regional co-operation and integration are encouraged for the proper management of transboundary water resources.

2.2 Basic principles and objective

2.2.1 The Bank Policy on integrated management of water resources has two basic principles and one central objective as follows:

The basic principles are that water should be treated as an economic, social and environmental good, and; policies and options that guide water resources management should be analyzed within an integrated framework. Its central objective is to promote efficient, equitable, and sustainable development through integrated water resources management.

2.2.2 These basic principles and the central objective of the policy should guide the development, utilization and allocation of water resources in RMCs taking into consideration the increasing scarcity and competition between different water uses. Water use from surface and underground sources will be managed in an integrated and holistic way under the most appropriate technical infrastructure and institutional framework. Cost recovery measures will be implemented to facilitate increased private participation without jeopardizing access by the poor. Environmental sustainability and gender sensitivity will be ensured in all aspects of water development and management.

2.2.3 This policy document will provide a framework of reference for Bank Group staff throughout the project cycle for water-related projects and programmes in the regional member countries. It aims to stimulate Regional Member Countries to initiate and formulate national policies on integrated water resources management. It provides the basis for co-ordination of integrated water resources operations with bilateral, multilateral and non-governmental organizations. The implementation of the IWRM policy will strengthen the role of the Bank Group in national, regional and sub-regional programmes for public health, poverty reduction and environmental protection from the perspective of water security.

INTEGRATED WATER RESOURCES MANAGEMENT POLICY

In accordance with the policy principles and to attain the stated objective, a number of strategies have been elaborated. These strategies apply to or stem from the economic, social, and environmental spheres of influence, or to the technical infrastructure and institutional framework.

3.1 Institutional strategies

3.1.1 **National water policies:** National policies are fundamental as they provide the framework for legislation, strategic planning and operational management. The development and updating of national water policies based on IWRM principles is of critical importance and should be high on the agenda of each government

3.1.2 **Legislation and regulatory framework:** Water legislation is at very early stage of development in Africa. Stakeholders should have a consensus on the legitimacy of decisions and actions of the institutions regulating different aspects of water resources management. Institutions should be representative with clear legal and social basis, and should be fair. Legislation should be based on the "the polluter pays" principles.

3.1.3 **Scale of management:** Water resources management issues are handled at international, regional, national to household level involving multi-sectoral use. The river basins provide a parallel management level, with potential management conflicts between the national and basin levels. Autonomous institutions with responsibility for sector co-ordination and overall water resources management, are required distinct from institutions concerned with specific water sub-sectors. Implementation of the integrated approach involves the large number of institutions, the financial requirements are high, and long time horizon is needed to achieve success.

3.1.4 Trans-boundary river basin Management: The Bank will support multinational organisations and river basin authorities that span more than one country, and support studies to identify the benefits of collaborative approaches in developing international shared water resources on the basis of mutual agreement. The Bank would seek for the co-operation of all riparian countries in respect of project or program proposals from one country, which involves the utilisation of shared water resources.

3.1.5 Decentralisation: Responsibilities for management of water resources can be transferred to restructured and empowered public agencies, private agencies or water users associations with effective, autonomous and accountable set-up. Regulations governing quality standards, pricing, and mechanisms to promote competition and protect consumer interests, control pollution and protect aquatic ecosystems should be put in place.

3.1.6 Water users associations in irrigation: This form of decentralisation helps to promote project success and sustainability, by ensuring that design choices and operational practices are consistent with local conditions. Projects involving user participation are more valued and maintained by the local population ensuring sustainable production than projects that do not incorporate user participation.

3.1.7 Accountability: Accountable agencies are responsible for the quantity and quality of their services, for the cost of operations and investments, and for effective policies and strategies. Public agencies that are not required to cover their costs are often poorly motivated to provide good services, collect fees, or pursue cost-efficiency. Ensuring that public sector institutions in the water sector are motivated and accountable can solve this problem.

3.1.8 Autonomy: An important principle in restructuring public service agencies is to convert them into financially autonomous entities, with authority to charge and collect fees, and freedom to manage their affairs. Capacity to self-finance is an essential precondition for financial autonomy, accountability and political independence. The RMCs should develop competent regulatory capacities to protect the public and consumer interest against monopolistic tendencies of autonomous agencies and utility companies. Governments should play an important role in fostering user participation by providing technical training for water user associations and communities or institutional organizers. The Bank is committed to support governments in this process.

3.1.9 Governance: Governments should promote good governance through the institutionalization of financial and administrative accountability, transparency and fairness; ensuring effective participation and inclusiveness in governance at all levels, allowing the systems of checks and balances to function well; providing for independent audit systems for the public sector etc. Achieving success in the area of good governance is an important ingredient in the effective functioning of institutions, attracting domestic and foreign investment, achieving sustainability and generally in the fructification of efforts made in other areas of water resources management.

3.1.10 Box 1 below delineates policy statements, which provide a framework for Bank intervention on institutional issues.

Box 1: Policy statements on Institutional Issues

The Bank :

1. Considers it essential that national Integrated Water Resources Management Policies (IWRMPs) be developed and implemented.
2. Will use the Country Strategy Papers as a basis for dialogue with RMCs to encourage the development and implementation of such policies.
3. Will, in future water projects give financing priority to those projects that comply with national policies that are based on the concept of IWRM.
4. Will support, where possible, countries that wish to develop their national IWRM Policies. A limited amount of financial support from the Technical Assistance Fund (TAF) may be used for such purposes.
5. Notes that water resources development, regulation, and service provision are three distinct functions. Ideally, these functions should be executed by separate organizations. Umbrella organizations should be mandated to exercise

responsibilities for integrated water resources management at the national or basin level. Water services utilities should provide services to consumers at a fee, subject to regulation. Water resources management organizations should preferably cover the area of a river basin unit on a scale, which is administratively feasible.

6. Recognizes that inadequate human resources capacity often presents a constraint in the proper functioning of organizations in the water sector. The Bank, therefore, will strengthen its partnership with specialized institutions to promote activities such as training and research.
7. Will promote and support joint efforts of riparian countries in developing strategies for integrated water resources management based on mutual agreement.
8. Will support multinational organizations and river basin authorities that span more than one country.
9. Will seek broad agreement with riparian countries in respect of project proposals emanating from one country, for the development of shared water resources.
10. Urges RMC governments to review and sharpen their role in the management of water resources, in order to create an enabling environment for more effective public-private partnerships (PPPs) in the water sector, including the participation of users and community associations, local councils, NGOs, private sector entrepreneurs, and capital markets. Institutional arrangements to guarantee autonomy and accountability as well as to protect service providers need to be carefully thought out, discussed, and evaluated. Sharing of experiences and best practices among African countries and from countries in other regions of the world should prove immensely useful in this regard. Promoting good governance is also an important aspect of an enabling environment.

3.2 Technical strategies

3.2.1 Better knowledge of the water resources: Strategic planning depends upon knowledge of the occurrence and distribution of water and natural and physical factors while knowledge on water consumption, pollution, and household demand patterns are essential for operation. Knowledge is gained through sustained and systematic programmes of data and information gathering, analysis, synthesis and research on the range of issues pertinent to water resources, the environment and social welfare. Building database, and making it accessible to users would level the playing field among stakeholders, and advance technical knowledge and decision-making at regional level for shared water resources. Programmes to increase the knowledge capacity and generate information for water resources management should be high on the agenda.

3.2.2 Appropriate technologies: Water management technologies should be accessible, socially acceptable, and be easily operated and maintained. Existing traditional technologies and practices should be evaluated, adopted or adapted. Appropriate technology does not exclude the utilization of sophisticated technologies, provided that sufficient attention is paid to cost effectiveness and maintenance. This will be one of the appraisal criteria in each Bank-supported project.

3.2.3 Meeting Water Supply Scarcity: Implementation of technical measures will be required to meet increased future water demand against the background of increasing scarcity and uneven distribution. These will include construction of dams for water conservation, transfer of water from surplus areas to deficient areas and increasing water use efficiency. Other innovative approaches such as water harvesting, land management, increased water recycling and reclamation through desalinization should be applied as appropriate.

3.2.4 Flood and Drought Mitigation Measures : Flood mitigation measures such as catchment conservation, creation of storage facilities to attenuate extreme events, river training and regulation, and flood plain management will be required. Water conservation through storage creation and replenishment of underground aquifers should be considered for use in drought conditions.

3.2.5 In Box 2 below, policy statements on technical issues are summarized.

Box 2: Policy Statements on Technical Issues

The Bank will:

1. Stress, in the course of its interventions, the importance of water resources quantity and quality assessment and monitoring and collection of data on other natural, environmental, economic, social and technical factors necessary for water resources development and management. The Bank would therefore promote the development of adequate data management and water information systems, as a basis for sustainable development and management of water resources. The establishment of Early Warning Systems for drought and flood control would be encouraged.
2. Projects, whose objective is to establish sustainable water assessment and monitoring programs, should be established, as much as possible, based on cost-recovery.
3. Encourage RMCs to give a high priority (i.e. through skilled human resource development, and sustained financing of data and information systems, and research) to the development of capacity to generate and continuously update their knowledge of water resources issues.
4. Will promote and support water conservation and augmentation projects that are aimed at addressing water scarcity problems through increased water productivity and supply development.
5. Will support the planning and implementation of structural and nonstructural flood and drought mitigation measures in the framework of IWRM approach.
6. Encourage the application of appropriate technologies, which would enhance water availability and supply, particularly efficiency in water use in agriculture and irrigation, improve leakage control and detection and enhance water reclamation and recycling.
7. Encourage the adoption of technologies, which would enhance efficiency, particularly efficiency in water use in agriculture and irrigation, and improve leakage control and detection.
8. Ensure that rehabilitation is giving priority, where applicable, in project appraisal, as an alternative to costly new capital expenditures.

3.3 Economic strategies

3.3.1 Pricing : Getting the prices right is at the core of improving water resources management. Within the process of establishing appropriate fees and fee-structures, economic, environmental, financial and social considerations play a crucial role. **Prices should be set to give incentives for efficient water use in various applications, and to supply water at adequate rates and quality levels.**

- **Economic considerations :** Treating water as an economic good recognizes that water carries an opportunity cost. Welfare is maximized when prices are equal to long-term marginal cost of production including the opportunity cost of the underlying water resources. In this situation, economic or allocative efficiency is achieved.
- **Environmental considerations :** Treating water as an economic good should include the "polluter pays" principle. The Bank will promote the incorporation of environmental costs in water fees through the effective implementation of this principle.
- **Financial considerations :** The costs of water resources management are high, and investments will need to be based on improved cost recovery. The Bank recognizes economic efficiency would be achieved by billing users based on the full economic cost of water. However, a more realistic and immediate objective is to charge users at the price for the recovery of financial costs. Government subsidies, should be determined taking into account cost recovery from consumers through direct charges.
- **Public and Private Partnerships :** Private sector participation can be an effective way of mobilizing investment and increasing the autonomy and accountability of service providers. Options for private sector participation, include

service contracts, management contracts, lease, concessions, build-operate-transfer , build-operate-own , and divestiture. The choice for an option should follow a carefully designed and consultative process involving all stakeholders.

- **Social considerations** : Subsidies on drinking water for the poor could be applied on progressive block tariff schedules basis, in which a floor price is charged for a limited lifeline amount of water, while a higher price is levied on additional quantities. Progressive price structure serves to restrain excess consumption and to encourage frugality and conservation. On aggregate, however, the tariff structure should achieve full cost recovery to ensure financial sustainability without relying on budgetary subsidies
- **Transfer pricing**: Transfer pricing between urban and rural water supply could be applied for raw water obtained from shared basins. A levy could be charged on urban water consumers to finance part of the capital investment for the development of rural water supply and sanitation systems. The same principle could be applied for hydropower development and supply of electric energy to low income groups in urban and rural areas. Transfer pricing could also be used as an instrument for the equitable allocation of water resources among countries sharing common basins subject to agreements among riparian states.
- **Non-price measures to improve efficiency**: In some countries, implementing water price reforms poses a number of difficulties arising from political pressure to resist paying for water to lack of technical and managerial capacity to assess and enforce charges. Non-price measures such as transferring management responsibilities to user groups or promoting the development of water rights and local water markets can be used to encourage consumers to use water more efficiently. These approaches can be successful where user groups have been involved in policy formulation and implementation.

3.3.2 Demand management and conservation : Demand management and water conservation are low cost alternatives to supply augmentation. Where water is scarce and locked-up in low-value uses, the Bank will encourage RMCs to investigate market-based reallocation of water as a strategic alternative for expensive supply augmentation. The Bank will support programmes aimed at reduction of system losses and improvement of efficiency. The Bank is aware that, in many RMCs, installed capacities have remained static or decreased due to lack of maintenance. Where required, the Bank will support augmentation of installed capacity and development of new systems to meet increasing demands.

3.3.3 Scope for Private Participation: The promotion of private sector participation requires an enabling environment, including a favorable framework of incentives and regulations along with building entrepreneurial capacity. The Bank will support RMCs in establishing conditions for promoting private sector participation and work in partnership with private players to promote development financing on a commercial basis. The transition from public to private provision of services, will take time, considerable imagination, flexibility, and policy dialogue among stakeholders in view of lack of investment, long payback period, low service prices and low payment capacity due to high incidence of poverty.

3.3.4 The private sector in irrigation: Private small or medium-scale irrigation schemes tend to cost less due to the use of local labor and resources in construction, and the contribution of local beneficiaries to operations and maintenance. Large-scale irrigation schemes can be jointly implemented with the private sector by sharing the investment cost with the public sector. RMCs should promote the development of private irrigation schemes by creating favorable legal, financial, economic and institutional conditions. The Bank will support RMCs programmes for the development of small and medium-scale irrigation schemes, as an integral component of rural development. Assistance will be provided to resolve the problems and constraints of large public schemes at policy, managerial, or operational levels. The Bank will consider providing technical assistance funds to support investigation of approaches to restructure large-scale schemes including increased participation of water user associations. The Bank will also consider, providing financial support towards the rehabilitation of existing irrigation infrastructure as a necessary precondition to successful restructuring.

3.3.5 Taking into consideration all the issues raised and the strategies outlined, Box 3 encapsulates the main elements of the Policy with respect to economic issues.

Box 3: Policy Statement on Economic Issues

1. 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.
2. Ultimately, 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, RMCs should target the recovery of full financial costs.
3. The principle of "the polluter pays" is crucial in protecting freshwater resources from pollution and degradation. Its implementation will ensure that consumers and other water users are made aware of the costs of maintaining water resources at a minimum quality level, commensurate with the continued integrity of natural aquatic ecosystems or the safety of surface and ground water resources for human consumption. The Bank will provide support to RMCs in formulating policies, legal instruments and institutional arrangements to monitor and implement this principle.
4. The Bank will support RMCs' strategies to develop appropriate water pricing policies. In order to balance the interests of different consumer groups, the general public, and service providers (whether public or private) RMCs need to put in place competent regulatory capacities.
5. Due consideration should be given to demand management and conservation as important alternatives to costly supply capacity augmentation in certain situations. In this context, pricing is also a demand management tool, which encourages efficient utilization of water and minimizes wastage, promotes sustainability, conservation and protection of water resources.
6. The Bank will promote public-private partnerships, by: helping to create an enabling environment; ensuring the application of good governance; promoting regional co-operation and facilitating the acquisition and exchange of knowledge and experience in such partnerships.
7. The Bank will facilitate the participation of the private sector and Water User Associations in the water sector of RMCs. The Bank will also be an active partner in finding ways to alleviate the social impacts (e.g. unemployment, increased prices) that are likely to accompany increased private sector participation.
8. The Bank will support the sustainable development of small, medium and –large scale irrigation schemes, where applicable.

3.4 Social strategies

3.4.1 The social dimension: As water is a social good, all dimensions of water resources management should be analyzed from the social perspective to elucidate social issues critical for achieving IWRM. Social analysis and identification of issues at the onset of projects will enable the incorporation of appropriate responses for mitigating negative impacts and maximizing benefits. Thus, it is necessary to undertake social impact assessment in integrated water resources management projects.

3.4.2 Population pressure and urbanisation: Fresh water resources are scarce and finite. The social aspect of sustainability of water resources deals with the capacity to manage population growth to achieve stability in water demand. In most RMCs, the key strategies used are to lower growth rates, and ensure balanced spatial distribution. In the urban areas, recognition should be given to informal settlements and slums, to provide basic water supply and sanitation. RMCs should make a long-term commitment to developing rural and marginal areas to reduce current rapid urbanization. A comprehensive analysis of the linkages of water resources and human settlement also calls for an examination of the system of land ownership and land use patterns in rural and urban areas.

3.4.3 Health and education : Education for creating awareness and change of attitude on sustainable management of water resources is a key element to health improvement. Health and education programs targeted at improving the operation of domestic water facilities, hygiene in the home, and the proper storage and use of water supplies should be encouraged. The preventive and control measures of water related disease should be taken as integral parts of water resources management practices based on health impact assessment (HIA) of projects. Such programs need to be flexible, participatory, and sensitive to complex social and cultural norms and perceptions.

3.4.4 Involuntary resettlement: The Bank's policy is to minimize involuntary resettlement and its negative impacts associated with projects. To achieve this objective, an environmental impact assessment (EIA) is conducted in compliance with the Bank's environmental policy. However, resettlement cannot always be completely avoided. In such a case, the EIA should always indicate the adverse effects of a project on the socio-economic environment with adequate mitigation measures. Minimum facilities should be provided for resettled people as an integral part of the project cost. Resettlement programmes should be carried out with the full participation of the target populations.

3.4.5 Gender: Gender equity implies the effective participation of women in all decision-making processes in water resources management. The Bank will support water resources projects and policies that give due recognition to the role of women, as custodians of domestic water consumption and, as agricultural and food producers, who have interests in irrigation; improve women's access to and control over production factors, services and infrastructure facilities; reduce the domestic workload of women; create opportunities for women to improve their knowledge and capacities; seek women's active participation in decision-making at domestic, local, national and international levels; and strengthen women's organizations.

3.4.6 Participation: A demand-responsive approach is participatory and key to the successful development of water resources. Projects and programmes that are built on a demand-responsive approach tend to be more successful and have better prospects for sustainability than those which are supply-driven. As stakeholders, modern civil organizations should be taken on board, supported and empowered to enable them to participate significantly in water resources management. Cultural and traditional values should be studied to provide a basis for designing an effective information, communication and education programme to deepen community understanding of sustainable utilization and management of water resources.

3.4.7 Taking into consideration all the issues raised, the main policy elements with respect to social issues are outlined in Box 4.

Box 4: Policy Statements on Social Issues

1. As a social good, there is a universal right to water and it should be made available to all at an affordable cost.
2. Gender issues should be taken into account in integrated water resources management. The Bank will strongly support water resources development projects which show good prospects of reducing the time spent by women and girls in fetching and storing water.
3. The Bank will bring up issues on Core Labor Standards in the process of discussions with RMCs, and appraise programmes and projects in the water sector to ensure that they are in conformity with established criteria on labor.
4. Where involved, the Bank will ensure that stakeholders are effective participants in all decision-making process likely to affect them. Their willingness and capacity to pay for water resources development should be sought and not just assumed.
5. The Bank will ensure that control and prevention measures of water related disease are integrated as part of the water management practices control and prevention measures based on proper health impact assessment and through effective stakeholder participation.

3.5 Environmental strategies

3.5.1 Environmental linkage: The Bank encourages its RMCs to make environmental considerations an integral part of water resources management. Important environmental issues should be identified early in the project cycle. There is a close correlation between environmental degradation of water resources and poverty. Policies such as the provision of interest free loans for the mitigation of environmental degradation and poverty should be explored. Integrated water resources management is an effective mechanism for abating water-related health and environmental problems and for enhancing existing water resources conditions.

3.5.2 Conservation of the resource base : The environment should be regarded as a 'water reserve' rather than as a water "user". Sustaining the water resource base is essential for maintaining water security and environmental sustainability. In general, regional co-operation is required for conservation of the resource base, as Africa's water

resources are predominantly transboundary. Including environment in the "water reserve" guarantees adequate environmental flows for the ecological functions of river and wetland systems.

3.5.3 Improving water supply, sanitation and health : *Strategies to abate waste and wastewater pollution, and protect water sources include; improving waste collection, establishment of environmentally proper waste disposal, and the construction of sufficient municipal and industrial wastewater treatment plants.*

3.5.4 Protection of catchment areas and erosion control : An integrated approach to water resources management is also a prerequisite to combating land degradation, floods, and diminished water retention of river basins, as a result of unsustainable land use practices. Watershed management must be developed to cover all major river basins. An essential aspect of this strategy is the involvement of rural communities who are true stewards of watersheds.

3.5.5 Sustaining bio-diversity : Adequately managed forests play a major role in water conservation and water resources management. The tidal and fresh water marshes and the coastal lagoons and estuaries are of vital importance for many species as breeding grounds and staging areas in their migration routes. If an EIA shows adverse effects of proposed projects on biological diversity, sufficient mitigation measures should be formulated and implemented to compensate the negative impacts. The Bank would seek to play an active role in facilitating the access of RMCs to the grants from the Global Environmental Facility (GEF) in respect of projects and programmes in the areas of bio-diversity, land degradation, desertification and shared waters.

3.5.6 Environmentally sound construction of dams and reservoirs : Dams will be required for water conservation and will play a vital role in providing water for domestic and industrial supply, irrigation, power generation and contribute to flood and drought mitigation. Feasibility studies and environmental impact assessment should indicate whether dam and reservoir construction would be economically, environmentally and socially feasible and acceptable, and whether mitigation measures could compensate for the damage. With dam projects, adequate mitigation measures should be designed and implemented to compensate for physical, biological and socio-economic adverse impacts.

3.5.7 Sustaining the marine and coastal environment: Coastal ecosystems are not demarcated by physical boundaries, but form one system along the coast of various countries. There is a need for coastal zone management policies, providing a balance between the exploitation of natural resources, the conservation of these sources, the preservation of the environment and the promotion of human well being. Another important area is the protection of coastal aquifers from over-abstraction and saline intrusion.

3.5.8 Combating drought and desertification: IWRM and land use planning at sub-regional or international level, are essential tools for sustainable development in arid and semi-arid regions. The International Convention on Drought and Desertification (ICDD) encourages countries to give due priority to activities that would combat desertification. The Bank supports this priority and will seek to increase its involvement in providing support for its implementation.

3.5.9 Solid waste management : Analogous with the necessity for treating wastewater, it is equally important to protect surface and groundwater from the detrimental effects of solid waste. Solid waste dumpsites must be located and controlled in such a way that risks for human health is eliminated. The Bank urges countries to incorporate policy on the relation between solid waste management into national IWRMPs, and actions into the National Environmental Action Plans.

3.5.10 National Environmental Action Plans : National Environmental Action Plans (NEAPs) and similar national frameworks for sustainable development have been formulated by many countries, but implemented by only a few. The NEAPs generally promote an integrated approach and could serve as important tools for IWRM and donor collaboration. The Bank highly favors such cross-linkages.

3.5.11 Taking into consideration all the issues raised, the main policy elements with respect to environmental issues are outlined in Box 5.

Box 5: Policy Statements on Environmental Issues

1. Water is an environmental good with three major dimensions: (1) it is required by all living creatures and it is vital for the survival of ecosystems; (2) as part of the natural environment, it is an asset with aesthetic values; (3) it is an essential component in the positional transfer of matter and energy. Although these environmental dimensions cannot always be assessed in monetary terms, they should be evaluated through the decision-making process.
2. The Bank will only finance water related projects for which adequate environmental impact assessment have been conducted, and where the costs of necessary mitigation measures have been incorporated into the overall project costs.
3. The Bank will promote the treatment of domestic and industrial wastewater as essential to the environment in general and health in particular. In general, the level of capital investment in sanitation and treatment facilities is relatively low compared to that of water supply facilities. The Bank will only finance water supply projects, for which the sanitation and wastewater aspects are adequately covered, if applicable. This means that either treatment facilities have to be installed in parallel, or it must be shown that the self-purification capacity of the water system is sufficient to handle the wastewater effluent.
4. The Bank will also promote the reuse of treated wastewater for suitable irrigation and industrial activities, as a means of water conservation.
5. The Bank will support the sustainable development of coastal environments and internationally coordinated environmental protection policies, in which the global solidarity principle is included (i.e. countries have a common responsibility for not polluting shared coastal environments). In this context, the Bank will assist RMCs to have access to grants from GEF.
6. The Bank supports the envisaged activities set out by the Convention on Drought and Desertification and will seek to increase its involvement in providing support for the implementation of these activities.
7. The Bank urges countries to incorporate policy on management of solid waste management into national IWRMPs and the National Environmental Action Plans.
8. The Bank highly favors the establishment of cross-linkages between National Environmental Action Plans and Integrated Water Resources Management.
9. The Bank will promote the introduction of clean technologies to reduce industrial waste emissions.

4. Implications for Bank Group water operations

4.1 Priorities

4.1.1 In view of the present status of water resources management in RMCs, the Bank will focus on the following areas for the purpose of assistance and policy dialogue:

- Development of a comprehensive, integrated analytical approach, which emphasizes the treatment of water as a social, economic and environmental good, as well as an enabling technical and institutional framework.
- Adaptation and strengthening of institutions that will provide better management, promote cost recovery, financial autonomy and improved knowledge of water resources and its use.
- Strengthen co-operation and joint action on transboundary water resources management

4.2 Implementation of the policy

4.2.1 Priority actions and reforms will be addressed through sector work, technical assistance, and the NEAPs. Identified issues and investment needs will be prioritized in collaboration with governments, and reflected in the country strategy paper (CSP). The resulting reform action plan will guide lending and non-lending operations in the water sector. The Bank will develop operational instruments that encourage consultation and prevent conflicts among riparian countries. Good practices will be identified and mainstreamed into operational work.

4.2.2 A critical dimension of the implementation of the IWRM Policy will be to strengthen collaborative arrangements with relevant international, regional and multilateral development institutions. This will involve improved dialogue, joint reviews and appraisals, increased scope for co-financing, joint efforts to promote agreements and legal frameworks for riparian countries, etc.

4.2.3 The Bank will monitor progress made in RMCs in implementing reform agenda through existing instruments. The adoption and implementation of a comprehensive analytical framework in sub-sectoral projects will also be monitored. With respect to the implementation of the Policy, the Bank will ensure widespread dissemination of the policy among the RMCs, prepare various Guidelines, to assist Bank staff, as well as RMCs and encourage greater private sector involvement in supporting water resources development in RMCs.

4.2.4 With the introduction of this IWRM Policy, the Bank will adopt a new integrated approach. Professionals from the relevant departments of the Bank will meet on a regular basis to discuss and incorporate the concepts of integrated water resources management into their operations and project appraisal. A Bank-wide focal point for water operations will be maintained, with adequate capacity, resources and appropriate skills. The Bank will conduct periodic reviews every two years to evaluate its achievements in the water sector in line with the IWRM approach.

Abbreviations	
ADF	African Development Fund
ADB	African Development Bank
CSP	Country Strategy Paper
EIA	Environmental Impact Assessment
GEF	Global Environmental Facility
HIA	Health Impact Assessment
ICDD	International Convention on Drought and Desertification
IEE	Initial Environmental Examination
IWRM	Integrated Water Resources Management
NEAP	National Environmental Action Plan
NGO	Non-governmental Organisation
O&M	operation and maintenance
OCOD	Central Operations Department
PPP	Purchasing Power Parity
RMC	Regional Member Country
TAF	Technical Assistance Fund
WSS	water supply and sanitation
WUA	Water Users Association

Glossary	
Accountability	Refers to criteria and procedures to evaluate whether service providers have availed themselves of their responsibility for operations and management, for quality and quantity of services, and for expenditures and revenue collection.
Annual internal renewable water resources	The average annual flow of rivers and groundwater generated from endogenous precipitation. Annual averages disguise large seasonal, inter-annual and long-term variations.
Aquifer	An underground stratum that is saturated with water and transmits water readily.
Command and control	A system of water management based on administrative allocations.
Comprehensive Water Resources Management	In this concept all potential multipurpose uses of water resources are considered including water supply and sanitation, irrigation, hydropower, mining, aquatic resources, transport, recreation etc
Cost recovery	The extent to which users are charged for goods and/or services to generate revenue to cover the cost of provision.
Cross-subsidy	Part of the cost of providing services to a given group of consumers (usually poor), and paid for by another group of consumers through higher prices.
Decentralization	The distribution of responsibilities for decision making and operations to lower levels of government and community organizations.
Demand management	The use of price, quantitative restrictions and other devices (e.g., leakage detection) to limit the demand for water.
Economic efficiency	An investment or intervention is economically efficient when it maximizes the value of output from the

Economic good	resources available. An economic good is a scarce resource in the sense that it is limited in quantity in comparison to the desire for the resource. Treating water as an economic good recognizes that water has an opportunity cost.
Ecosystem	A complex system formed by the interaction of a community of organisms with its environment.
Efficient water pricing	From an economic viewpoint, the efficiency-pricing rule in the long run is one that equalizes price to long run marginal costs.
Environmental good	Water as an environmental good has three dimensions: (i) water is part of the natural environment and as such an asset with aesthetic values, (ii) water is required by all living creatures and vital for the survival of ecosystems, and (iii) water is part of natural process of constant change and an essential component in the positional transfer of matter and energy.
Externality	The unintended real (non-monetary) side effect of one party's action on another party, which is ignored in the decisions made by the party causing the effect.
Integrated Water Resources management	A comprehensive approach to water resource management that views water as a single resource with competing uses and inter linkages with the ecological, social and economic systems.
Mitigation measure	Measure taken to offset adverse effects of projects on the environment.
Opportunity cost	The value of goods or services foregone, including environmental goods and services, when a scarce resource is used for one purpose instead of its best alternative use.
Participatory approach	Planning approach in which all stakeholders, and in particular the envisaged beneficiaries, are part of the decision process.
Private sector participation	Involvement of the private sector in water resources management including development and operation. This can take several forms, with different features with respect to asset ownership, operation and maintenance, commercial risk and duration.
Project cycle	A sequence of analytical phases through which a project passes. This includes identification, preparation and analysis, appraisal, implementation, and evaluation.
Riparian state	A state through or along which a portion of a river flows or a lake lies
River basin	A geographical area determined by the watershed limits of a system of water. The watershed limit of the surface water or the sphere of aquifer recharge of underground water or combination of both may define a river basin boundary.
River basin authority	Administrative body involved at the river basin level in water resources management including assessment, development, operation, monitoring, allocation, quality control etc.
Social good	Water as a commodity to which social value is attached. Arising from the fact that water is an essential building block for life, the universal right of all to have access to water is generally accepted. Because water serves basic human needs, lifeline amounts of potable water should be accessible to all socio-economic groups in a given society at affordable prices.
Transboundary water resources	Water resources (surface as well as groundwater) that cross borders of countries, or constitute borders between countries.
Unaccounted-for- water	The difference between the volume of water produced and delivered to a supply system and the volume accounted for by legitimate consumption, the difference being lost through system deficiencies or stolen.
User fee	A charge levied upon users for the services rendered or goods supplied by a project.
Water Resources Development (WRD)	The assessment of resources and needs, planning and preparation of programs and projects and their implementation through institutionalized mechanisms for the purpose of harnessing water for various human uses including drinking, sanitation, agricultural and energy production industrial development, recreation, transport etc.
Water Resources Management (WRM)	The institutionalized activities of water resources development, utilization, allocation conservation and control.
Water scarcity	Situation in which the annual internal renewable water resources are below 1,000 m ³ per capita.
Water sector	All providers and users of water. The sub-sectors of potable water supply, water supply to irrigation and to industries, sanitation, and hydropower are normally included. Nevertheless, users from other sectors are also important stakeholders, such as agriculture, forestry, fisheries, tourism and transport.
Water stress	Situation in which the annual internal renewable water resources are between 1,000 and 1,667 m ³ per capita.
Watershed	An area drained by a river or stream system.
Watershed Management	The adoption and implementation of Best Management Practices (BMPs) that protect, rehabilitate, and enhance the watershed. The conceptual framework considers the entire hydrographic basin as the unit of management.
Wetlands	Areas of marsh, fen, peat land, or water that include natural, artificial, permanent and temporary areas with static or flowing water that is fresh, brackish, or marine.
Willingness to pay	The maximum amount consumers are prepared to pay for a good or service. The difference between willingness to pay and what people actually have to pay, is called consumer surplus, a direct benefit to the consumer.

RCWSS/2-01/5B.3

ABSTRACT

INTEGRATED WATER RESOURCES MANAGEMENT: THE CITY OF WINDHOEK, NAMIBIA
Perd Brühlman, Namibia

Shortly after independence in 1990, the City of Windhoek faced challenges with regard to water supply in that:

- The City population was growing at about 6%.
- The available water resources would be depleted within 5 years if the water demand at time were allowed to grow unabated.

With its location in the central highlands of Namibia, the most arid country in Sub-Saharan Africa and the nearest perennial river being 750km away, Windhoek is reliant on surface water from ephemeral rivers, bore-holes and reclaimed water for its existence. Being the seat of Government and the Capital of the country it was evident that it would not escape the effects of urbanization so many African cities have experienced after independence.

To provide in the water needs of the City's growing population and to sustain development, management practices had to change. A supply-led approach would not have been economically feasible, apart from the environmental consequences. A sustainable equilibrium had to be found between the customers' needs, the available resources and the City Administration as the custodian of the resources.

The City opted for an approach of optimizing available surface water resources, conserving and replenishing underground resources and controlling demand. Existing water reclamation facilities were extended, a detailed study of the aquifer feeding the network of boreholes to the City was commissioned with the aim to manage it better and a water demand management strategy was adopted. The development of institutional capacity was started and many functions were out-sourced to the private sector to improve service delivery. A forum for discussion and planning was established with the bulk water supplier, NamWater, in order to synchronize planning and apply available resource optimally.

The result of this integrated approach is that the available resources are expected to sustain the development of the City up to the year 2015, without resorting to expensive augmentation schemes such as supplying from remote sources.

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WATER FOR ALL IN AFRICAN CITIES: WATER CONSERVATION AND DEMAND MANAGEMENT

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Summary

Throughout Africa water is unevenly distributed by nature and unfairly allocated by man. In the context of water management there has been a paradigm shift from a pure supply focus to water conservation and demand management (WC&DM). A few countries in Africa, among them South Africa, Botswana and Namibia, have championed this approach and incorporated it into national legislation. UNCHS (Habitat) and UNEP with funding of UNFIP are implementing a programme Water for African Cities which is supporting African countries to effectively manage the growing urban water crisis and protect the continent's threatened water resources and aquatic ecosystems from increasing volume of land-based pollution from cities. The brief paper describes the philosophy and instruments of WC&DM and how to develop a WC&DM plan.

Introduction

Africa is witnessing an unprecedented urban transition as it approaches the twenty-first century. The region, which, until recently, was predominantly rural, is experiencing the world's most rapid rate of urbanization at nearly 5 per cent per annum. Its urban population will nearly quadruple from 138 million in 1990 to 500 million in 2020, with increasing concentration in medium and large cities. By 2020, Africa's major cities (with more than one million population) will accommodate almost 200 million people – 20 per cent of the region's population and 40 per cent of its urban population. (UNCHS 1999a)

African cities are already playing a key role in the development efforts of countries in the region, contributing to growth, exports and employment. These include not only the megacities which act as centres of political power and commerce (e.g. Cairo, Lagos, Abidjan and Johannesburg), but also some 25 million-plus cities (1990) which account for half or more of the gross domestic product of the respective countries. With increasing emphasis on industrialization and the growth of the tertiary sector, cities will continue to act as nerve centres and engines of growth in the continent. (UNCHS 1999a)

As the African continent follows patterns of unprecedented urbanization, the demands for water supply for industrial, commercial and domestic sectors continue to rise and outpace the capacities of governments resulting in gaps which have steadily widened over the years, threatening sustainable development and the environment of cities. Drinking water supply coverage in African cities is the poorest among all regions, with more than a quarter of urban populations remaining without adequate access to safe water. (UNCHS 1999a)

The increasing concentration of populations in urban areas and the growth of large cities in the continent also pose enormous pressure on the fresh water resources of African countries. The per capita water availability continues to decline in Africa. A survey of 29 sub-Saharan African countries in 1990 showed that eight were suffering from water stress or water scarcity. By 2025, this number will increase to 20 out of the 29. Many cities require freshwater to be conveyed great waste distances or abstracted from deep aquifers. Cities are also discharging ever increasing volumes of waste into freshwater bodies, threatening water quality and aquatic ecosystems. Please see indicators collected by Habitat on cities.

Some of the key factors which aggravate the situation and could pose serious threat not only to the sustainability of cities but also to the supporting ecosystems can be identified.

Increasing needs of cities

As the African cities continue to grow, the hinterland from which they draw upon water resources also expand. Many African cities have already outgrown the capacity of local sources to provide adequate, sustainable, water supplies. (UNCHS 1999a)

Dakar (Senegal), for instance, with a population of 250,000 in 1961, relied on its basalt aquifer for drinking water supplies. By 1988, its population had reached 1.5 million and the local ground water supplies were already over-pumped, resulting in saline intrusion. A large part of the city's water has now to be brought in from the Lac de Guiers, 200 kilometres away. (UNCHS 1999a)

The agricultural hinterlands supporting the cities are also expanding with growing urban populations, often resulting in deforestation and accelerated soil erosion. The sedimentation loads caused by deforestation in Malawi, Tanzania and Mozambique (urban populations in these countries have grown three to ten fold between 1950 and 1990) are inhibiting fish reproduction in Lake Malawi. (UNCHS 1999a)

Urban growth in water stress regions

Several African countries experiencing rapid urban growth, or already with large urban agglomerations, currently suffer from chronic water stress or water scarcity and, what is more important, the per capita water availability is sharply declining in the large majority of these countries. (UNCHS 1999a)

For example, urban centres relying fully or in part on the Nile (Cairo, Alexandria), Tana (Nairobi), Limpopo (Johannesburg, Pieterburg, Bulawayo and Gaborone) and Orange river (Upington) basins already experience water scarcity, and those in Lake Chad (N'Djamena, Mauduguri), and Niger (Bamako, Niamey and Abuja) basins currently experience water stress. By 2020, water scarcity will extend to all these basins, with per capita water availability reduced to less than 1000 cubic metres per year. (UNCHS 1999a)

Urban centres sharing international river basins

Several large African cities share at least one international river basin (Nile, Niger and Congo, Limpopo, Volta and Zambezi). The growing water demand and the discharge of wastewater from these cities pose a special challenge of managing water resources of these river basins in a coordinated manner. The interdependence of riparian states (as also the water-sharing cities) is further heightened by the high seasonal variation in river flows, and the concentration of rainfall in upstream countries. (UNCHS 1999a)

Threat to water quality and aquatic systems

Sharing of the same water body by several African cities pose a special threat to freshwater quality and many of the delicate aquatic ecosystems. Some of these ecosystems such as lake Victoria are already facing severe degradation by the land-based pollution generated by urban settlements like Kisumu (Kenya), Jinja (Uganda) and Mwanza (Tanzania). The scale and intensity of this degradation is likely to increase significantly in the coming years, with expanded economic activities, industrialization and urbanization. (UNCHS 1999a)

The Cape Town Declaration

The Cape Town Declaration, adopted by African Ministers at the International Consultations addressing Africa's urban water challenge, held in Cape Town, South Africa, in December 1997, has expressed serious concern at the inability of cities to provide safe drinking water to their populations which result in an increased burden of health care, reduced productivity and quality of life. The Declaration also draws attention to the serious threat of depletion, pollution and degradation of Africa's freshwater resources posed by the expanding urban areas in the continent. (UNCHS 1999a)

The Declaration underscores the strong political resolve to deal with this threat and recommends that governments at appropriate levels work with their partners to develop and implement programmes of action to meet the growing urban water challenge.

A United Nations Initiative: Water for African Cities

A United Nations regional programme is addressing the growing water crisis in African cities, has commenced in several demonstration cities; Abidjan (Côte d'Ivoire), Accra (Ghana), Addis Ababa (Ethiopia), Dakar (Senegal), Johannesburg (South Africa), Lusaka (Zambia) and Nairobi (Kenya).

The programme which is a collaborative of the United Nations Environmental Programme (UNEP) within the framework of the United Nations system-wide Special initiative of Africa, is a direct follow-up of the Cape-Town declaration of 1997, adopted by African Ministers to address the urgent need to properly manage water for African cities.

Funded by the United Nations Foundation for International Partnerships, popularly known as the Turner Foundation, the programme is being implemented along two parallel tracks; one, demonstrating in seven participating cities are putting place effective strategies for water demand management and two, control of pollution of natural water bodies by city wastes. Simultaneously, a region-wide information and awareness-rising campaign is being organized to extend the outreach of the programme to other countries on the continent. The plan is to build capacity for urban water resources management in four selected regional resource centers in Africa. The programme will be implemented over a period of three years. The programme specifically focuses on the following three inter-linked priorities:

- Improving efficiency of water use through water demand management
- Mitigation of the environmental impact of urbanization on freshwater resources
- Enhancing the flow of information and introducing water education in African cities

Collaborating in the programme are the relevant Ministries of environment, Urban Development and Water Resources in the several participating countries. City level institutions and managers are the key implementers of this initiative whose experiences are expected to be shared continent-wide.

International co-operation is playing a major role in the programme, with the active involvement of the World Bank, the United Nations Development Programme (United Nations Volunteers, the European Union, the Government of Germany, the Water Supply and Sanitation Collaborative Council.

Water Conservation and Demand Management

Unfortunately there are still today too many governments, multi and bilateral agencies who are clinging to a historical and outdated paradigm of Water Supply Management as an approach to water resource development. A growing economy, a needy and increasing population, expanded access to water supplies and our increasing environmental obligations presuppose a need for more water, not less. However, with finite freshwater resources available, or even dwindling due to pollution, we have to rethink our philosophy of endless growth. Unless we re-think and start working at good water management, less is where we are heading for. The new paradigm is water conservation and demand management (WC&DM). A new approach WC&DM will reduce:

- Overuse of water resources
- Overcapitalisation
- Resource wastage
- Pollution problems
- Other problems of varying severity and complexity

Water conservation can be described as "the minimization of loss or wastage, the prevention, care and protection of water resources and the efficient and effective use of water". Water conservation is both an objective and strategy for water resource management. Water demand management can be viewed as a strategy by water institutions, such as catchment management agencies to influence water demand and water usage in order to achieve greater economic efficiency, social development, social equity, environmental protection, sustainability of water supply and services, and

political acceptability. The task of water resource planners and managers is to reconcile demands and supply. In the past, conventional water resources strategies, such as the creation of storage, have been utilised to meet growing water demands. It is now recognised that resource capture through conventional surface and groundwater development (supply management) is not the only option available, but that the implementation of water conservation strategies can successfully achieve the same objective of reconciling demand and supply and providing sustainability. The optimal long-term solution is most often to be found in an Integrated Resource Management (IRM) approach, which combines conventional supply management strategies with water demand strategies, which promote effective and efficient use. This Section describes each of these management strategies and discusses the benefit of an integrated approach.

Elements of Water Conservation and Demand Management

Water demand management places much more emphasis on the socio-economic characteristics of water use. For example, traditional approaches have generally limited the use of resource economics to analyses that focus on benefits and costs, cost effectiveness, and other passive types of analyses that assume water needs are requirements that must be met. In contrast, demand management is much more aggressive in its use of micro-economic principles, such as economic efficiency to influence the origin of water demands in the first place, to provide incentives for satisfying given ends in the cheapest possible manner. In other words, the various water uses are seen as demands in the economic sense, which can be influenced and governed by incentive structures, public education and other means, using principles, which are commonly used in the social sciences.

Water Demand Management Tools

The essence of water demand management is that of promoting the efficient and equitable use of water. By reducing the need for continuing expansion of conventional water supply systems, Water Demand Management can "buy time" by delaying large capital investments for the development of new conventional water resources.

A broad range of approaches and instruments for Water Demand Management exists, ranging from economical to socio-cultural and technical tools. The following chapter is meant to illustrate the various different approaches to manage the demand of water. As any comprehensive Water Demand Management programme needs a supporting framework, some more general management tools, such as institutional and legal reforms and private sector participation were also included in this chapter on Water Demand Management Tools. Although these tools don't have a direct influence on the water demand they are essential to any water management programme and therefore a part of Water Demand Management.

Market-based and economic instruments

Economic techniques rely upon a range of monetary incentives (e.g. rebates, tax credits) and disincentives (e.g. real cost, penalties, fines) to relay to users accurate and clear message information about the value of water. The aim is to promote better water use practices in the sense of moving toward increasing conservation and sustainability in the use of water resources. The most important of the market-based instruments are:

- water pricing/tariff setting;
- abstraction charges,
- effluent charges;

Water pricing/Tariff setting:

Realistic water pricing is one of the most fundamental keys to Water Demand Management and is central to many of its options.

Prices perform two essential roles in a market system: rationing and production motivation. Rationing is necessary since scarcity precludes both the satisfaction of all needs and the unlimited production of goods and services. Goods and services must be rationed to consumers and factors of production must be rationed to producers. The price system allows

bidding for scarce goods and services and factors of production, thereby ensuring that goods and services are allocated to the highest valued users and that factors of production are allocated to the uses where they bring the largest return. Prices perform their production motivating role by indicating what consumers are willing to pay. Simply stated, prices send "signals" to both consumers and producers about the economic value of the resource use. Many empirical studies in a variety of country and local settings have analysed and confirmed that water consumers respond to price changes according to the individual price elasticity of water consumption.

However a pricing system based solely on a flat rate regardless of volume used or a system based on property value would not have the effects predicted. Pricing based on use requires some means of measuring usage- normally through water meters. The reasoning for this is straightforward. Once the flat-rate is paid, the price for volumes used is essentially zero and, therefore, there is no incentive to conserve on use. Nevertheless in some cases, volumetric pricing for low-income groups, small volume users - is not an economically attractive option. This is not the case, however, for most users and almost never the case for industrial and high volume domestic and commercial users. (UNCHS 1999b)

Abstraction charges

Another economic instrument which serves as a Water Demand Management supporting means of regulating activities is the water abstraction charge. Germany among others can serve as one example for the use of this instrument and to prove the possibilities of using the water abstraction charge as an instrument of Water Demand Management. In 1988, Baden-Württemberg became the first German *Land* to introduce the 'water penny' (*Wasserpennig*), and many by 1995 12 of 16 *Länder* have followed this example. The various *Länder* use different terms (*taxes, charges, fees, levies*) to denote water resource taxes and no simple classification of the instruments as their fiscal, financial and incentive functions are combined and often inseparable is possible. However, the focus appears now to be shifting towards setting incentives to save water (rather than to retire water rights), both directly through rate increases, and indirectly through the decrease in the blanket reduction allowed for public water suppliers. Due to this the water abstraction charge became one instrument to indirectly manage the demand for water. (UNCHS 1999b)

Effluent charges

As an expression of the polluter-pays-principle effluent charges can be used as an economic instrument to indirectly influence the water consumption and by this manage the demand. Although this instrument is mainly used in order to foster water resource protection and mitigate the environmental impact of pollution, it has also an indirect impact influence on the water consumption. In the early 1970s for example the federal Effluent Charges Act was in passed Germany. In principle, all water uses in Germany, including effluent discharges, require a permit (*Erlaubnis*) or a licence (*Bewilligung*) which are thus the primary instruments for water resource protection and management. Established water quality requirements, often reflecting the need to maintain quality for specific uses, can justify denying a permit or licence. In this context, the federal effluent charge is designed to help prevent water pollution, rather than finance the management of pollution. However with the implementation of the Federal Effluent Charges Act the quality and amount of effluent discharges became important in the water consuming industry and commerce, as they were forced to treat effluents before discharge. In consequence, production and processing technologies using less water and resulting in less pollution were sought, and water recycling or re-use systems were installed in many plants. Due to this Germany may serve as an example to prove that effluent discharges in combination with other water management measures may aid in the management of water demand although focussing on water resource protection. (UNCHS 1999b)

Technical measures and water efficient practices

This section attempts to outline a number of concrete technical measures as well as various operational and water efficient practices, including:

- Leakage detection and repair
- Meter accuracy and application programme
- Retro-fitting
- Pressure Management

Leakage detection and repair:

Leakage is often a large source of unaccounted for water and is a result of either lack of maintenance or failure to renew aging systems. Leakage may also be caused for poor management of pressure in distribution systems causing high pressure zones which result in pipe or pipe-joint failure. Some leakage manifests itself above ground in areas which are noticed but others are in isolated locations or below ground and may go unnoticed for a long period. Other leakage may only be noticed by studying water use data and inferring losses due to unaccounted for increase above normal baseline values. Early detection of visible leakage requires good reporting which includes some level of public participation. However the leakage detection should always take place after the customer meter. Although there are often great losses after the meter these losses are frequently neglected as the water has been paid for. A sustainable change in this area of leakage detection would not only increase the efficiency of the whole water supply system but it can foster public support by decreasing the individual water bill of the consumers.

Meter accuracy and application programme:

Accurate metering of the water demand is one of the major cornerstones of Water Demand Management. Before any Water Demand Management programme is implemented, unmetered connections must be reduced to an absolute minimum and metering coverage must be maximised in all sectors. Especially in Developing countries some of these unmetered connections may be illegal connections. These illegal connections may be at all points along a distribution system. For lengthy pipelines which carry water to cities from distant supplies, water may be taken by rural settlements or for irrigation en route. In city distribution systems, illegal connections may be the result of contractors connecting illegally to supply new housing developments or unplanned and "illegal" settlements connecting to such supplies. However to ensure that the Demand Management Programme covers all consumers these "illegal" connections need to be transformed into legal and metered connections.

The most expensive water loss in a distribution system in terms of direct cost is that which is associated with meter mismeasurement, sometimes referred to as inaccurate metering. Mismeasurement may result from poor meter quality, poor water quality, use beyond useful life, improper sizing, mis-application, and improper installation. Therefore any comprehensive meter programme should include a sustainable control and monitoring of the meters. (UNCHS 1999b)

Retro-fitting

Retro-fitting provides one of the most effective short-term options for reducing water demand particularly in the domestic and institutional sectors. Many government building or institutions which are state owned either do not pay for their water or the consumers have no interest in conservation. Good examples are University campuses, Ministry buildings, government hospitals etc. With very little capital investment, usually only a few dollars per fitting, water consumption may be reduced by as much as 20% Typical examples include:

- Low-flush/double flush toilet cisterns (even reducing the flush volume of existing ones)
- Spring-activated/low flow/aerated faucets
- Low-flow shower heads

In order to monitor retro-fitting programmes effectiveness, especially when designed as a pilot-demonstration, efficient metering is necessary. There can be for example block metering for an entire institution or apartment block. Some type of incentive could be offered to those who retrofit including, payment for installation added to water bill to spread the cost, grants from local authorities. (UNCHS 1999b)

Pressure Management

Pressure management is another tool with which the water supplier can reduce the demand for water. It is mainly used to control leakage levels, as leakage rates vary with pressure. Leakage is more sensitive to pressure than traditional wisdom suggests. Therefore the introduction of different pressure zones according to the various local needs is an efficient tool to control the leakage rate. Nevertheless there are more benefits to pressure management like a better control on system failure and customer demand. As maximum pressure and pressure cycling strongly influences burst frequency, a comprehensive pressure management can reduce the danger of system failure and ensure an adequate service. But a comprehensive pressure management programme can help to control the customer demand directly. A reduction of pressure can for example reduce the water in "open tap" use.

However pressure management is not only restricted to the introduction of different pressure zones. To meet the various different needs of the customers the use of roof and ground tanks represent another alternative. By introducing roof and ground tanks instead of a full pressure connection to the main system the water supplier can meet the different levels of water supply demand. (UNCHS 1999b)

Public education, awareness and involvement

An enormous variety of non-financial measures can be considered to promote Water Demand Management (Brooks and Peters 1988). Information and consulting services can be provided; social pressure can be applied; regulations can limit the time or quantity of use and institutional and legal reforms can establish the necessary framework to aid the implementation of the Water Demand Management Programmes.

Public awareness campaign

As the essence of water demand-side management is to influence the consumer to voluntarily use water more efficient, a public awareness raising campaign is one of the major tools of a focused demand-side management programme. The public awareness campaign consists of two distinct components knowledge and information transfer and education and awareness raising at all levels. Its major goal is to mobilise support for ongoing and future activities and ensure the sustainability of the programme.

The print and broadcast media are primary influences on the thinking of the public. Therefore information materials must be fully utilised to ensure a continual and appropriate information and knowledge transfer as the basis for awareness raising. However the dissemination of information requires appropriate "packaging" to suit the different target groups and objectives. Various different means are available to ensure appropriate information and knowledge transfer and adaptation. The use of mass media is probably the most cost effective in most cities as even the urban poor have access to such communication tools. The following box illustrates one example from South Africa on how the dissemination of information brochures can be used to raise public awareness. In South Africa the National Conservation. (UNCHS 1999b)

Box 1: A guide to water saving in South Africa

As part of the National Water Conservation Campaign in South Africa the External Education Service published a handbook for households on how to save water and it more efficient. This handbook is meant to assist the householder with practical ideas on how to save water.

- By stating that South Africa has not an abundant supply of water and illustrating how much water and money can be saved in the household the brochure tries to raise the necessary awareness in order to avoid severe shortages in the future. According to a breakdown of where water goes in an average urban home of 4,6 people up to 47% of the water used can be saved, reducing the water consumption from 139 to 74 l per person per day. Before this background the brochure strikes that every individual can contribute meaningfully to the amount of water that can be saved, stating that "If we all save little, together we can save a lot". To present practical guidelines on how every individual can contribute to this effort, the brochure focuses on the following concepts to save water, the environment and money:

- Repair leaking pipes, taps and toilet cisterns

The first Step to water conservation in the home is to check for leaks. Step by step the brochure illustrates how to identify and repair leaks, like dripping taps and hot water systems or water trickling into the toilet bowl. As most of the leaks are easy and inexpensive to repair practical guidelines are presented on how to fix some of the leaks like the replacement of a dripping tap.

- Using water more efficiently

Aiming at the reduction of the daily water usage and the re-use of water wherever possible the brochure illustrates several measures on how to use the water more efficient. These measures range from tips on how to optimise the garden watering to ideas on how to re-use washing-up water to water garden plants.

- Save energy to save water

Stating that using less electricity does not only save money but also water used to generate power the brochure also presents measures on how to use less electricity, by for example avoiding to leave lights burning at night.

Source: Steve Camp, 1999 in UNCHS 1999

Apart from the dissemination of information material to households education is the second major cornerstone of an awareness raising campaign. However the measures to raise awareness should address decision-makers and

consumers at all levels. To ensure the sustainability of this campaign the consumer education should start already at very young age. This could be achieved by trying to include Water Demand Management in the school curriculum. The following box presents an example from south Africa on how Water Audits are used to raise awareness with the students about water.

Box 2: School's Water Audits in South Africa

Born out of the National Water Conservation Campaign a teacher's handbook on Water Audits was developed in South Africa. This booklet focuses on Water Quantity Audits and is meant to support schools to raise awareness with their students about water.

The activities in this handbook allow students to audit all the different aspects of water in their lives- the amount they use, the quality of the water, where it comes from and how to use it wisely (National Water Conservation Campaign, 1997). Divided into the following four sections the handbook tries to lead the students step by step towards a comprehensive Water Conservation Campaign at their school:

- **Water in South Africa**

In the first section of the handbook the students are introduced to the reason why there is a need to conserve water in South Africa.

- **Where does our water come from?**

As it is important that students understand where the water comes from the water circulation between river catchment, atmosphere and consumer is illustrated in detail.

- **How much water do we use?**

To analyse how much water is actually used and for what purpose Water Audits are introduced and illustrated. Aiming at the actual use of Water Audits in the school the handbook presents some ideas how to implement a Water Audit.

- **Taking action**

The last step after analysing the where the water comes from and how it is used is to consider concrete action to conserve the water. Based on the awareness about water raised during the Water Audit this step is meant to sustain the awareness and transpose it into a comprehensive Water Conservation Campaign.

To ensure the practicability and sustainability of the implementation of these four steps the handbook sets a comprehensive framework for the implementation and provides supporting material for the teacher. Therefore every Audit consists of four parts:

- *A Comic* illustrating the problem addressed in every section.
- *The Teacher's Pages* providing aid to start a discussion among the students and to plan the activities.
- *The Activity Sheets* providing concepts and ideas on how to raise awareness about the water problems of every section through activities like comparing drinking water quality from various different sources.
- *The Curriculum Links* providing information on how to adapt the activities to suit the class and which other subjects and learning areas of the school curriculum can be covered by the Water Audit.

Overall the handbook provides a comprehensive guideline for an awareness campaign among students.

Source: National Water Conservation Campaign, 1997 in UNCHS 1999

Water use restrictions:

Although regulations have a bad name, they are often both appropriate and efficient for managing water demand. Exhortation is also more effective than generally believed, particularly in times of drought. The range of options is wide enough to preclude generalisation, but one can say that they should be chosen to support, and if possible reinforce, the effects of market-based measures.

Water use restrictions are mainly used in emergencies, such as droughts and acute water shortage or in order to protect the water resources against pollution. These restrictions can contain instructions forbidding or regulating the introduction of substances or material into surface water bodies, and provide for other measures to avoid surface water degradation. To secure groundwater protection for example, Germany has developed a zoning approach which is increasingly being recognised as a model. All in all, water use restrictions rather aim at water resource protection than at water demand side management.

Institutional framework:

In many countries responsibility for water management and supply is split between different ministries and agencies at national level and local level. In most countries, there is a Ministry for Water or certainly a nodal ministry with

responsibility for water. It may be a Ministry of Environment or Public Works, but the responsibility will be development of a counties water policy including pollution control and development of resources. How much responsibility is delegated to local authorities will vary depending on their size, but it usual that a local authority will have a water and sewerage department For smaller urban centres this responsibility may be combined with other aspects of infrastructure. Local authorities are responsible for setting tariffs, collecting revenue and providing adequate operations and maintenance. Bulk water supply and large scale development projects are usually the responsibility of the national Government ministry. This hierarchical and vertical diversity and complexity of water management can cause many problems for the implementation of a Water Demand Management programme including:

- Competition between political figures, authorities and interest groups
- Overlapping responsibilities
- Competition for donor support
- Competition for revenue earned from local taxes

Therefore there is a need for a clear definition of roles and responsibilities at all levels throughout the whole programme planning process. This institutional reform should be part of the long-term strategy of establishing and sustaining a comprehensive Water Demand Management System.

Legal framework:

Legislation for water management is often outdated and relies on continued use of unrealistic statutes. It is often restrictive for the entry of the private sector and for the application of Water Demand Management as it often carries building codes and standards which restrict the use of water-saving technologies. In addition, pollution control legislation is neglected. There is however often little capacity to enforce legislation, for example to stop illegal connections and cut off users who don't pay.

Therefore although not necessarily applicable in the short term, in many cities there will be a need to make adjustments to the legislative background. This may be in areas of:

- Privatisation regulation
- Water abstraction licensing
- Variable tariff structures
- Regulation about private sources exploitation
- Regulation of the informal sector private vendors

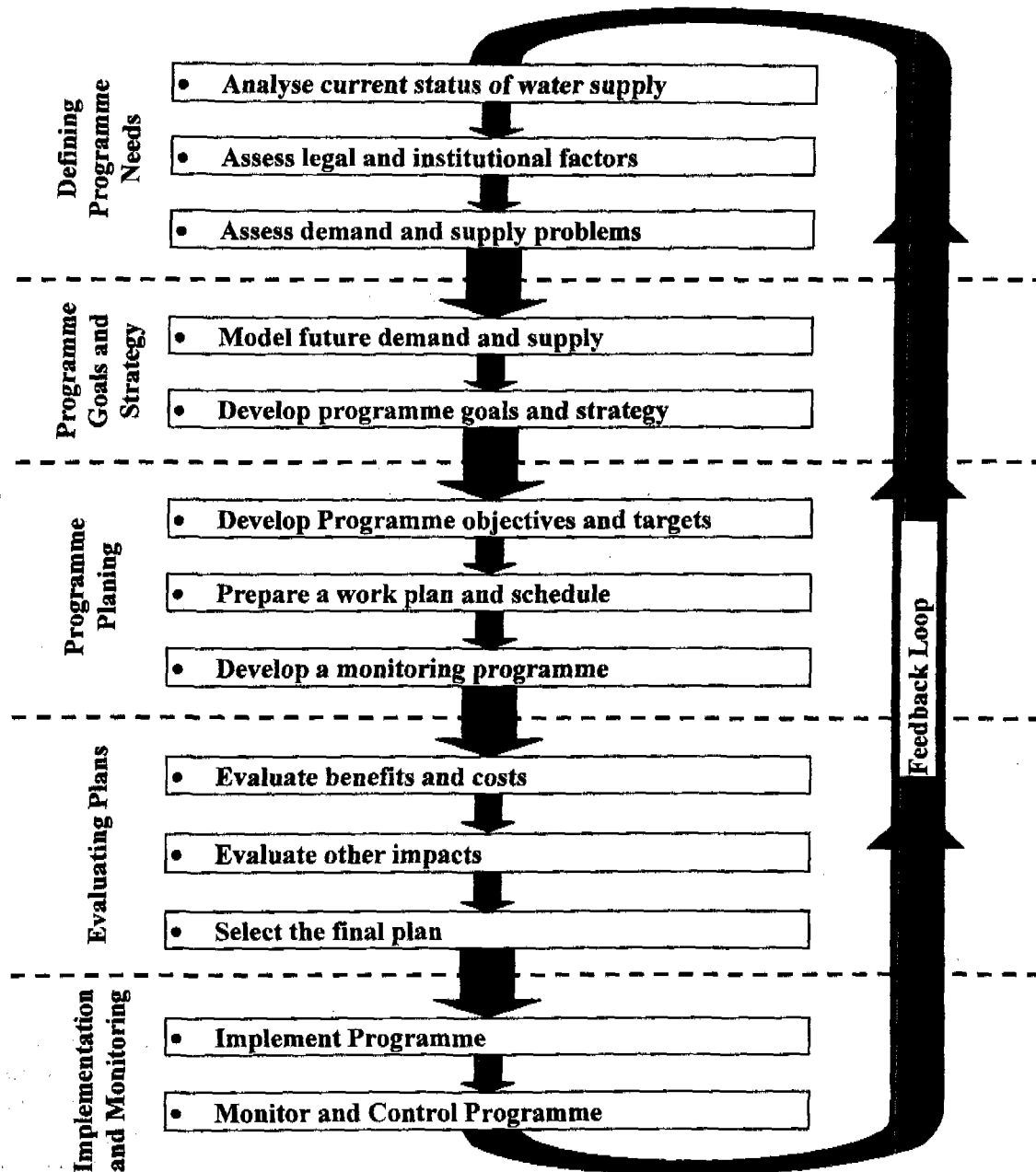
Private Sector Participation:

Private sector participation has come about due to the inability of the public sector to provide an efficient and reliable service. In many countries both domestic users and industry have had to resort to alternative informal supply systems. However private sector participation is not only helpful for providing a good water supply service but also in establishing and maintaining an efficient water management system. By establishing a comprehensive management system, the private sector aids the implementation of a water demand management programme. The key however is to identify the right level of private sector participation and to control and regulate this co-operation. So in essence a state body which has responsibility for setting an appropriate regulatory framework, standards and prices, protecting against unscrupulous private sector partners and developing an attractive business environment for potential investors. (UNCHS 1999b)

Development of a Water Demand Management Programme

While many decision-maker and local authority manager still consider that for Water Demand Management one action alone will suffice, a comprehensive WDM programme usually makes use of a wide range of different management tools. While not dismissing traditional structural approaches, a comprehensive Water Demand Management strategy also calls for the use of policy, legal, economic/financial, technological and other means. For an optimal combination of the different approaches and measures a comprehensive programme to set a framework is essential. It should not only co-ordinate

the various different approaches but also structure the main elements of the programme. The following schematic representation of a programme illustrates the main elements of a programme and highlights the linkage between them:
Figure 1: Programme Planning and Implementation Cycle



Although there is a similar structure in any programme planning, the development of every individual programme is a dynamic process. It can hardly be emphasised enough that conditions vary significantly from one country to another as well as within countries. Any programme plan needs to be tailored down to the local needs and circumstances. This guide offers a general framework for developing a Water Demand Management programme. The application of this guide facilitates an open and flexible programme process sensitive to individual circumstances and local needs. As the art of programming, should be seen as a continuous learning process, the handbook provides a set of practical checklists at each stage of the programme development to highlight the key steps and adjust the general programme framework to the individual needs. These checklists are not exhaustive and rather meant to act as pointers to foster the continuous process of programme development.

References

UNCHS (1999a): Managing Water for African Cities; brochure, Nairobi

UNCHS (1999b): Urban Water Demand Management: A Handbook for Developing a WDM Programme; mimeo, Nairobi