

Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

OPENING ADDRESS

Akira Seki
Director, Agriculture and Social Sectors Department (West)
Asian Development Bank

Good Morning Ladies and Gentlemen,

Introduction

For the next three days we have some 80 people from DMC Governments, DMC water authorities, private sector consultants and contractors, and external support agencies gathered here in Manila for this Regional Forum on Regulatory Systems and Networking of Water Utilities and Regulatory Bodies. I welcome you all and thank you for making the effort to be here and participate in this notable event.

This morning I would like to first talk to you about ADB's Water Policy that was approved by our Board of Directors earlier this year. I will then identify some issues in the water supply subsector in our developing countries. Finally, I will move to the substance of this forum and note some areas you may wish to give special consideration in your deliberations.

Water security is a rapidly growing issue in the Asian and Pacific Region. The threat of inadequate safe water is real. At the same time, water is a key development ingredient that impacts on a variety of factors that sustain and enhance life. As a critical natural resource, the issues connected with managing it involve allocation and distribution, equity, conservation, pricing, regulation, education, participation, and sustainable use. With the region's rapid population growth, rising industrialization, increasing environmental degradation and pollution, and the specter of a dwindling resource, stakeholders are now emphasizing the need to address issues related to integrated water resource management in a comprehensive and holistic manner. Policies for the sustainable use of water need to be developed in consultation with all stakeholders.

ADB's Water Policy

ADB's water policy, which was developed with extensive stakeholder consultation, has the following seven main elements:

- Promote a national focus on water sector reform (including policies, laws, institutional capacity building, information management, and sector co-ordination).
- Foster the integrated management of water resources especially in river basins.
- Improve and expand the delivery of water services (including private sector participation and emphasizing equity in access to water for the poor).
- Foster the conservation of water and increase system efficiencies.
- Promote regional cooperation and increase the mutually beneficial use of shared water resources within and between countries.
- Facilitate the exchange of water sector information and experience (including public-private- community-NGO partnerships).
- Improve governance (including the promotion of decentralization).

Ladies and gentleman you can see that this regional forum will address nearly all of the main elements of ADB's water policy.

Water Supplies in our DMCs

Now I would like to mention four of the main issues regarding water supplies in our DMCs which we all need to give much more attention.

Serving the Urban Poor

ADB's principal objective, as you no doubt know, is poverty alleviation in our DMCs. In the rural areas, for water and sanitation, this is manifested in distance to access water, female education foregone fetching water, the physical burden of carting water, and a lack of hygiene awareness. In the urban areas, among others, it is manifested in the cost of water, the unreliability of intermittent supply, the poor environmental sanitation conditions, and the lack of privacy for females in sanitation. Notwithstanding the privatization of some urban

water supplies in our region, millions of the poor are still unserved with piped water supply and paying 10 times the rich to procure water by the container.

Conflict of Water Use (Irrigation vs. Urban Domestic Water Supply)

As urban areas rapidly expand, (which is to a large degree unstoppable) more and more water is required from the areas surrounding cities, and we are finding that irrigation has already bespoken for most of that water. Our DMCs need to urgently develop policies and laws that will allow the most economic use of that water. Trading of water rights, cropping alternatives to paddy, and much more efficient operation and maintenance (O&M) of irrigation systems will have to become a reality in the near future.

Political Interference in Tariffs

Well, as you know this is one of the main reasons for regulatory bodies and this regional technical assistance. ADB has had experiences over the years where DMC water authorities have gone through a number of cycles of good and bad performance and these have all been the direct consequence of changing political influences. Tariffs are the lifeblood of a water authority and to have them controlled by political whim is to deny sustainable development and under-utilize the good human resources to be found in the DMC water authorities.

Intermittent and Unaccounted for Water

The example of the Malé Water and Sewerage Company Pvt Ltd (MWSC) in the Maldives, which runs a 24-hour piped water supply with domestic consumption of 20-30 liters per capita, is proof to all that it is not shortage of water that is the reason for intermittent water supplies on the sub-continent. The price of water and metering are at the core of the problem.

After 20 or more years highlighting the problem of unaccounted for water, we have still in our region (apart from such notables as Singapore and Macao), to see any real inroads in reducing unaccounted for water. Part of the reason for this is obvious. There is not adequate metering nor billing and collection. With computerized systems it should be very easy now to address these ills, if there is genuine willingness to change. And there is no excuse for not fixing visible leaks in the service connections (the main source of leakage).

Regulatory Bodies and this Forum

Now I come to my third and final subject, which is the focus of this forum.

The recent history of our region has shown that the advent of the regulatory body was a result of the push to privatization. Since regulatory bodies were not in place at the time of privatization, then we effectively got regulation by contract. The organization set to administer that contract was then appointed the regulator. Three conclusions emerged. First, regulation by contract was not working because there is a major difference between contract administration and regulation. Second, independent, sole purpose, regulatory bodies were needed for all water supplies not just those privatized. Third, more than ever, the need for a sound and transparent policy from the Government was seen as the foundation upon which regulation must be based.

I want to take up on that second point. In our DMCs at least 98% of our systems are not privatized. If we are going to have regulatory bodies, they must be very relevant to the existing conditions of urban water supplies in our DMCs. For example, to talk of rate of return on assets for many of our municipal water authorities is just not realistic right now. So in your deliberations in this forum, please above all keep this in mind. Our DMCs are not the United Kingdom (UK) or France or Australia and most have not, nor are likely in the near future, to have many privatized systems.

This forum is timely for ADB and our DMCs. ADB is actively working with other stakeholders to set up regulatory bodies right now in Sri Lanka and Nepal and a number of

those stakeholders, including some from the World Bank are here today. Indeed, tomorrow I will host a small working lunch with some of you to further pursue developments of both the regulatory body and privatization steps in Kathmandu.

You will see in the program at the end of today a presentation from the concerned consultant about another ADB regional technical assistance, Public-Private Community Partnerships in Urban Services for the Poor. Again, in your deliberations at this forum please pay special attention to the urban poor to see not only that they are not disadvantaged, but that special provisions are made in regulation to ensure their plight with respect to water improves. Feedback from this forum to the other regional technical assistance is important.

Let me mention corruption. Please don't ignore the potential for good regulatory bodies to reduce corruption in our development work. The opponents of change are most likely to be those who are unfairly benefiting from the existing water supply operations.

Finally, let me say to you that there are not so many occasions when a number of key players in the sector get together like this. Please take the opportunity to discuss also broader sector issues both with your fellow participants and ADB staff. We do not presume to know the answers. We most of all need to listen to what you are saying.

Once again, a very warm welcome to you all and I wish you all the best with your discussions. Thank you.

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OPENING ADDRESS

**Ranjith Wirasinha
Former Executive Secretary
Water Supply and Sanitation Collaborative Council**

WATER SUPPLY AND SANITATION - TODAY'S SITUATION

The poor pay a terrible price for their poverty

Squalor, disease and death in and around Third World cities are daily reminders of the societal divide that condemns more and more people to marginal and undignified existence. Inadequate water and sanitation services add to the indignity, increase the disease burden, and make it ever more difficult for the deprived to escape the poverty trap.

About 6,000 people die every day from diarrhoeal disease. Why do we accept this? There are still 1,100 million people without access to an acceptable supply of drinking water and a shameful 2,400 million without hygienic means of sanitation. Why do we continue to pay the heavy price in health care, lost productivity and environmental degradation, rather than the lesser cost of fostering improved health and hygiene through sustainable water and sanitation services?

Improvements are barely matching population increase. Business as usual will not achieve fast enough progress.

Behind the Statistics

The WHO/UNICEF "Global Water Supply and Sanitation Assessment 2000 Report" (November 2000) records that through the 1990s:

- An average of 224,000 people a day gained access to improved water supplies;
- 205,000 people a day, had improved sanitation;
- Over the same period, however, the world's population grew by 216,000 per day;
- 2,000 million of the 2,400 million people without access to hygienic sanitation live in rural areas; and
- 900 million of the 1,100 million lacking access to the safe water are also in rural areas.

Global Water Supply and Sanitation Coverage

	1990 Population (millions)				2000 Population (millions)			
	Total population	Population served	Population unserved	% served	Total population	Population served	Population unserved	% served
GLOBAL	(76% of global population represented)				(89% of global population represented)			
Urban water supply	2,292	2,179	113	95	2,845	2,672	173	94
Rural water supply	2,974	1,961	1,013	66	3,210	2,284	926	71
Total water supply	5,266	4,140	1,126	79	6,055	4,956	1,099	82
Urban sanitation	2,292	1,877	415	82	2,845	2,442	403	86
Rural sanitation	2,974	1,028	1,946	35	3,210	1,210	2,000	38
Total Sanitation	5,266	2,905	2,361	55	6,055	3,652	2,403	60

Source: WHO/UNICEF, Global Water Supply and Sanitation Assessment 2000 Report.

Asian Water Supply and Sanitation Coverage

	1990 Population (millions)				2000 Population (millions)			
	Total population	Population served	Population unserved	% served	Total population	Population served	Population unserved	% served
ASIA	(88% of global population represented)				(94% of global population represented)			
Urban water supply	1,029	972	57	94	1,352	1,254	98	93
Rural water supply	2,151	1,433	718	67	2,331	1,736	595	75
Total water supply	3,180	2,405	775	76	3,683	2,990	693	81
Urban sanitation	1,029	690	339	67	1,352	1,055	297	78
Rural sanitation	2,151	496	1,655	23	2,331	712	1,619	31
Total Sanitation	3,180	1,186	1,994	37	3,683	1,767	1,916	48

Source: WHO/UNICEF, Global Water Supply and Sanitation Assessment 2000 Report.

The Vision 21 target for 2015 calls for the number without access to water supply and environmental sanitation to be halved. This requires a 30% increase in progress for water supply and double the progress made for sanitation in the 1990s.

The WHO/UNICEF assessment 2000 confirms the close correlation between the state of a country's economy and the availability of basic water and sanitation services, or between poverty and access to safe water and sanitation. That means that the need to improve water and sanitation services for the poor must be on the poverty eradication and economic growth agenda of governments and international development agencies.

A List of Issues in Water Supply and Sanitation Services

Immediate Issues

- Many without access to services - mostly the poor
- Rapid urbanization and the demands and issues in its wake
- Poor recovery of costs, other inefficiencies, corruption
- Approach more hardware oriented
- Centrally planned, over designed, not affordable
- Lack of participation of stakeholders, little consultation
- Limitation of funds (external and local)
- Inappropriate and inadequate regulatory frameworks
- Business as usual

Associated Issues

- Uneven distribution of water resources temporally and geographically
- Institutional fragmentation impeding proper water resources management

The Larger Overarching Issues

- Human development and environmental sustainability requires longer horizons than the 3-5 year horizons of politicians.
- Weak policy frameworks
- Lack of political will and action
- Lack of a vision

VISION 21: A Shared Vision for Hygiene, Sanitation and Water Supply

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

Essence of the Vision

- Building on people's energy and creativity at all levels
- Holistic approach
- Committed and compassionate leadership and good governance
- Synergy among all partners

Vision 21 Core Points

- People come first
- A human right to basic services
- Entry-point to human development and poverty elimination
- Committed and compassionate leadership
- Synergy of action
- Hygiene and sanitation as a revolutionary priority
- Gender equity for lasting change
- The challenge of the urban poor
- Institutions as change agents
- Mobilization for affordable services
- Shared water resources management

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Regulatory Bodies, Public Awareness and Transparency

**Arthur C. McIntosh
Senior Project Engineer, AWWU/AWD
Asian Development Bank**

REGULATORY BODIES, PUBLIC AWARENESS and TRANSPARENCY

The Problem of Urban Water Supplies in Developing Countries

The major problem is political interference in the autonomy of the water utility. This includes interference in tariffs, investments, staffing, new connections, disconnections, and appointment of consultants and contractors. This problem is compounded by a lack of accountability of the utility for performance, a lack of incentives in the utility for better performance, and a lack of separation of roles of the owner, regulator and operator.

When politicians decline to approve revisions in tariffs they normally cite one of three reasons: (i) the low efficiency of the utility, (ii) the poor people cannot afford the tariff increase, or (iii) upcoming general, local authority, or presidential elections. This author believes that none of these are valid reasons for not approving a tariff increase necessary to maintain financial viability of the utility, and in fact these excuses are but a smokescreen for the real reason, which is the politicians do not want to lose control of the money trail. Thus corruption and governance are at the heart of the matter.

The Consequences of Political Interference and Lack of Accountability

The water service to existing and potential consumers has suffered most. For the unserved urban poor, not only must they struggle without direct connection to the piped supply, but also they end up paying 10-20 times as much for water as those connected, because they must buy it in small quantities from vendors. For those who are connected, the supplies are intermittent, often for one or two hours per day only, and the water is not potable. This results in additional costs to the consumer including storage and pumping facilities, and pumping and treatment costs such as filtering and/or boiling of water. Both consumers and the unserved urban poor experience a high incidence of water-related diseases.

Low tariffs mean there is no demand management of water resources by pricing, leading to earlier investment in new source development than needed. Low tariffs mean all investment has to come from outside sources, eroding the independence and autonomy of the utility. Low tariffs effect the financial viability of the utility to sustain services.

High unaccounted for water is a consequence of both political interference and lack of accountability. Part of this is leakage, that is not fixed due to poor maintenance, low staff morale, the perception that water has low value (low tariffs), and because it provides a legitimate smokescreen for the other half of unaccounted for water, illegal connections. Illegal connections are installed by the utility staff because they are so poorly paid they could scarcely earn a living otherwise. Meter readers collude with consumers to benefit one another. Poor standards of construction are common as consultants' and contractors' profits are cut to the bone by greedy politicians demanding their cut.

What Has Been Done To Correct This Situation?

Governments rush to prepare policy statements at the behest of potential donors, but the policy is not conveyed to the people, nor is it implemented by the government. Multi-development banks such as ADB and the World Bank have sought to correct the situation through loan covenants, but these, especially the ones involving tariffs, are invariably delayed in compliance. We have seen corporatization of water utilities, but legislation, while being necessary is not sufficient to ensure autonomy. Political will is also necessary, and so often politicians ignore the autonomy granted to the utility by law. More recently we have had an accent on privatization. But the jury is still out on whether it is indeed bringing the twin benefits of greater efficiency and more investment funds. Regulation of the private sector has to date only been regulation by contract, meaning in reality it amounts to contract

administration. Attempts have been made to devolve power to local authorities, but often this is honored more in the word than the deed, as both appropriate financial and human resources are not provided to such local authorities. Nongovernment organizations (NGOs) are beginning to make their presence felt as watchdogs, and that is good, but they too are divided and don't yet enjoy the popular support of the people.

What Do We Need Now?

First, we need a transparent government policy, written in language the people can understand, and addressing piped water coverage (investments), service levels, operator performance, and operator incentives. The policy must be communicated to the people through every means and kept in their view. Second, we need an independent regulatory body tasked with seeing that the policy is implemented. We need operators with incentives to perform against agreed criteria. These can be private operators, local authorities, or national water authorities. For accountability, we need water consumer societies to monitor the performance of the operator in delivering good services to the people. Most important of all, we need major tariff reform, so that tariffs directly cover the cost of new investments and the private sector are encouraged to offer their services without the perception that they are being subsidized by the government.

Why Will This Work?

What we have today, that we did not have in the past, is access to information through the Internet. Although only a small percentage of the population in a developing country may have access to the Internet, through other media, such as radio and newspapers, the information on the Internet can be conveyed to people at the grass root level. One of the great benefits of the Internet is that it has provided transparency and public awareness. It will give teeth to the regulatory body that can maintain its own website. It will feed the water consumer societies with information and be an avenue for them to express their own views. Already the Internet has leveled the playing field somewhat on privatization by allowing people around the world to share their experiences. The power of the politician will be greatly diminished when the people know as much and even more than they do about a given subject. When the consumers, and those not yet served with piped water, know the facts, they will be the ones to spearhead the drive for higher tariffs, because he who pays the piper calls the tune. In the end, as in the e-commerce world, the consumer will be king, because of access to lots of information. The consumer will be the ultimate regulator, demanding accountability for government policy implementation. NGOs, journalists and academics are expected to play a major role in getting water consumer societies formed and keeping them well informed.

How Will This Work?

The following scenario spells out necessary steps in the reform process. First, government (after consultation with key stakeholders) should declare its policy in a language understandable to the people, and then maintain that policy visible to the public at all times. An independent regulatory body should be established to oversee implementation of the government policy. Contracts can be prepared with private operators based on the government policy. Memorandums of understanding (MOUs) can be prepared between the regulatory body and other operators outlining performance and incentives. The operator should be encouraged to publish its own performance data on its own website. The regulatory body will employ a consultant to audit the performance of all the operators and then will publish these results and analysis alongside the stated government policy. The regulatory body will then recommend action for further compliance with government policy / contracts / MOUs and establish the necessary rewards and penalties. It will publish all this too on its own

website. Donor organizations or third parties like NGOs would then analyze the performance of utilities in various countries and publish them on the Internet.

Key Factors for Success

The above scenario cannot play out unless the government is committed first to a policy of good governance and transparency. Then it must produce a water supply policy that it means to implement. Such policy must include incentives for operators to improve performance and should include a tariff policy that promotes tariffs at levels sufficient to finance new capital works. The other key factors for success include establishment of strong water consumer societies and the active role of NGOs, journalists and academics as watchdogs on implementation of policy. Finally, professional public relations consultants should be employed to facilitate the involvement of all key stakeholders in the reform process.

Regional Forum:

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PROCEEDINGS OF THE REGIONAL FORUM

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Introduction

The Regional Forum on Regulatory Systems and Networking of Water Utilities and Regulatory Bodies was held at the Asian Development Bank (ADB) in Manila from 26 to 28 March 2001. The purpose of the Forum was to present and discuss the overview of regulatory systems and case studies, country reports, experiences of other countries, consultants, private operators, and international organizations. It was hoped that the presentations and discussions would help developing member countries' (DMC) governments in finding ways to establish independent regulatory bodies. The Forum also aimed to discuss the establishment of networks of water utilities and regulatory bodies.

There were about 75 participants and observers from 18 countries in the region representing governments, water utilities, consultants, private operators, external support agencies, and international and regional organizations who attended the Forum. The Forum Program and the List of Participants are given in Appendix 1 and Appendix 2, respectively. The Forum followed a format of presentations of related topics in PowerPoint slides, followed by open plenary discussions. A total of 25 presentations were made covering a theme paper on regulatory bodies, public awareness, and transparency; an overview of regulatory systems based on case studies in 10 developed and developing countries; country reports from eight DMCs; country experiences from England, Australia, Japan, and the Philippines on regulation and privatization; and, views from consultants, private operators, an external support agency (ESA), and a regional organization. Four working groups were formed to further discuss specific issues in three group discussion sessions and to allow more time for participants to express their views on the topics presented in the plenary sessions.

In the afternoon of the third day, participants discussed the establishment of networks among water utilities and regulatory bodies among the DMCs in the region. Presentations were made on the Water Utilities Partnership-South Asia (WUPSA) and the Pacific Water Association (PWA) with views from external support agencies (ESAs), international and regional organizations.

The opening addresses, the theme paper, the summary of findings, the overview of regulatory systems and case studies, and the summary of each country report are included in this report.

Opening Addresses

The participants were welcomed by the Director of the Agriculture and Social Sectors Department (West) of ADB, Akira Seki, who in his opening address underlined ADB's Water Policy, the main issues in the water supply subsector in DMCs, and the need for regulation in the development of water supplies. The seven elements of the Water Policy include: water sector reform, integrated water management, improved delivery of water services, conservation and efficiency, regional cooperation, sharing and exchange of information, and improved governance. Mr. Seki mentioned four main issues affecting the DMCs such as serving the urban poor, conflicts in water use, political interference in tariffs, intermittent and unaccounted for water. He emphasized the need for independent regulatory bodies and for sound and transparent policy from governments on which to base regulation.

Ranjith Wirasinha, former Executive Secretary of the Water Supply and Sanitation Collaborative Council (WSSCC), in his address, asked why we continue to pay the heavy price in health care, lost productivity, and environmental degradation, rather than the lesser cost of fostering improved health and hygiene through sustainable water and sanitation services. He continued by presenting the result of the WHO/UNICEF Global Water Supply and Sanitation Assessment 2000 Report with the global population coverage of 82% for water

supply and 60% for sanitation compared to Asia's coverage of 81% for water supply and 48% for sanitation. Mr. Wirasinha enumerated the issues affecting delivery of water and sanitation services and the essence and core points of Vision 21 which is a Shared Vision for Hygiene, Sanitation, and Water Supply for a world in which every person has safe and adequate water and sanitation and lives in a hygienic environment.

Regulatory Bodies, Public Awareness and Transparency

Arthur McIntosh, ADB Senior Project Engineer (Water Supply), in his paper on Regulatory Bodies, Public Awareness, and Transparency, presented the major problem of political interference in the autonomy of water utilities and the consequences of such interference. He said that water service to existing and potential consumers has suffered most and the unserved urban poor end up paying 10-20 times as much for water as those connected. Mr. McIntosh suggested the need for a transparent government policy addressing piped water coverage, service levels, operator's performance, and operator incentives. There is also a need for operators with incentives to perform against agreed criteria, and for water consumer societies to monitor the performance of the operators. Finally, there is a need for major tariff reform with tariffs set to cover the cost of new investments.

Overview of Regulatory Systems

William Stanley, the International Consultant for the regional technical assistance (RETA), made an overview of regulatory systems based on his Review of Regulatory Frameworks and case studies on regulation in 10 countries. The presentation included the purpose of regulation, the regulatory package with the duties of the regulator, criteria for successful regulation, international models, and building regulatory frameworks. Mr. Stanley said that economic regulation is for the protection of consumers and the commercial viability of service providers. To do these, the economic regulator determines service standards and targets, tariff levels and schemes, monitors and measures company performance, and enforces compliance and imposes sanctions. He also enumerated the criteria for successful regulation where the regulator must have a clear mandate of duties and powers, autonomy to make decisions, accountability in arbitration, transparency, stability by being consistent, professionalism to gain status and respect, and must be objective by being non-partisan and focused. Mr. Stanley added that there is no universal model in building a regulatory framework. One has to adapt to institutional arrangements, ensure primary obligations are met, provide conditions for effective regulation, and evolve the framework over time.

Country Reports - Major Issues, Policy Approaches and Recommendations

Representatives from eight DMCs (Bangladesh, People's Republic of China, India, Nepal, Philippines, Sri Lanka, Thailand, and Viet Nam) presented their country reports highlighting summaries of current situation and issues affecting delivery of services, policy approaches to address these issues, and recommendations on regulation of the sector in their countries. These are summarized as follows:

Current Situation

- Service provision is dominated by the public sector.
- There is a need to improve and extend water and sanitation services.
- Water is treated as a social good especially in South Asia.
- Private sector participation is encouraged.
- Regulation for the sector is weak.

Major Issues

- Funding deficit and inadequate resources
- Tariffs too low to cover basic operating expenses
- Ineffective management and lack of human resources capacity
- Overlapping responsibilities among sector agencies
- Lack of management autonomy
- Excessive political influence
- Poor service standards and performance

Policy Approaches

- Promote private sector participation and financing
- Financial reforms to include sound cost recovery mechanisms and tariff structures
- Institutional reforms with more autonomy and accountability
- Separation of policy, regulatory, and operating functions among agencies
- Establish independent regulators

Recommendations for Regulatory Body

- Single regulatory body which could be at the national or state level depending on the country's assignment of sector responsibility
- Characteristics of the regulatory body should include:
 - independence and autonomy
 - accountability and transparency
 - protect consumers
 - promote commercial viability
 - implement tariff policy

Country Experiences: Cost Recovery, Tariff Revision and Accountability

Participants from six countries (Hong Kong, China; Singapore; Malaysia; Maldives; Korea; and Indonesia) made brief presentations on their experiences on cost recovery, tariff revision and accountability. The presentations are summarized as follows:

Cost Recovery

Except for Singapore, all the other countries are operating on deficit, unable to recover costs of operations from tariffs. The Public Utilities Board (PUB) of Singapore maintains a rate of return on equity of 8%. Local governments provide some form of subsidy to cover the shortfalls in the other countries.

Tariff Revision

While there are systems for tariff revisions, tariff adjustments have always been a difficult exercise for most of the countries. Tariff reviews are rare in Malaysia, maybe once every 10 years. Malé Water and Sewerage Company Pvt Ltd (MWSC) in the Maldives has not applied for a tariff revision in the last five years. The last tariff revision in Singapore was in 1996 with the previous revision 10 years prior to the last.

Accountability

The Water Supplies Department (WSD) in Hong Kong, China is self-regulating with the Government of the Hong Kong Special Administrative Region providing check and balance. The respective state governments undertake regulation in Malaysia. The Maldives Water and Sanitation Authority (MWSA) regulates the MWSC, a joint venture between the Government

and a Danish firm. Consumers in Hong Kong, China can voice their concerns on services through consultative and advisory committees and district councilors in the government. An ombudsman can also hear complaints of consumers, which WSD has to address. PUB in Singapore is aware of consequences of not meeting standards of water quality-sensitive industries like wafer plants and oil refineries. It is finding it difficult to benchmark performance indicators as PUB is in uncharted territories in most areas of their work. Indonesia is undertaking a benchmarking project for 100 water enterprises that could be the start of making the utilities accountable to their customers.

Country Experiences: Privatization and Public Performance Assessment

Privatization in Japan

Mr. Osamu Ikeda made a short presentation on the privatization movement in Japan. He showed why the privatization movement is not moving fast in Japan where local governments operate about 2,000 water supplies with technical regulation by the central Government. Financing of local government projects are controlled by central Government and local governments cannot borrow without central Government permission. Mr. Ikeda added that only service contracts are allowed and a pending amendment to the Water Supply Act will allow management contracts with the private sector. While the Private Fund for Infrastructure Act of 1999 aims to mobilize funds for public works project, there are a lot of both public and private funds that are floating in the market looking for investment opportunities, he said.

Public Performance Assessment

Col. Angel Efen Agustin of the Metropolitan Waterworks and Sewerage System Regulatory Office (MWSS-RO) in the Philippines presented the result of the World Bank-funded Public Performance Assessment (PPA) Project with Mr. Vijay Jagannathan of the World Bank. Col. Agustin said that the PPA project is a public information feed back system to improve water services by focusing on key performance areas where the MWSS concessionaires can make improvements on network quality, water quality, health quality, service quality, and coverage. The PPA makes use of data provided by the concessionaires and those generated by a survey of water users that are then processed, analyzed, and synthesized for a combined performance rating. Mr. Jagannathan explained that the idea of the PPA came about during the bidding for the Manila concessions when bidders raised a lot of issues including regulation. He said that the most powerful regulatory tool is the availability of information, and the public disclosure of information on the essential attributes of services that consumers want. The PPA utilizes an independent third party to figure out a system and then to inform the community on what are the service attributes and characteristics. Mr. Jagannathan remarked that with modern technology and a geographic information system, it became possible to show through geographic boundaries how different parts of the city have been performing in terms of basic performance indicators.

Contractors and Consultants' Experiences

Ondeo Services

Mr. Yves Bories presented the experiences of Lyonnaise des Eaux (now known as Ondeo Services) in four countries, Northumbrian Water (United Kingdom), Palyja (West Jakarta, Indonesia), Maynilad Water (Manila West Zone, Philippines), and Aguas Argentinas (Buenos Aires, Argentina). On the common points of those experiences, he said that contracts are not static documents that cannot be adjusted to reflect the true intent of the parties. More often than not, there is a need to renegotiate a contract in order to meet its original objectives. He

added that their experiences show that re-negotiation results in a concession that is more mature, more stable, and more sustainable.

Based on Ondeo's experiences, the lessons learned include the following:

- The original design of a public-private partnership scheme can not foresee all possible evolution especially where the starting point is based on insufficient or inaccurate documentation.
- Contract adjustments are necessary to reflect the realities and the change in the operating environment.
- The rules and mechanisms should address the long-term financeability of the concession.
- Multi-lateral agencies play an essential role in structuring long-term instruments that concessions require.
- The customers are the ultimate regulator and the genuine owner of the economic equation of a concession because it is the willingness and capacity to pay that will determine the investment capacity and service level provided. Government and the private sector must cooperate in sharing the objective of maintaining this equation.

Katalyst 21 Pty Ltd

Mr. Chris Pollett presented water regulation in Australia and how it evolved. He noted that while there are different issues between the participants' countries and Australia, there are fundamental lessons to be learned. Among the key issues are: coordination of regulation – how to balance standards and price, economic regulation is in its infancy, role separation (service provider and regulator) is slow to evolve, most state governments are having a lot of trouble with the concept of independent regulator, and, rigor and transparency of regulation are quite limited.

Given the characteristics of the Australian water sector, lessons for the Asian water sector include:

- Clarity of accountability, and separation of owner, operator, regulator roles promote reform;
- When the community places a high value on standards, and when regulators are separately established, coordination and integration of regulation takes time to evolve;
- If there are strong and capable operators, adequate resources and a stable, accountable political system, and no competition, self regulation will operate reasonably well – but costs will be high;
- Development of economic regulation is slow in the absence of private involvement or competition;
- National policy oversight is valuable; national and international benchmarking promote change; and
- Economic regulation is important – to protect customers and provide incentives for public monopoly operators, in the absence of competition.

Mr. Keith Stallard made a presentation on behalf of Alfonso Guzman of Deloitte Touche Tohmatsu who was originally scheduled to present their experience in Chile and Colombia. Based on the experience in these two countries, the key issues in designing regulatory frameworks include the following:

- Recognize the current level of development of the industry, i.e. current tariffs, levels of service, and governance;
- Introduce measures that will gradually (transition) develop the industry. These measures include: levels of service that should be achieved, prices that should be charged, and transition period for achieving these;

- Separate political interest from key regulatory decisions, e.g. tariff increases, definition of levels of service; and
- Harmonize cost recovery requirements with intergovernmental transfers. Link these transfers to positive incentives for raising tariffs and increasing levels of service.

Public-Private Community Partnerships in Urban Services for the Poor

Dr. Richard Franceys presented the Public-Private Community Partnerships in Urban Services for the Poor regional technical assistance (RETA) of ADB that includes water supply, sanitation, and solid waste management. He also presented public-private partnership (PPP) and regulation as well as the customers' role in the Customer Service Committees (CSCs) under the regulator for England and Wales, which is the Office of Water Services (Ofwat). He said that CSCs are part of Ofwat and that the latter has a statutory duty to listen to the customers through the CSCs. On regulation, Dr. Franceys said, "Regulation is a process, ever changing. It is not fixed at one moment in time when the contract starts. It is always evolving." One recommendation made by the CSC is to try to sort out regulation first, otherwise, you are always learning as you go along, before going into the details of PPP.

Regulation of the Australian Water Industry

Mr. Peter Harford presented the reforms taken by the Government on the Australian water industry with the National Competition Policy. It includes price oversight to prevent monopoly and political price setting, application of competitive neutrality principles to remove advantages of government ownership, and restructuring of government business separating regulation, commercial function (service provision), and potentially competitive activities. The basic reason why the federal government was able to get all the six states to agree on the National Competition Policy was the huge incentives to undertake reforms. Large payments were made to the states on the achievement of their reform agenda. The agreed national strategic framework for water industry reform includes cost recovery and pricing, institutional reform, water allocation and trading, environment and water quality, and public consultation and education. Mr. Harford also discussed the state regulatory arrangements dealing with changes in progress on regulation in Victoria. Finally, he enumerated the principles for regulation emphasizing comprehensiveness to cover all aspects of service (price, service, water quality, and environment), independence (from government and service providers), and the expertise required. He said, "The level of skills required to carry out the regulatory process should never be underestimated. Perhaps, this is the major issue for developing countries. It is a specialized skill. There aren't many people and they are likely to be expensive and hard to get."

Regulation of the Water Industry in England and Wales

Mr. Brian Allum discussed some of the results and benefits derived over the last 10 years in England and Wales and the underlying processes behind them that may be transferable to the general situation of other countries. He described the changes brought about by the Water Act of 1989 that created water public limited companies (PLCs) and provided for their sale through an offer of shares, and the creation of a regulatory framework for the PLCs to prevent the abuse of monopoly power. This moved the industry from an environment of historic low pricing of utility services, subsidies, and untried or undeveloped regulatory framework to an environment with an economic tariff rate structure, fair and equitable charging pattern, and an appropriate tariff adjustment mechanism. This resulted in a regulated business with quality standards controlled, prices controlled, and service levels specified. The result of this is that after 10 years, the United Kingdom (UK) water industry is characterized by high levels of investment, higher prices in real terms, reduced leakage,

capital and operating costs down, and service levels up. The next 10 years will see the UK water industry focusing more on water conservation (mandatory leakage targets, metering options), even higher levels of service (European Union drinking water directive), pressure on prices (lower price with higher level of service), more competition and industry changes. Mr. Allum reiterated that regulation is an evolving process.

Halcrow

Mr. Colin Schoon provided some practical perspectives from Halcrow's experience in three countries in South and East Asia (Subic, Olongapo, and Manila in the Philippines; Karachi in Pakistan; and Negombo in Sri Lanka). He said that ideally, regulation should be in place before the start of private sector participation (PSP) but this is rarely the case. In fact PSP frequently is the catalyst for change. In Subic and Olongapo, their advice for a separate regulation was rejected resulting in sub-optimal benefits with conflict of interest, limited capacity building, limited accountability and information to customers, leading to inadequate tariff increases. There was fundamental misunderstanding of the nature of regulation in the PSP context. Mr. Schoon said that regulation should be monitoring, adjudication, and enforcement where necessary rather than control. In Karachi, Pakistan PSP preparation started in 1996 was abandoned in 1998 because government's wish for a concession was too ambitious for the circumstances at that time. Two key features of the regulatory framework and legislation designed were exclusivity and the appeals mechanism which to be effective, must be speedy, relatively inexpensive, and binding (preferable to international arbitration which can be lengthy and costly). On regulation by contract, Mr. Schoon said, "Rather than protecting each party against the other, a PSP contract should define and promote common goals for the party that has no voice in the contract, the customer. Provided that this interpretation is applied, it should be possible to introduce regulation after PSP without fundamental changes in the contract". He also added that the key to regulatory capacity is to understand what information is needed and how to use it – both to inform the public and to effectively monitor the provider. He said that capacity building should commence with the preparation for PSP, and suggested that staff who will be part of the regulatory office should be assigned to work alongside the transaction advisers and work through the very intricate work of analyzing options, preparing the contract/bid process, and designing the contractual framework. Mr. Schoon commented that the competitive bidding for the Manila concessions based on lowest tariff might send the wrong price signal.

External Support Agencies and International Organizations

World Bank

Mr. Jan Janssens presented the World Bank Group's strategy to support the urban water sector in South Asia. He said that in the light of the main sector issues, it was no longer possible to pursue development following the old agenda like large public sector institutions, predisposition to construct infrastructure rather than to better operate them, political opposition to tariff increases, etc. With poverty alleviation as the overarching objective of the strategy, the key reforms to move forward are: institutional and regulatory reforms, appropriate pricing policies and tariff increases, and targeting the poor more effectively. Its institutional and regulatory reforms include PSP and performance incentives, and establishing independent regulators. On public-private partnerships, Mr. Janssens added that the right design involves the clear definition of roles, tasks and responsibilities; an appropriate institutional, legal and regulatory framework; a communication plan with the objectives of reform; and, an incentive structure to serve the poor. To promote and facilitate reform in the

urban water sector, the World Bank will support this through policy dialogue, public awareness and capacity building using knowledge products and dissemination

Mr. Vijay Jagannathan presented the World Bank's initiatives in East Asia citing differences between South Asia and East Asia. He mentioned the greater demand for water due to faster economic growth in the area that gave rise to self-provisioning for water supply due to the inability of water utilities to cope with the demand. This has led to more use of groundwater and the attendant environmental problems. He also mentioned the economic crisis in 1997 and the slowing down of institutional reforms in the 1990s. The decentralization move in many governments shifted the partnerships to those of consumers, local governments, and the private operators. The other elements of the strategy include addressing the inefficiencies in service provision, pushing for regulatory reforms, and targeting the poor as the focus in all countries in the region.

Workshop Outputs

Participants were divided into four working groups for the three group discussion sessions. For the first session, all groups were asked to list the most important points about regulation they have heard in the presentations. They were also asked about some other considerations not yet heard nor discussed thoroughly. For the second session, each group was asked to discuss different topics on regulation. The third session was about the way or approach for the future on regulation that was discussed by all groups. Following are the summary of all the group outputs.

Group Discussion – Session 1

The most important points about regulation they have heard are:

- Regulation protects service providers and consumers (ensure commercial viability; brings fair pricing between provider and customers).
- It ensures service to the poor (regulate for the poor; design for the poor, but even the poor must pay).
- Roles must be clear among the provider, regulator, and consumers (separation of roles; clear separation of service provision and regulation).
- Regulator must be independent (regulation exists but is not independent; how to ensure independence of regulator).
- Design of regulatory framework should be suited to specific needs of the community (tailor-made to specific country situation; no blueprint for PSP regulation)
- Consider different levels of regulatory body (resolve levels of regulation; determine location of regulatory body; separate regulatory body for mega cities; regulatory body for all water supply systems).
- Regulation is a dynamic process (we can design the journey; it is an evolving process; it should be flexible; there is no blueprint for PSP process).

The above points are common to three or more groups. Other points mentioned by two to three groups are: the importance of government commitment to regulate; consequences or pitfalls of over-regulation; regulatory body needs strong and independent financing support; regulation ensures good governance; it improves quality, standards and performance; and regulatory body should come first before PSP.

The considerations that the participants have not heard or considered, or were not adequately discussed are:

- How to achieve independence of regulator (is independent regulation feasible when government is sole supplier?).
- Criteria for selection of regulator
- Regulation models (what model works best in DMCs)

- Separation of roles (how to clarify the roles and duties of regulator, provider, manager; how to manage conflicts between government agencies)
- How to set up a multi-sectoral regulatory system
- PSP and regulation of small service providers (rural and community supplies)
- Timing and development of regulatory skills
- Balance of water as an economic and social good
- Technical regulation (production)
- Implementation procedures
- Level of government to locate regulation
- Funding and budget needs

From the discussions, it is clear that the participants would like to hear more on how to do things that they have accepted are needed to set up a regulatory system.

Group Discussion – Session 2

Group 1 was asked to discuss what to regulate and who would be doing the regulation. The group said that the following should be regulated: tariff, water quality, service standards, performance standards, service to low income groups, environmental standards, water resources allocation, market regulation (to prevent monopoly), and balance of interests (politicians, providers, consumers)

There are several regulators: *environmental authorities* for environmental standards (wastewater, pollution), *economic/service regulator* for tariff, service standards and performance standards, *public health authorities* for water quality, and *water resources councils* for water resource allocation.

The main priority is to have the regulators in place. Cabinet or parliament should appoint regulators. Criteria for selection should include: no interest in the water company; no political affiliation; and understanding of economics, consumer protection, markets, and competition.

Group 2 was asked what are needed to create an enabling environment for a regulatory system. They proposed education of politicians and sector professionals that will lead to creating political will to form a regulatory body. This should create a consensus on clear objectives and idea of benefits of regulation after analysis of existing regulatory and institutional frameworks. There should be a change in government role from being a service provider to that of a facilitator. Standards should be appropriate to the situation. There should be a realistic set of regulators. The group proposed that the regulatory body be established by law with a sense and demand for accountability and enforcement of water conservation. Capacity building and benchmarking were also proposed in establishing the regulatory system.

Group 3 was asked whether regulation should be founded on policy or law and whether a regulator sets standards and tariffs. The group presented that policy based on consultations is the foundation that must be implemented by laws with enforcement. In the absence of laws, contracts should be based on policy, hence, the importance of having a policy first. On tariff, the setting of tariff policy is by government; the operators apply for tariff changes, and then the regulatory body approves the tariff based on government policy. The group also said that expertise or recourse to it is needed by the regulatory body to set standards.

Group 4 was asked to discuss the issue of affordability. The group analyzed two scenarios and solutions to problems of affordability. For a scenario where the whole community can not afford the proposed rates, the service provider should minimize costs (i.e., smaller scale and shorter design life). Any subsidy should go direct to the service provider. However, regulators should ensure that service providers give efficient service and value for money. For a second scenario where the poor cannot afford the rates, the group proposed cross subsidy, different levels of service, different levels of tariffs including a lifeline tariff.

Group Discussion – Session 3

Each of the four groups was asked to discuss the way or approach for the future in establishing a regulatory body. The consensus among the groups is as follows:

- Appoint consultant (DMCs need implementation help) and a task force and obtain funds.
- Obtain information on regulation (sharing of best practices).
- Educate consumers and politicians (education and social mobilization).
- Obtain decision on creating regulatory body (political commitment).
- Create steering committee (with broad representation).
- Seek information and advice (experience of other countries; SAFIR; review of applicability of various models).
- Review policy (including sector reform and regulation).
- Decision on policy (there must be a strong national policy)
- Develop master plan on sector reform; decide on master plan (approval).
- Decide on regulatory framework; reform in existing regulatory body (who and what to regulate, consult all stakeholders, consensus building).
 - clear objectives of regulation
 - clear rules for private sector
 - clear definition of roles
 - specific to country situation
 - financial requirements
 - sector institution required
- Establish legislation creating regulatory body.
- Create proper environment and build capacity (acquire or develop expertise)

The above should be done having in mind the following: (i) the government sets up policies, broad guidelines on tariff, level of service, and subsidy; (ii) the regulatory body should be independent, public-oriented, and must have sufficient power and authority; and (iii) the regulatory body sets standards (best standards, quality, service, quantity).

The need for capacity building for regulatory bodies was stressed in the discussions, as there is lack of experience in regulatory bodies in the DMCs compared to the experience of international private service providers thus creating an imbalance. What is needed is in-service kind of training, not just lecture sessions. There is also a need for caution, to go step-by-step in the establishment of the regulatory body and not to do it simultaneously with privatization.

Closing Statement

Mr. Arjun Thapan, Manager of the Water Supply, Urban Development and Housing Division (West), made the closing statement by summing up what had been collectively achieved over the last two and a half days and expressing ADB's commitment to helping its DMC partners to establish regulatory bodies for the sector. He agreed with the participants that the regulatory process is a journey with much to be done and that there is no universal solution. Mr. Thapan also expressed the need for governments to declare their sector policies especially on cost recovery, the need to ensure that performance standards are established and that these are fair standards, that incentives are developed for staff of public water utilities to improve their performance, and above all, the need to ensure transparency. Finally, he asked the support of the participants to ensure that these objectives are achieved.

Networking of Water Utilities

The meeting on networking of water utilities and regulatory bodies started with presentations on the Water Utilities Partnership - South Asia (WUPSA) and the Pacific Water Association (PWA). These were followed by statements from the WSSCC and the World Bank who were involved in the organization of WUPSA and discussions on commitments and support.

Mr. Dinesh Pyakural, Interim Managing Director of WUPSA, presented the situation among water utilities in South Asia and the need for sector reforms to break the low performance cycle that has further marginalized the unserved and the poor population. He said that the mission of WUPSA is to build a credible networking organization to foster the reform process for the provision of urban water and sanitation services in South Asia. He elaborated on the overall objective of WUPSA of poverty reduction and social equity, and improved performance particularly in meeting the needs of the urban poor. These will be achieved through three program initiatives, namely: benchmarking and performance improvement, sector reform program, and public awareness initiative in the region covering Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Upcoming event is the Benchmarking Workshop in Dhaka in July 2001 for which they are seeking financial support from ADB.

Mr. David Parish briefed the participants on the PWA, which covers 22 independent countries throughout the Pacific Region with a total population of 11 million people. He said each of these countries have unique problems with some having very fragile environmental conditions - some countries are barely above sea level. With PWA, he said that they can present a unified voice or approach gaining consensus among member countries as to the position in the water and sanitation sector for the islands in the Pacific Region. Mr. Parish proceeded with explaining the organization, funding, objectives, and the activities of the association, which include the just completed Phase 2 of the ADB-funded benchmarking project. Key areas PWA would like to be involved in are: work experience training (due to lack of resource base), leak/waste management program, management engineering and laboratory tests, community awareness and education, and sharing of useful information through international organizations. On his support for networking and his experience with it, he said, "There are lots of very committed, dedicated people out there. The trick is identifying them, harnessing some of this energy, and getting people to support and commit themselves. It is people sharing, being aware of what is needed and supporting each other."

Mr. Ranjith Wirasinha started by saying how Asia is heading towards a tremendous level of urbanization and that those responsible for providing services will be at the receiving end of many demands. He said that many of the regional fora that were held in Asia came up with recommendations that these utilities need to be provided with opportunity of exchanging experiences, learning from each other, and being together. Mr. Wirasinha cited ADB in initially taking a major step in developing the water utilities data books that have helped considerably in exchanging views and providing a good part of the information that would be helpful in looking ahead. He encouraged the participants to come up with some arrangements that are sustainable to make the above recommendation happen with less dependence on ADB, the World Bank, and the bilateral agencies. He further elaborated on WSSCC with its very small secretariat that is housed in WHO in Geneva with its mandate from the United Nations to bring about collaboration between the developing countries and the ESAs with a focus on the unserved and the poor.

Mr. Jan Janssens added that a network has a role of a facilitator that means bringing together people and institutions to learn from each other. He said that it has a catalyst function and that the utility partnership is there to help the learning and sharing happen. Mr. Janssens then explained how the partnership concept was created in early 1990s and the subsequent creation of the Water Utilities Partnership - Africa six years later.

Mr. Arthur McIntosh stated that ADB is interested in the benchmarking and performance improvement project of WUPSA. ADB is looking for something to sustain the water utilities data books that could lead to an exit strategy. He welcomed the WUPSA initiative on benchmarking and performance improvement and challenged them to marry what ADB has been doing with performance indicators to what they would like to do. Mr. McIntosh suggested to keep the organization small, and make it work first before expanding to the whole region covering the rest of Asia and the Pacific.

During the discussions that followed the presentations, the following comments were made.

- Dr. Khondaker Haq, team leader of the benchmarking and performance improvement project, said that the water utilities data books will form the nucleus of the project. The parameters and the indicators will be improved and replaced as they go along with the water utilities generating the data and the ADB disseminating these data through its website.
- Mr. David Parish asked if the Pacific countries would be part of the exercise, to which Ranjith Wirasinha expressed the importance of these countries' participation.
- Mr. Peter Harford expressed willingness to coordinate participation of the Australian water industry in benchmarking, networking, and other activities while noting that Australia was not included in the water utilities data books.
- Mr. Wilfrido Barreiro and Mr. Mario Quitariano informed the participants that the Philippine water districts have been providing data for the water utilities industry averages since 1978 and that this is still done yearly for six categories of water utilities.
- Mr. Kumala Siregar also added that the Indonesian Water Supply Association (PERPAMSI) is currently benchmarking 100 water enterprises in Indonesia with World Bank assistance. He asked if the World Bank can help set up a water utilities network for South East Asia similar to WUPSA to which Jan Janssens expressed a willingness to help.

In the final session on the discussion of the WUPSA plans and commitment of support, Mr. Dinesh Pyakural presented the specifics of what support they are asking for the Dhaka Workshop on Benchmarking and Performance Indicators scheduled for July 2001. Both the World Bank and ADB committed to supporting the activity with WUPSA preparing the detailed proposal for ADB. Nick King of the International Water Association (IWA) Foundation also expressed support for the benchmarking project to use information generated to improve performance and citing IWA's comprehensive set of indicators that has been developed. It was proposed and agreed that Australia, the Pacific countries, WUPSA and the potential network in South East Asia will produce benchmarking data and bring them together to be available to all.

Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

SUMMARY OF FINDINGS

SUMMARY OF FINDINGS

The following is a summary of findings based on the presentations, discussions and workshop outputs during the Regional Forum, and the one-day stakeholders' workshops conducted by the domestic consultants in the eight DMCs that participated in the preparation of the country reports.

Major Issues in Urban Water Supplies

Service provision for urban water supplies in the region is dominated by the public sector. Water utilities are characterized with providing unreliable service as shown by intermittent water supply, high unaccounted for water, deteriorating water quality and service quality. These utilities are unable to expand services with a large number of urban poor lacking access to adequate water and sanitation services. The major issues/factors contributing to this condition are the following:

- **Low tariffs** leading to inadequate income sufficient to cover operating and maintenance costs and expansion to improve coverage.
- **Shortage of development funds** to increase coverage.
- **Ineffective management** and **lack of human resource capacity** traced to low salaries, lack of autonomy, and political interference.
- **Institutional deficiencies** like overlapping responsibilities in service provision and regulation.
- **Weak regulatory systems** to enforce service and performance standards.

Policy Approaches

Developing member countries and external support agencies agree that the following institutional and financial reform measures need to be taken by governments to address the issues confronting the urban water supply sector:

- Institute **reforms to give water utilities autonomy** and at the same time make them more accountable. Provide incentives for those reforms.
- **Separate** policy, regulatory, and operating **functions** among agencies of government.
- Enact **transparent policy** on cost recovery, coverage, and service levels.
- Establish **independent regulatory bodies** to enforce tariff and service policies.
- Support reforms with **public awareness and capacity building**.
- Adopt more effective measures to provide **affordable services to the poor**.
- Grant service providers with **incentives to provide good service**.
- Adopt financial reform measures that include **sound cost recovery** and **appropriate tariff policies**.
- Promote **private sector participation and finance**.
- Undertake **economic regulation as a first priority** and before private sector participation.

What a Regulator Should Do

- **Protect consumers** against monopoly power.
- **Protect service providers** by promoting commercial viability.
- **Ensure quality of service and fair price** by enforcing compliance and imposing sanctions.
- **Implement tariff policy**.
- **Enforce policy** on coverage and service levels **especially service for the poor**.

- **Ensure good governance.**
- **Promote benchmarking** of performance.
- **Monitor, adjudicate, enforce**, but not control.

Characteristics of a Regulatory Body

- **Single regulatory body** for the sector with location determined by each country's assignment of sector responsibility.
- **Independent** and **autonomous** from government and service providers.
- **Transparent** through an open process and available to explain decisions.
- **Accountable** with a clear mandate and well-defined duties and responsibilities.
- **Predictable** by adopting a stable framework in pricing.
- **Professional** to gain respect and credibility by hiring well-qualified and respected regulators and support staff.
- **Flexible** to be able to deal with major changes in the enabling environment affecting consumers and service providers.
- **Participatory** by giving opportunity to all stakeholders including consumers to participate in the regulatory processes.
- **Comprehensive** to cover all aspects of service and performance.
- There are **several kinds of regulators**:
 - (i) **environmental** for wastewater and pollution control,
 - (ii) **economic regulators** for tariffs, service levels, and performance standards,
 - (iii) **public health authorities** for water quality surveillance, and
 - (iv) **water resource councils** for water resource allocation and groundwater licensing.

Things to Consider in Establishing a Regulatory Body

- There is **no universal model** in building a regulatory framework.
- Regulation is an **ever-changing process** that is always evolving. Framework must evolve over time.
- **Contracts are not static** documents. Re-negotiation results in a concession that is more mature, more stable, and more sustainable.
- Recognize the **current level of development** of the industry – current tariffs, levels of service, and governance.
- The **most powerful regulatory tool is the availability of information** and the public disclosure of information.
- The **level of skills required** to carry out the regulatory process should never be underestimated. There is a **need for long-term capacity building** for a regulatory body.
- The **appeals mechanism** to be effective **must be speedy**, relatively inexpensive **and binding**.
- The **customers are the ultimate regulators**.
- You **can not run a US\$100 million per year business with civil servant rules** and civil servant salaries.
- **Consumers need to be represented** by a body such as the Customer Service Committee of Ofwat.
- **Regulators are for all operators**, not just for private operators.
- **Sharing of operational and regulatory experiences and information** through networking among DMC water utilities and governments, ESAs, and international and regional organizations would be helpful to governments.

Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

REVIEW OF REGULATORY FRAMEWORKS

**William Stanley
Thames Water International**

EXECUTIVE SUMMARY

The papers contained in this report were compiled to provide a perspective on the need for economic regulation in the water and sanitation sectors around the world, the progress that is being made to set up regulatory frameworks, and the principles that are guiding this work. Examples are drawn from developed and developing countries and their experience is compared with the challenges expressed by the Asian nations who are participating in this regional technical assistance (RETA) project.

The review makes the following key points:

- Economic regulation is an enabling activity. It is applicable to both public and private sector service providers but its growth in recent years has been stimulated by the growing influence of private sector management in service provision.
- Economic regulation has two primary objectives. They are, to provide a viable commercial climate for the effective management of public utility services and to protect the interests of all consumers and potential consumers in the community.
- There are fundamental 'good practice' principles that new economic regulatory frameworks should incorporate. Independence and transparency are perhaps the key criteria for effective regulation.
- There is no universal model regulatory framework to be recommended. Each nation must develop its own approach to suit its own institutional and cultural circumstances.

The case studies demonstrate that a variety of institutional approaches are possible. They illustrate the extent to which the basic principles have been applied and, in some cases, they identify the potential problems which their absence may lead to.

Water is a vital natural resource for human life. Its management and use is too precious to be left to chance or abuse.

WATER

*Send it cascading over waterfalls,
Wash in it, cool with it, drink it, heat with it,
Swim in it, wade in it, dive in it, splash in it, open your eyes in it,
Or just make cement and build with it.*

*Let it pour from the sky in tiny droplets,
Let it flow in rivers, make electricity from it,
Water flowers with it, wash cars with it, make fountains of it,
Or just leave it shimmering in a river or pool.*

*But watch, and watch carefully or it will go,
And never return.*

(Adapted from the poem 'Water' by Jonathon Kingsman)

REVIEW OF REGULATORY FRAMEWORKS

The Nature of Regulation

The English Oxford Dictionary defines regulation as "*prescribed rule*", being "*control by rules, subject to restrictions, adapt to requirements*". This implies a negative restraint which is not entirely valid in the context that we shall examine it. The application of an effective regulatory framework is an essential enabling activity in the management of water services. As such, it constitutes a vital institutional element in Third World development.

Regulatory powers have been used in most countries for many years to prescribe minimum standards for public service provisions. A good example is the use of World Health Organization (WHO) potable water quality standards for ensuring basic public health needs. Increasing wealth and aspirations have seen these safeguards spread to embrace environmental and social objectives, for example, effluent discharge controls and water availability standards.

Over recent years the role of regulation has grown to embrace economic and commercial objectives. In this role regulation has complemented and facilitated the considerable growth of private participation in the management of water and sanitation services throughout the world. Most observers are familiar with the arguments for placing public services within the private sector with the objective of providing a more focused, commercial- and customer-oriented management of those activities. In order to achieve this, many countries have had to fundamentally restructure their institutional, industrial, and financial frameworks. The introduction of commercial practices and reduction of financial risks for investors have been key issues. Economic regulation encourages and supports this process by creating market conditions suitable for forward investment and service management.

Equally, governments the world over are concerned to ensure that commercial operators do not take undue advantage of their monopoly public service position, to take too much and give too little in return. In some countries it has been possible to reduce this pressure by fragmenting and decentralizing the previous utility operations, introducing some competitive pressures, if not a proper market economy. Providing proper safeguards for water consumers is the second primary purpose of economic regulation. The regulator must have the powers to protect all members of the community, both in terms of the quality of service provided and the price to be paid for it. His ultimate measure of success is to ensure that an excellent standard of service is made available and affordable to all members of the community, on a financially self-sustaining basis.

Some countries restrict private participation to management or service contracts, particularly where unstable political or economic conditions deter more extensive private sector commitments. Regulatory control over this situation is generally achieved through short-term commercial contracts. This arrangement limits the risk to the contractor and achieves a benefit for the community concerned but the approach, by its nature, targets specific areas and rarely addresses the wider issues of effective and productive service provision.

The use of build-operate-transfer (BOT) schemes or similar arrangements can also be managed through contractual agreements but the need for a watchdog role to protect wider environmental and consumer interests becomes more apparent, particularly as the number and diversity of such schemes grows. A series of contract-based agreements can also become a time-consuming and expensive system to administer.

In the years 1990-1997 almost 100 water and sewerage contracts were placed with the private sector internationally. Fifty percent of these were concession contracts, accounting for 80% of the total capital investment in the sector. Once private enterprise management of vital services is regarded as a viable option for a country, there is a need for a strong regulation function, preferably one that is independent of direct political influence.

The transition from a centralized public service ethos to a diffused structure of operating companies under private management can be a difficult and complex process and is not achieved overnight. In several countries private management of public services has been encouraged and then controlled through individual concession contracts, without an appreciation of the benefits to be derived from a wider regulation framework. Many of the Eastern European countries are actively encouraging private investment and management of their services, but their regulatory controls are still evolving and seem barely adequate to achieve their aspirations. By contrast, Chile has evolved both its company structures and its institutions over several years and the development of the regulatory function has been a central part of that process.

The regulator must stimulate and encourage the process of development but, at the same time, he has the task of ensuring that the overall package is affordable for the community in general, and for the poorer members of that community in particular. Government subsidies may continue to play an important part in financing the services but, with long-term viability in mind, the transition to a self-financing, self-sustaining service is a key objective for many of the growing Third World economies.

Last year, when setting out its evolving role in the water sector, ADB made the following statement:

Lack of effective water policies and institutional arrangements is a pressing issue in most of ADB's developing member countries (DMCs). In the absence of reforms, private investments and increased community involvement will remain severely constrained, and potentially wasteful and destructive projects will be embarked upon. ADB's policy recognizes this problem and sets out a process for implementing water sector reforms as a prerequisite to new investments. To avail of ADB assistance, governments will need to adopt national water policies, laws, institutional reform, sector coordination mechanisms, and a national water action agenda.

This report and the Regional Forum in Manila which complements it is primarily concerned with the development of economic regulation to provide a viable commercial environment within which water and sanitation services can be provided on a self-sustaining basis and at proper standards for the population as a whole. In order to be successful in meeting this complex objective a suitable framework must take account of the particular circumstances of each individual country. There is no 'off the peg' solution to regulation and our case studies illustrate that.

The Regulator's Role

It can be argued that in a perfect competitive market economy there would be no need for a regulator. Companies would compete to provide services of the right quality and at the lowest economic price. It is generally accepted, though not universally, that this situation is not a viable one for the provision of water and sanitation services. These utilities, with their extensive distribution systems, tend to be natural monopolies. There is a gap between satisfying customers and meeting basic public health parameters. It is also necessary to have safeguards for the natural environment on which water abstraction and sewage disposal impact. Locked in to companies' networks consumers are unable to favor the better companies or influence price through choice. Thus, the economic regulator's task is to act as a surrogate for the market place.

In order to set up a new regulatory regime the first requirement is political commitment to the process. Adequate powers must be vested in the regulator and some of these may have been viewed hitherto as the province of the politicians. Establishing an independent role for the regulator will cut across existing institutional and cultural norms and create new tensions.

An independent regulator must be able to maintain an arms length relationship with both politicians and also with the service companies, consumers, and other interested groups. In so far as he is making decisions that affect these groups he needs to be able to demonstrate consistency within a prescribed and accepted framework. Although there must ultimately be a political reporting line the regulator should desirably stand aside from the civil service in terms of conditions and funding and he needs a clear legal mandate to conduct his responsibilities.

In England and Wales, the regulator is an individual appointed for several years to give continuity and he is supported by a team of professional specialists. In some countries a commission is appointed to oversee the regulator and his team. In such circumstances great care must be given to its terms of reference and to the individual affiliations of the commissioners. Decisions based on partisan lines would soon undermine the integrity of the regulator. Economic regulators cannot be sheltered from political processes but they must be given a realistic platform in order to achieve their objectives.

Klaus Tilmes of the World Bank made the following perceptive statement at a conference in London in 1996.

In recent years, resistance to the creation of independent agencies has given way to a greater willingness to experiment and innovate. Politicians have recognized the link between competent regulatory decision-making and the establishment of a more favorable environment for private investment. They are also seeing the benefits of having someone else take responsibility for frequently unpopular decisions.

Duties and Powers

The following duties and powers are required in a regulated water and sanitation sector where an economic regulator, in consultation with the quality regulators (public health, environmental protection, etc.) and other key stakeholders, is charged with ensuring viable commercial conditions for investors and operators and with fully safeguarding consumers' interests.

Meet government aspirations for the services by:

- providing a viable commercial environment for the sector
- safeguarding the interests of all consumers and prospective consumers

For this purpose he can specify, monitor, and enforce:

- minimum standards of public health and environmental controls
- minimum standards of customer service (water availability, pressure, etc.)
- service performance targets
- tariff schemes and levels of consumer charges
- asset condition and investment levels

and he can:

- audit companies' performance and gather information
- monitor customer satisfaction
- arbitrate on disputes
- advise government on sectoral issues

Regulation needs to be particularly attentive to the needs of domestic consumers. Private companies are generally more powerful than consumer bodies and the regulator often has to take positive steps in order to redress this balance, particularly in societies where extremes of wealth distribution lead to important issues of affordability and access to services. Denmark explicitly builds consumer consultation into the regulatory process and all countries should build enforceable consumer safeguards into their regulatory powers.

Criteria for Success

At a presentation to the 1998 Annual Meeting of ADB in Geneva the British consultant, NERA, identified six characteristics (they called them governance criteria) required for a successful regulatory regime. They were:

- *Clarity of role:* Regulators have a particularly sensitive position sitting between the traditional powerful influencing role of the politicians and their administrators and the strong vested interests of the operating companies and their customers. The regulator is a new player in the political scene and is regarded by many as non-democratic. It is essential in the interest of all parties that there is a clear statement of the regulator's functions and his objectives in carrying out those functions.
- *Autonomy:* The regulator should be seen as a professional who is able to stand aside from both political and commercial intervention. The norms of the local culture and ways of doing business may erode this in practice. Potential overseas investors will scrutinize this aspect closely because of the regulator's influence on risks inherent in the local economy.
- *Participation:* This is present when all relevant parties contribute effectively to the regulatory process, improving the quality of regulatory decisions and increasing the likelihood of the regulator receiving both support and co-operation from firms, consumers, and others.
- *Transparency:* Regulators should maintain an open operation, publishing regular reports on their activities, and explaining reasons for decisions they have made. This should reduce the likelihood of unfairness or incompetence and it is most important that fairness should be seen to prevail. Transparency of information and process is a fundamental justification for moving regulation away from the political arena.
- *Accountability:* It is essential that regulators' decisions, which are thought to be unreasonable, can be challenged in an effective way. There should be an ultimate right of appeal, preferably into the legal system, rather than the political one. Equally, the regime must avoid the possibility of continual litigation to a degree which renders regulation ineffective.
- *Predictability:* Companies need to be confident that the 'rules of the game' will not suddenly change, either through a change in the overall legal and regulatory framework, or through a change in the way that regulators behave within this framework. Appointing regulators for a fixed term, not at the whim of the current political party, the avoidance of ad hoc decision making and being able to maintain a consistent approach, all build credibility into the regulatory process and breed confidence in its decision making.

In order to carry out his duties effectively and adhere to these criteria the regulator needs the status to stand on his own feet, set his own agenda, and resist undue influence from any partisan group or lobby (known as 'regulatory capture'). The regulatory duties and powers should be clearly specified in law and the following aspects should be given detailed attention:

- The regulator should be a strong, non-partisan person widely recognised as trustworthy. He should be appointed for a fixed period and his report to government should be at the highest level possible. Direct political influence should be minimal.
- The regulator should be supported by a well-paid and respected professional unit, not necessarily large; the use of reputable consultants for specific jobs would be beneficial.
- The regulatory unit should have management autonomy and be financed independently of government, possibly by a charge on operating companies.

- The regulator should publish annual reports and ensure that all regulatory decisions are fully documented and open.
- The regulator should have close and explicit working arrangements with the quality regulators, with water consumers, and with the service operators.
- The regulator should have extensive information gathering powers.
- Appeals against the regulator's decisions should be dealt with by judicial process rather than political judgement.

The Regulatory Package

The job of the economic regulator is both a complex and a sensitive one. Three key means by which he can achieve his objectives are setting standards and prices, measuring performance, and enforcement and sanctions.

Setting standards and prices: The regulatory package can take many forms but essentially it is a contractual obligation on the company which sets out minimum standards for the services and performance targets to be achieved, for example, for service growth and quality improvements. This specification should be based on government aspirations and perceived customer needs. Inevitably, there will be a process of prioritization depending on the pace of change that is considered to be viable. The condition of long life fixed assets employed in the water and sanitation services should also be specified in an asset management plan, with future investment plans designed to prevent their gradual deterioration through under investment.

The physical requirement will be balanced by a financial agreement, which will include assumptions about costs and the levels of investment required and will specify appropriate tariff levels. The income should be designed to recover all costs and place the service on a financially self-sustaining basis. Commonly, tariffs are calculated to give a rate of return according to the value of the assets employed in providing the services. This method provides a reliable income for the company, giving comfort to investors, but may distort the levels of capital investment according to the regulator's assumptions about rates of return and thus does not necessarily encourage greater productivity.

A fixed-price cap system is sometimes used whereby companies have the incentive to make higher levels of profit through innovation and by maximizing their efficiency. An important benefit for customers is that the benefits of greater productivity can be carried forward to give lower water charges at subsequent tariff reviews. The danger is that if the price is set too high, the level of profits may be unacceptable to the community in the short term. Conversely, if the price is set too low, the level and quality of services may fall as the utility struggles to earn a reasonable rate of return; investors are then placed at risk, and the cost of capital may increase accordingly. To be successful this method requires the availability of good information and knowledge about the operation of the system and sufficient safeguards to ensure that companies do not take short cuts in pursuit of profits.

Whichever approach is adopted the regulator has to make a judgement based on the best information and knowledge available to him. At the same time as making the economic assessment he must also consider the issue of affordability. If the community cannot afford the service then either government subsidy is required or a more modest package of service improvements will be necessary. It is an important part of an effective regulatory process that issues of this nature are brought into the open by the regulator, with the community able to contribute to the final decision.

In England and Wales, a package of this type is adopted with periodic reviews at five-year intervals. Many safeguards, both for the regulator and for the companies, are built into the system. The recent five-year tariff review identified the cost of a number of desirable environmental improvements and customers were invited to give their opinions on the tariff

implications. A debate on the affordability of environmental improvements was brought into the open. The issue was controversial, but the regulator was seen to take his decision with all the facts in the public domain.

In situations where price controls are based primarily on individual contractual agreements then many of the aspects outlined above will need to be covered by those specific contracts. In many cases the level of consumer charges will be set through a process of competitive tendering.

Information gathering: The issue of monitoring is fundamental to the regulator's role. By whatever means the standards of service / price package is established it is essential for the regulator to be able to measure company performance in order to ensure that commitments are met and that the interests of customers are protected. Over a period of time the accumulated information also provides the regulator with a better knowledge of the market place and a more informed basis for subsequent reviews.

In order to monitor effectively regulators require extensive information gathering powers. In order to review the regulatory package this needs to include returns on service performance, progress against targets, asset condition, and customer issues. It is also essential that the regulator should be able to audit any aspect of the company's operations that he sees fit. The use of expert consultants for these purposes can add credibility to the process. If companies are able to avoid giving accurate and timely information, thus leading to deficiencies about the knowledge of the systems, the quality of regulation will inevitably be reduced.

Enforcement and sanctions: The third essential tool for the regulator is the power to take sanctions against a poorly performing company. This will normally take the form of a financial penalty but it could extend to removing part of a company's business or, ultimately, to the withdrawal of his license or contract. In this event the regulator needs default powers to place operational responsibility for these vital services elsewhere, at least in the short term.

The regulator should also exercise powers of arbitration and settle disputes between the company and its customers. This is an essential aspect of the regulator's wider responsibility to protect the interests of consumers.

Since 'absolute power corrupts' there has to be an ultimate appeal for both companies and customers beyond the influence of the regulator. Technical issues may require ministerial direction, but it is strongly recommended that matters affecting human rights should be routed to the country's judiciary and not into the political arena.

Institutional Factors

Regulatory influence exists in some form in all economies but very often it is not readily identifiable as a separate entity. The different roles of 'government' can become confused and their identification and clarification is a prerequisite of institutional reform. In the typical public sector economy government bodies often carry out all of the following activities in relation to the provision of public utility services:

- set policy, strategy, goals based mainly on political and social motivation
- set minimum standards, for quality, health and safety, etc.
- set targets, in five-year plans, etc.
- own the service infrastructure
- undertake investment by setting priorities
- manage the services day to day
- set charges, often driven by political and social objectives
- audit their own activities

- arbitrate where there are problems
- look after consumers' interests

The involvement of different arms of the public sector in the provision of water and sanitation services can lead to confusion and compromise and, very often, a loss of accountability. In some situations it can lead on to favor and corruption. Many of the activities listed above are clearly the province of political decision-making but others, such as arbitration, could benefit from an independent position. The management of service operations benefits from more focused commercial skills.

In evaluating its institutional arrangements each country needs to consider carefully where specific responsibilities lie and whether this arrangement gives the most effective use of talents and resources.

Few would argue that 'the public sector', with its ultimate accountability to the population, should determine overall aspiration and policies, and through technical advisory bodies (quality regulators) that it should determine basic health and safety standards. Most would agree that it should retain ownership of the nation's basic infrastructure to ensure control in times of crisis. It can also be argued that social policy should specify basic requirements and safeguards for the poorer members of the community. These roles relate to setting overall priorities and retaining ultimate control.

Beyond this point, the traditional 'hands on' role of government in the provision of water and sanitation services is increasingly being challenged. Is the government with its resource limitations and many competing financial priorities best placed to invest in the infrastructure? Is the public sector best equipped with the managerial and commercial skills required for managing services on the ground? Should the 'government' be arbitrating on its own activities?

Increasingly, service management on the one hand and regulatory functions on the other are being stripped away from their traditional public sector positions. Economic regulation is being established to take on the roles of setting service standards and economic tariffs, performance audit, consumer protection, and arbitration. Long-term licenses and contracts are important to encourage forward investment and foster confidence in the sector. A measure of independence from political influence is required to be impartial and objective in this role and this aspect needs to be addressed explicitly when establishing new institutional structures.

The detailed regulatory framework must be designed for the political, social, commercial and industrial circumstances in which it is to operate. No reform process is likely to succeed if it ignores the wider institutional picture. Regulation can be driven at the national level, as by Ofwat in England and Wales, or it may be conducted at a more regional level in a federal structure such as exists in Australia. Alternatively, as is frequently the case, it may be undertaken by the local municipality, possibly based on a standard contractual approach. Whichever method is adopted, the monopolistic nature of water and sanitation services acts against consumer interests. It is important that the regulator has explicit duties and powers to manage this situation. In doing so it is advantageous for the regulator to be responsible for several companies, allowing him to derive the benefits of comparative competition.

The impact of utility ownership, industrial structure, and political risk are discussed below:

Public or Private Management.

Typically, public services such as water and sanitation have developed within the umbrella of government. In some countries municipal ownership and management of the services have been very successful; in many, it has failed to deliver universal services of sufficient quality. In response to this the participation of private companies in water sector management is increasingly being sought, in both developed and developing countries.

An economy based exclusively on the public management of its services still requires a measure of regulation but that role is often diffused within a number of government departments and bodies. The regulatory activity is generally politically motivated and more successful at setting standards than at implementing or enforcing them. Poor service delivery is often excused and there is a general presumption that the state is doing the best it can in the light of other priorities and the resources available to it. The ultimate solution for poor services is seen to be a change in political control.

Once private sector participation is introduced the need to regulate becomes more explicit. There are two main reasons for this. Firstly, there is now a general presumption that the management's priorities are concerned primarily with profit and the interests of the water consumer need explicit safeguards. Secondly, the state has to provide conditions suitable for commercial investment and risk taking. A securely regulated tariff system reflecting the costs of service provision is likely to be a key aspect of this.

In a liberated market economy the monopolistic nature of water and sanitation provision requires that water consumers receive specific regulatory attention. The regulator should balance consumer charges with service targets and standards. He should regularly monitor companies' performance against them and he should have powers to enforce compliance and ultimately to remove licenses. Consistent with this approach, the regulator should have some discretion to modify companies' commitments or price constraints arising, for example, from a fundamental change of circumstances impacting on a long-term license or concession contract. As long as this scope for discretion is specified in the legal framework and is seen to be open and fair it can be viewed as facilitating the conditions of a fully competitive market place.

Industrial Structure

Public sector service provision, particularly in urban areas, has typically been based on large service areas (often municipality or region based) including all management functions from resource development to metering. Such organizations constitute absolute monopolies which, because they are within the public sector, are not necessarily regarded as undesirable in any sense for the consumers. If private management is introduced into this structure it is necessary for regulation to be very firm in the interests of those customers.

The involvement of the private sector in such organizations is often restricted to service or management contracts. They specify standards and fees with little room for maneuver. The benefits of using private sector expertise on this basis are limited and once some experience is gained there will be pressure to develop into build-own-operate-transfer (BOOT) contracts or full concessions. There is a danger in these situations that tight, inflexible regulation can become too prescriptive as well as restrictive. A regulatory framework that permits only a steady return for a standard job may be self-defeating in the longer term. It has the disadvantage of rendering the sector less able to react to changing circumstances and may discourage innovation.

Large municipality-based utility companies can often lead to a one-to-one situation between the regulator (which may be a unit within the municipality) and the operating company. This is not a desirable situation since the regulating activity can become a continual negotiation process in which the company probably has the stronger position in terms of knowledge of the system, for example. Regulatory capture also becomes a significant risk. The possibility of strengthening the standing and wider community influence of the regulator by combining his office with other public service regulators (e.g. for energy or telecommunications) might be helpful in such a situation.

If major service concessions are under consideration it is advisable to break up the structure, either by separating resource and supply from distribution or by creating smaller company service areas. Some countries have fragmented their former state utilities in order

to provide new companies more suitable for private sector operations and more effective regulation. Where a diverse company structure exists the regulator is able to give the companies greater freedom to meet their obligations and then to measure and compare their performance. He can use this information to identify the good and poor performers and set more realistic service targets. This approach is equally effective where some of the companies remain operating within the public sector.

Political Risk

If an economy is thought to be politically unstable, or one where politicians or major customers are able to exert undue influence on a private service company, then the role of the regulator is vital in providing a commercial climate in which the company can have confidence. Once again, tightly prescribed service contracts are recommended for this situation. Tariffs should guarantee rates of return that reflect the risks involved. The regulator will need to be strong and seen to be independent of the political machine. His powers of discretion should be kept to a minimum with regulatory decisions based on a procedural approach. Evolution to a more flexible regulatory arrangement should be a longer-term aim associated with wider political and institutional reforms.

A prosperous and stable market economy will be less reliant on the regulator to create the conditions for investment and commercial management. The regulator will be able to concentrate on maximizing productivity in the industry through the use of benchmark standards and comparative competition. He will also be in a stronger position to protect the interests of consumers by pressing for high service standards at minimum economic cost. The skills of the regulator in terms of balancing tariffs with service performance, promoting innovation, and providing customer protection within a commercially viable industry can be optimized.

A Model Framework?

The regulatory framework is only one aspect of the overall institutional and legal framework within any particular country. It is not possible to prescribe a suitable regulatory regime without close regard to the wider administrative and commercial arrangements that already exist or are being put in place. The most appropriate arrangements for a highly centralized state will be different from those where power and responsibilities are more diffused, and possibly where the market economy is more developed. Countries carrying greater political risk and less stability should benefit from a tighter, narrower regulatory regime, strongly supported by legal process, and with less room for discretion and maneuver. Of equal importance is the propensity of a given country for coping with change, for many countries in the Asian region, social, political and economic conditions are dynamic and developing.

In smaller countries, or where appropriate expertise is limited, it may be sensible to set up one regulatory body to oversee all public utility services (including energy, telecommunications, etc.). This can provide a unit of stronger standing in the community and better equipped to deal with the range of situations involved. Another option is to establish umbrella regulatory bodies providing research, training, and advisory services to the local regulators and perhaps arbitration powers over local disputes. This could be helpful in federal states or even in regions embracing a number of smaller countries.

The establishment of multi-sector regulators may also be suitable where the industrial structure is dominated by international combines and multi-service companies, where issues of cross subsidization between the services and other commercial interests would be relevant.

The following statement quoted from a World Bank publication (1998) illustrates the importance of introducing a regulatory framework in empathy with the economic and political

character of the country and also the pace of change taking place within it. The imposition of an ideal static model for economic regulation, whether for water, sanitation or any other service is not realistic.

“In order to attract significant private investment into provision of infrastructure, a country must offer a credible regulatory environment. In part this depends on the general legal and judicial systems affecting business: laws governing property, contracts, security interests, etc., and the reliability of judicial procedures for their enforcement. But it also depends on specific regulatory arrangements for sectors that have elements of natural monopoly. Because development of regulatory skills and procedures takes time, and because track-record is the most convincing way of demonstrating credibility, it is wise to initiate the effort early, when infrastructure agencies are first delinked from direct government administration, rather than to wait until bids are to be solicited from potential investors/concessionaires.

The regulatory function must be protected from changing political winds and generate confidence that issues will be handled strictly and objectively on their merits. How this is best done depends on a country's traditions and political/administrative structure. Most of the developing countries are following the Anglo-Saxon example of establishing regulatory commissions outside line ministries of government, with debate now tending to favor multi-sectoral bodies, at least initially. Some of the transition economies, with their young democratic institutions and traditions, have considered it safer to place the responsibility with the relevant sectoral ministry, but experience indicates real dangers of favoritism and disregard of rules/contracts as a result so that it is likely to be appropriate at best as an interim arrangement. In the Commonwealth of Independent States (CIS) countries there are some indications that the Anti-Monopoly or Economy Ministries may prove the best incubators of an independent regulatory function, which may then, after a few years of experience, be formally separated.

Initially, when the main need is to build regulatory skills and credibility, it will usually be desirable to tie down the key parameters for the first several years for an infrastructure provider with monopolistic powers as clearly as possible in a standard contract: prices and price adjustment provisions, service obligations, and arrangements. It is normally wise also to identify in the contract the specific areas in which exogenous change of conditions would necessitate contract adjustment. Specification of administrative procedures... and provision for appeal to the courts ...are other features that can enhance the confidence of private investors in countries where private activity in infrastructure has long been absent. Once capacity and confidence have grown, the regulatory body can use greater discretion and introduce more refined regulatory mechanisms. Very important for that stage will be the interim accumulation, by the regulator and the provider, of reliable information about costs, prices and performance quality in accordance with the accounting system (and auditing arrangements) specified by the regulator.”

International Experience

In 1997 the Centre for Regulated Industry (CRI), based in the UK, identified just 13 countries around the world that had a regulatory system for private utilities (not necessarily including water and sanitation services) in operation. Six of these countries were located in Western Europe and the Philippines was the sole representative in the Asian region. Five other countries, including Malaysia and Thailand, were recorded as in the process of setting up such systems associated with increased private participation and liberalization. Finally, 13 countries were identified as having their regulatory functions integrated with the ownership of public-owned utilities. They included the People's Republic of China, Japan, Korea, and Pakistan, and also six countries in Eastern Europe.

Using more recently published information from the CRI (and others) I have established that of 36 countries for whom comparable data could be found 20 have their water and wastewater services provided by public-owned and managed utilities. Only three countries, namely England and Wales, Chile, and Argentina have their services managed predominantly from the private sector. Of the remainder, a number are moving towards that objective.

Using the tariff setting process as a key indicator of regulation, four of these countries have an independent national regulator responsible for the process. They are England and Wales, Chile, Peru, and the United Arab Emirates. At least two others, Brazil and Malaysia, are reputedly moving towards a similar system. Nine other countries (from Eastern Europe and Africa) control tariff setting directly from central Government but more as an ownership/management function than a regulatory one. The majority of countries set their tariffs at the local municipality level, generally from within the political process. However, in many of these countries the national governments prescribe tight rules and procedures, examples include Poland and South Africa.

Finally, I examined the main principle used for determining tariff levels. In only 12 countries are the full economic costs of the service, including a return on capital employed, explicitly used. Sixteen further countries are reputedly cost-based; the remaining eight countries do not appear to use costs of service provision as their main criteria for setting tariffs. There are problems in obtaining comparable and reliable data in these areas. Nevertheless, it is clear that even where cost-based calculations are adopted, the final decisions are generally taken according to the political priorities of the country concerned. This includes strong central controls as instanced by the former socialist republics of Eastern Europe and a number of the African republics, and local municipal decision-making, common in Europe.

The pressure for more explicit and transparent regulatory systems in the water and wastewater sector is undoubtedly linked to the growing involvement of private companies and the need to attract private investment. Between 1984 and 1990, developing countries awarded contracts for only eight water and sewerage projects to private companies. Since 1990 private participation in the water sector in developing countries has increased more than tenfold, though it is still small relative to private participation in other infrastructure sectors, particularly energy. Nevertheless, it is estimated that since 1988 about 270 million people have seen the management of their water and wastewater services taken into some form of private management. About 5% of the world's population (some 335 million) are currently served by the private sector and forecasts suggest that this could rise to around 35% by 2015. That is not far away!

There is little doubt that this pressure will drive regulatory reform. The case studies that follow in this report illustrate that several countries are currently in a state of transition as they strive to cope with the issues involved.

Case Studies

We have undertaken 10 country case studies as part of this appraisal. The chosen countries represent a considerable range in terms of wealth and existing quality of service provision, social and economic philosophy, and political approach. However, each country faces common problems in relation to the need to fund and manage effective water and sanitation services while improving and protecting environmental standards and customer interests. The range of approaches adopted in these countries provide an interesting and revealing picture and illustrate the importance of existing social and institutional factors in determining their chosen approach. For ease of reference the key aspects identified in each study are tabulated in the Summary Analysis of Case Studies.

At one extreme are England and Wales and Chile where strong national regulators take direct responsibility for establishing and enforcing service standards and tariff levels. They are

both responsible for a relatively small number of regional based companies. In England these are fully privatized companies, operating under 25 year licenses. In Chile a transition from corporatized utilities to private concession companies is in progress.

These countries provide an example of a very objective and pragmatic approach towards public service regulation based on an 'independent' national regulatory body. The benefits associated with consistency and comparative competition derived from this approach have much to commend them. These benefits are reinforced by the fact that the regulators conduct their decision making in the open, regularly publishing accounts of their findings, and maintaining close contacts with consumer opinions. The regulators are also independent of local politics and are able to keep at arms length from operating companies, while having strong powers of information collection and control over them. The problem they can face is remoteness from local circumstances and issues of scale in overseeing large and very active service sectors.

In countries where there is a tradition of strong provincial or regional government, political and administrative powers at this level carry considerable power, generally being carried out within a national policy framework. The United States of America, Australia, and Italy each fall into this category. The tradition of provincial government extends, not surprisingly, into their regulatory frameworks. In each of these countries there is a framework of national guidance but the manner and diligence with which they are applied can vary considerably from region to region. In Italy, the attempt to be over prescriptive at the center has encountered widespread resistance that is hindering regulatory reform.

There is no reason why the 'regional' approach should not work as effectively as the 'national' one, given the scale involved in the United States it is surely more practicable. There are two main issues. Firstly, there is likely to be less consistency within the country concerned. If the objective is to attract investment from international firms, this can lead to confusion and reduce confidence in the sector framework; there are certainly problems of this type in Italy at the present time.

Secondly, different regimes across the country can lead to information blocks, a lack of awareness in one area of what is being achieved elsewhere, a different view taken on issues such as productivity and innovation. Australia provides an example, where adjacent operating companies may be subject to quite different regulatory regimes. In order to obviate such problems the option of a national 'regulator', a professional not a political body, which collects and disseminates information and interprets national guidelines is worth consideration.

Indonesia is a country that needs to consider this approach closely. The country is in the process of unwinding a cumbersome bureaucracy based on national control and decentralizing its regulatory and management functions to a more regional based structure. In addition to the above considerations Indonesia will have to consider the availability of skills, expertise and local capacity in order to undertake these responsibilities. A 'regulator of regulators' who could provide training and advice as part of its remit should be considered.

The majority of the countries that we examined place their regulatory controls with the local municipalities. In many cases this reflects a situation where ownership and administration of the water and sanitation services have grown up at the local level and the local authorities naturally take more explicit regulatory powers as utility company structures develop. The regulatory role is derived, effectively, from the ownership of the service infrastructure and manifests itself in the management of local concession agreements. The progression from owner and manager to owner and regulator can lead to problems. It is very difficult for municipalities to take their regulatory role out of the political arena and thus be sufficiently objective and commercial in their judgements. Also, very often, the municipalities only have responsibility for one or two operating companies. Thus, they are denied the benefits that undoubtedly arise from comparing company performance and using the intelligence that arises from this to encourage greater productivity and higher standards. As

discussed in the case of Indonesia, the support of a national regulatory standards and training body should be considered to compensate for this.

In some countries, such as Poland and South Africa strong guidelines, almost rules, are being set down to govern the nature of the regulation process. They should allow for some consistency of approach across their respective authorities although it is too early to say whether this will be effective in providing a more stable commercial environment for potential private operators. In South Africa a move to the national regulator option is under discussion as a possible new way forward.

In Germany and Bulgaria the municipalities are the responsible regulatory bodies, consistent with their wider service provision responsibilities. National laws provide a framework of law and guidance within which they operate in the interests of their electors. This includes attracting private management to run their community services and ensuring appropriate commercial and political conditions for this to happen. Local politics and regulation are very closely related in this framework. Although excellent concessions agreements can be put together it seems doubtful that there can be sufficient objectivity and independence in the process to achieve the full benefits of private management on a countrywide basis. The German approach is still very much geared to public sector controls rather than private sector initiatives.

The case study reports that follow have, as far as possible, been prepared to the same format and to comparable levels of detail. Each one contains a summary of the key points and a broad structure diagram illustrating the main organizational links in the regulatory framework. The objective has been to identify the broad regulatory features and issues and to provide relatively easy access to them.

In all cases, Thames Water International country managers have provided the core of the information and this has been supplemented from a variety of other sources and personal opinions. It must be stressed that in many cases it has not been easy to ascertain a clear picture and we are aware that theory and practice do not always concur. Very often this reflects a confusion as to responsibilities, which undoubtedly exists in some countries. This, in part, is because many countries are actively reshaping their institutional arrangements and are in a transitional phase as we speak.

Summary Analysis of Case Studies

COUNTRY	POPULATION / GDP/capita (US\$)	SERVICES		UTILITIES		
		Quality/ Coverage	Problems/ Issues	Ownership	Structure	Issues
Australia	19 million/ \$20,100	good/ high	water resource management/ efficiency & sustainability	Public (2 private companies)	384 utilities/ 2 serve 20% of population	moves to privatization
Bulgaria	8 million/ \$1,400	poor/ water 89% sewerage low	leakage 60% & sanitation. pollution/ investment	State/ municipality	13 State Companies, 19 municipal, 16 co-owned	moves to private concessions
Chile	14 million/ \$4,700	generally good/ water 99% sew'rage 91%	sewage treatment cover 17%	State and Private companies (17%)	53 regional based companies	private concessions proceeding
England & Wales	52 million/ \$22,600	good/ full services	environmental improvements	Private companies PLCs	10 regional water & sew'rage companies/ 18 water only	mergers/ diversification
Germany	82 million/ \$25,400	good/ full services	environmental improvements	Mixed public, private & joint owned	Over 15,000 utilities	high costs/ growing private concessions
Indonesia	210 million/ \$600	poor/ low coverage	all services/ water resources/ pollution	Public/ few private concessions	307 district water companies	insolvent/ massive investment needs, etc.
Italy	58 million/ \$19,700	problems/ good coverage	water quality/ sewage treatment/ environmental	Municipal/ some JVs & private contracts	over 8,000 municipal utilities	move to private concessions/ investment
Poland	40 million/ \$4,000	serious problems/ reasonable coverage	water quality sewage trmt. environment & pollution	Municipal	300 utilities (mostly commer- cial code companies)	investment to meet environment problems
South Africa	43 million/ \$3,200	problems/ poor coverage & unequal distribution	water resource management/ new services conservation	Municipal	local authority departments	investment needs/reforms private management
United States of America	281 million/ \$30,600	good/ high	high cost/ investment needs	Municipal (90%) & private companies	55,000 units 5% serve 75% of population	productivity/ growth of private sector

GDP = gross domestic product, PLCs = public limited companies, JVs = joint ventures

Summary Analysis of Case Studies

COUNTRY	REGULATION FRAMEWORK					LEGISLATION
	Level	Nature	Tariff Basis	Customer Protection	Issues	
Australia	States (within national framework)	Varies / independent regulators & political arena	Full cost recovery	Cheap block tariffs/ no cut offs/ ombudsman	Political influence	National Competition Policy - 1995
Bulgaria	Municipalities nat'l framework (control body proposed)	Ownership/ concessions	Full costs (1997 legislation)	social security /concessions have some obligations	In state of transition, a lack of clarity	Water Law, Ordinance 9.
Chile	National regulator (SISS)	Comprehensive through concessions	Full cost recovery	Targeted subsidies/ installments	Process becoming established	Sanitation Reforms 1988-1989
England & Wales	National regulator (Ofwat)	Comprehensive through licenses	Full cost recovery (price cap)	Consultation & complaints procedures/ no cut offs	Cost of environmental improvements	Water Acts 1989 & 1991
Germany	Municipalities (State & Federal Guidelines)	Political arena	Cost recovery	Limited	Environmental costs/ political influence	Water Management Act 1957, etc.
Indonesia	Unclear/ political decisions	Proposed* independent sector regulators	Political decisions	Proposed* community involvement procedures	Proposals to implement* political will/ regulat'ry skills	Current reforming legislation*
Italy	ATOs catchments - groups of municipalities	Varies/ independent regulators & political arena	Full cost recovery/ political	Little	Slow pace of reforms/ vested interests	Galli Law 1994
Poland	Municipalities (national standards)	Ownership/ political	Political (new criteria for cost recovery)	National standards may help	National standards driving reform	Reforming Act being drafted
South Africa	Municipalities (independent regulation under review)	Ownership/ concessions	Cover cost/ political	Very aware/ lifeline tariffs & cross-subsidies	Local skills & capacity	Nat'l Services & Nat'l Water Acts of 1997 & 1998
United States of America	State Commissions Municipal -	Judicial Review/ - ownership	Full cost recovery (rate of return)	Judicial via rate payer advocate	Established process/ cost plus culture	Safe Drinking Water Act & state laws

SISS = Superintendence of Sanitary Services, Ofwat = Office of Water Services, ATOs = water catchment areas

Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

CASE STUDIES

**South Australia
Bulgaria
Chile
England and Wales
Germany
Indonesia
Italy
Poland
South Africa
USA (New Jersey)**

Australia Case Study – Key Points

Australia has a population of 19 million people in eight states, with 80% of them living in urban communities. It is one of the driest countries on earth, about one third of its land area being desert, and it has the highest per capita water storage in the world.

The management of scarce water resources is a major concern and increasing demands and growing awareness of environmental problems led to a major policy reappraisal in 1995. This resulted in a set of measures, contained in the National Competition Policy, designed to achieve more efficient and sustainable water use.

The measures included guidelines on institutional reform; the costing and pricing of water services to reflect their economic value; water resource management; and conservation measures. They also covered aspects such as research and public education.

The responsibility for managing water services rests with each state and they have each developed their own approaches and institutional arrangements. This paper concentrates on the regulation framework in South Australia.

South Australia has set up a corporatized government enterprise, South Australia Water Corporation (SA Water), to own and manage all the water and sanitation services. SA Water has outsourced some of the services to the private sector, notably the provision of water and wastewater services to the City of Adelaide, which are carried out by United Water on a 15-year contract.

South Australia has no independent economic regulatory body for water. The state government directly controls the tariff setting process. The decision is taken at cabinet level on the basis of a submission by SA Water. **Despite the national guidelines, political considerations, as well as commercial ones, influence tariff determinations.**

Since there are no other service providers the absence of comparative competition makes commercial judgements on pricing harder to take. SA Water negotiates flat fees with United Water, which provides them with some market opportunity to improve productivity in the services. **Although they can take grievances to an Ombudsman, consumers must rely largely on the politicians to look after their interests.**

Environmental and water quality regulation is based mainly on self monitoring, carried out by SA Water for the responsible agencies. There are concerns that this process is not sufficiently rigorous in practice.

Background

Australia has a large landmass and a relatively small but growing population approaching 19 million people. There are eight states and territories which, within the national legislative framework, take responsibility for the government of their own communities. The country is highly urbanized with over 80% of the population living in the major cities. It is a wealthy country with a GDP per head of US\$20,050.

Australia is environmentally diverse and is one of the driest countries on earth, about one third of its land area is desert. Population development has tended to follow the availability of water resources. Water is a major concern being a scarce resource for which there is a continually rising demand. Issues of water conservation and source protection have consequently become a focus of attention in recent years.

This situation has been exacerbated in the past by a lack of clear definition of the roles and responsibilities of a number of the agencies involved in the industry and by inefficient service delivery. Environmental controls and regulation tended to be ineffective and water utilities, which are largely in public ownership, received significant subsidies and failed to recover their costs equably or adequately, which led to a false impression of the value of water as a resource. During the last decade extensive water reforms have begun to address these issues.

The water systems in Australia are state government owned and operated and the regulatory bodies are a division of the same state governments. The provision of water and wastewater services is managed on a state and territory basis. Organizational structures vary but the waste and sanitation services are generally managed in multi-functional units. In some areas electricity is included within the same utility. Although the management arrangements differ from state to state, there is some consistency in the regulatory regimes, and to demonstrate this, the regulation framework in South Australia will be examined in more detail.

Water and Sanitation Sector

The number of utilities involved in the supply of water for residential and industrial purposes is large. There are about 384 utilities operating throughout Australia. Of that number only two are private sector utilities, the remainder are either state or local government bodies and a small proportion are corporatized. The metropolitan utilities supply the largest proportion of the population. In New South Wales there are 124 urban utilities and 4 metropolitan utilities. The two largest, Sydney Water Corporation and Hunter Water Corporation, supply 3.9 million people. Of the local government utilities, 80% supply populations greater than 20,000, 50% supply to populations of less than 5,000 and 15% supply to populations of less than 1,000.

Service coverage in Australia is very high. In the urban areas water and wastewater services are effectively universal. Water resource management and the availability of supplies is a critical issue for the industry. In much of inland Australia groundwater is the only practical water source. In the Perth region groundwater constitutes about two-thirds of total water use. Australia has the highest per capita water storage of all countries in the world. The bulk of this is concentrated in a few very large reservoirs. The 10 largest reservoirs hold about 50% of national capacity.

In response to the pressing need to address the water resource and service management problems in the water and wastewater sectors a national strategic framework for water reform was agreed by the Council of Australian Governments in February 1994. This created a structured program of measures designed to achieve more efficient and sustainable water use which was formalized in the National Competition Policy (NCP) in 1995. State and territory governments have the prime responsibility for water resource management and for the implementation of the reforms. The Federal Government provides leadership and facilitates their implementation.

The reforms, to be implemented over the period to 2001, include measures in relation to water pricing, water entitlements and trading, environmental safeguards, institutional reform, public consultation, and education and research. In addition, state governments adopted the principle of competitive neutrality for their business enterprises. This was designed to ensure that government enterprises do not enjoy a competitive advantage on account of their ownership. These reforms have led to greater opportunities for private sector participation in the industry.

The following measures are of particular relevance to the economic regulation of the industry:

- Adoption of pricing regimes based on the principles of consumption-based pricing, full cost recovery, and the progressive removal of cross subsidies not consistent with efficient and effective service. Where cross subsidies continue they should be made transparent.
- Where water services are provided at less than full cost, this should be transparent and the supplier should be compensated as a community service obligation.
- Charging arrangements for urban water services should include a connection component, plus a usage charge where this is cost-effective.
- Adoption of national asset valuation methods and cost-recovery definitions.
- Future capital investment proposals can only proceed if demonstrated to be both economically viable and ecologically sustainable.
- Funds must be set aside for future asset refurbishment and upgrading of government - supplied water infrastructure.
- State governments should implement systems of water allocations or entitlements backed by separation of water property rights from land title. They should include allocations for the environment as a legitimate user of water.
- In relation to trading in water allocations or entitlements, water should be used to maximize its contribution to national income and welfare, within the social, physical, and ecological constraints of catchments.
- States should develop administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management.
- Adoption of an integrated catchment management approach to water resource management including arrangements to consult with the representatives of local government and the wider community.
- To ensure that, as far as possible, the roles of water resource management, standard setting and regulatory enforcement, and service provision are institutionally separate.
- The efficiency of water service provision should be measured and monitored at the national level to ensure that service providers achieve international best practice.
- Service delivery organizations, particularly in metropolitan areas, should have a commercial focus. Whether this is best achieved by contracting out, corporatized entities, or privatized bodies, is for each jurisdiction to determine in the light of its own circumstances.
- The agreement also contained provisions relating to public education and consultation, water and related research, and considerations of a range of water related taxation issues.
- Support for the development of the National Water Quality Management Strategy, through adoption of a package of market-based regulatory measures, including the establishment of appropriate water quality monitoring and catchment management policies and community consultation and awareness.

The National Competition Council (NCC) recently assessed progress on the implementation of the water reforms and its report identified a number of achievements:

- (i) Most jurisdictions have successfully separated utility service provision from regulatory functions and introduced a commercial focus for their utilities. Water corporations have begun returning significant dividends to government owners.

The Water Authority of Western Australia became the Water Corporation on 1 January 1996 and a Waters and Rivers Commission was established simultaneously to provide management and protective regulatory functions. At the same time an Office of Water Regulation was established to administer a licensing scheme involving a set of service quality standards for both the Water Corporation and other water service providers. In New South Wales (NSW) and the Australian Capital Territory (ACT), regulatory bodies ensure that there is independent determination of pricing for water and sewerage services for metropolitan users and rural bulk water. The determinations are made on the basis of extensive community consultation and transparent processes.

- (ii) All jurisdictions have made progress on the pricing commitments. As a consequence consumers' water and sewerage bills have generally fallen.

Metropolitan water industry experience shows that these bills reduced more than 16% from 1992-1998, made possible by a decline in operating costs of over 18%. In Victoria, small business water bills have reduced two-thirds with the replacement of the previous property value-based pricing by consumption-based pricing. Consumers are generally using less water. In Brisbane there was a 20% reduction in water use from 1995-1998 attributable to the adoption of metering and consumption-based pricing.

Progress has also been made towards the objective of achieving full cost recovery but there is still some way to go. Cross subsidies from urban to rural areas and from commercial to domestic consumers are proving difficult to eliminate. They are, however, more transparent.

- (iii) Water rights are being separated from land rights with a consequential increase in the tradability of those rights. The trade of allocations assists sustainable resource use by ensuring that the resource goes to the highest economic value use.
- (iv) The problems associated with stressed rivers and associated environmental priorities are being dealt with by establishing environmental flow requirements, strategies for reducing withdrawals from over-allocated systems, support for integrated catchment management approaches, and implementation of the National Water Quality Strategy. In all jurisdictions, particularly in NSW and Victoria, community groups are involved in the management of water resources.

The use of economic incentives has reduced domestic water use and has begun to change the culture of water consumers. To be successful in managing water resources on a sustainable basis it will be necessary to change the way in which domestic water consumers behave, for example, one third of domestic water consumption is used for gardening. Domestic use is the largest urban water use, about 80% of all water used. At the same time, attitudes to the use of recycled water for all purposes needs to change significantly.

Encouraged by the overall progress, the NCC is now considering whether the creation of a competitive or market equivalent for water can drive further efficiency. As part of the reforms the State and Commonwealth Governments adopted the principles of competitive neutrality for their business enterprises. This created a level playing field to ensure that government enterprises did not enjoy a competitive advantage due to their ownership. These reforms have led to greater opportunities for private sector participation in the industry.

Twelve major water and sewerage undertakings are currently under consideration for private sector management, although there are significantly different attitudes towards this from state to state. Victoria, which is seen as the leader in market development terms, is to

privatize the retail side of its water services by 2001. Canberra is also expected to privatize its water provision services in the medium term. Western Australia is developing a partnership basis. The State of Queensland has restricted privatization to one contract (Noosa) to date. In New South Wales, Sydney Water has been corporatized and bulk water provision is carried out by the private sector.

South Australia

The provision of water and wastewater services throughout the state of South Australia is managed by the South Australia Water Corporation (SA Water). SA Water is a corporatized entity operating as a business enterprise wholly owned by the state government. It is managed by a board of directors, which reports to the Minister for Government Enterprises. The corporation supplies a population approaching 1.5 million. Its networks serve some 442,000 urban properties and 168,000 rural ones.

In 1996, SA Water outsourced the management of the provision of water and sewerage services for the City of Adelaide to a private company, United Water, for a period of 15 years. The objectives of the contract are to achieve significant improvements in efficiency and service. SA Water also constructed some smaller treatment plants in the country areas under a BOOT contract to another private operator, Riverland Water. SA Water retains ownership of the service infrastructure and manages all other activities, including billing and collection and service provision in rural areas, with its own resources.

Regulation Framework

Within the guiding principles outlined above, including the provision of competitive services and a long-term reduction in prices, each Australian state and territory jurisdiction adopts its own approach to the regulation of water and sanitation services. SA Water is regulated in respect of pricing, discharges to the environment, public health, and abstraction.

Economic Regulation

The State Minister for Government Enterprises is responsible for SA Water; however, he does not set specific performance targets. The tariff setting process requires the board of SA Water to recommend to the minister proposed tariff increases and to provide the necessary justification for them. The minister may take advice from the Competition Commissioner; he then advises the State Cabinet who makes the final decision.

In the state of New South Wales an independent regulator, the Independent Pricing and Regulatory Tribunal (IPART), has the power to set prices for urban customers. IPART recently rejected a price increase for Sydney Water on the grounds of ineffective use of its capital funds and this led to a debate about the rate of return that is appropriate for investment of this nature. South Australia has established independent regulators to take such decisions in the electricity and gas sectors, but this approach has not been extended to include the water services.

SA Water's tariff calculation must take into account the costs of meeting its service commitments on a commercial basis; this includes the requirement to maintain an increasing dividend return to the State Government itself. Since the dividend from SA Water is a significant contributor to the state budget, it is in the financial interests of the government to approve higher tariff increases. On the other hand, the SA State Government has a responsibility to ensure that SA Water's investment decisions do not result in unreasonable burdens on consumers, and it has made commitments that the cost of services will not increase above inflation levels. In making its determination the state is also under pressure from the Commonwealth Government to maintain a competitive environment and to include productivity gains in the price of its basic services. One of the main reasons for outsourcing

Adelaide's water was the need to reduce operating costs in order to satisfy the national requirements of the competition policy.

The tariff setting process is effectively decided on the basis of what is politically acceptable. The concessionaire, United Water, is not involved in this process. Their contract is for the provision of services for a fixed and variable fee. This fee is adjusted every five years to recognize any productivity gains that have been made during that period. Charges to consumers are based on metered supplies and the tariff structure is a fixed and variable tariff, which increases on volumes consumed above a 'cheap block' of 125,000 liters per year.

Consumers do not have any direct input into the regulatory system and they cannot appeal against price increases, although they can complain to the Ombudsman who looks into issues across the whole range of government services. Customers can also approach SA Water if they are unhappy with the service provided by United Water and major consumers may be able to negotiate improved tariff arrangements. There are no specific safeguards for the poorer members of the community although, in the event of non-payment, there is a protracted process that ensures that water supply is not withdrawn unilaterally. If the bills are not paid over a long period the usual recourse is to reduce the flow to allow for basic requirements only.

The economic regulation of SA Water is thus enforced directly by the State Government, which does so by balancing a range of commercial and political considerations, including the guidance provided by the NCP. There is little opportunity to benefit from comparative performance assessments and the process is effectively a political judgement. The end results may meet the state's political agenda and also be acceptable to SA Water and the utility company, but it is less clear that they will maximize benefits for water users. Without independent scrutiny, it is unlikely that the type of public debate that is currently taking place in Sydney, on acceptable commercial rates of return for capital investment in the water sector, will arise in South Australia.

Environmental Regulation

SA Water holds a license to discharge to the environment and the Environmental Protection Authority (EPA) administers this. EPAs were established in each state in the 1970s when it was recognized there was a need to separate the roles of regulation and operation in respect to discharge to the environment. The EPA is a corporatized identity with a board that operates independently of the state government, although, the minister has the final say as to whether prosecutions proceed. The EPA is responsible for all discharges to the environment including water, air, and land throughout the state of South Australia.

The EPA sets discharge limits for the wastewater treatment plants and it also monitors other discharges to land and the air including noise and odor. SA Water is required to enter into a license agreement with the EPA who can apply penalties if license conditions are breached. The EPA has its own analysis department but it relies in the main on the testing procedures of SA Water to monitor the discharges from the wastewater treatment plants.

The EPA's main success has been in identifying irregular discharges to the environment and prosecuting the offenders. It has been less successful in reducing the background level of environmental pollution and ensuring that industrial, municipal, and commercial enterprises improve their long-term practices. Although the EPA has powers to apply penalties to SA Water it seems to be unwilling to apply them in practice. For example, SA Water entered into an agreement with the EPA to upgrade its wastewater treatment plants to meet limits for nitrogen and phosphorous discharge. The upgrades were to be completed by 2001 but SA Water has successfully negotiated to extend this date.

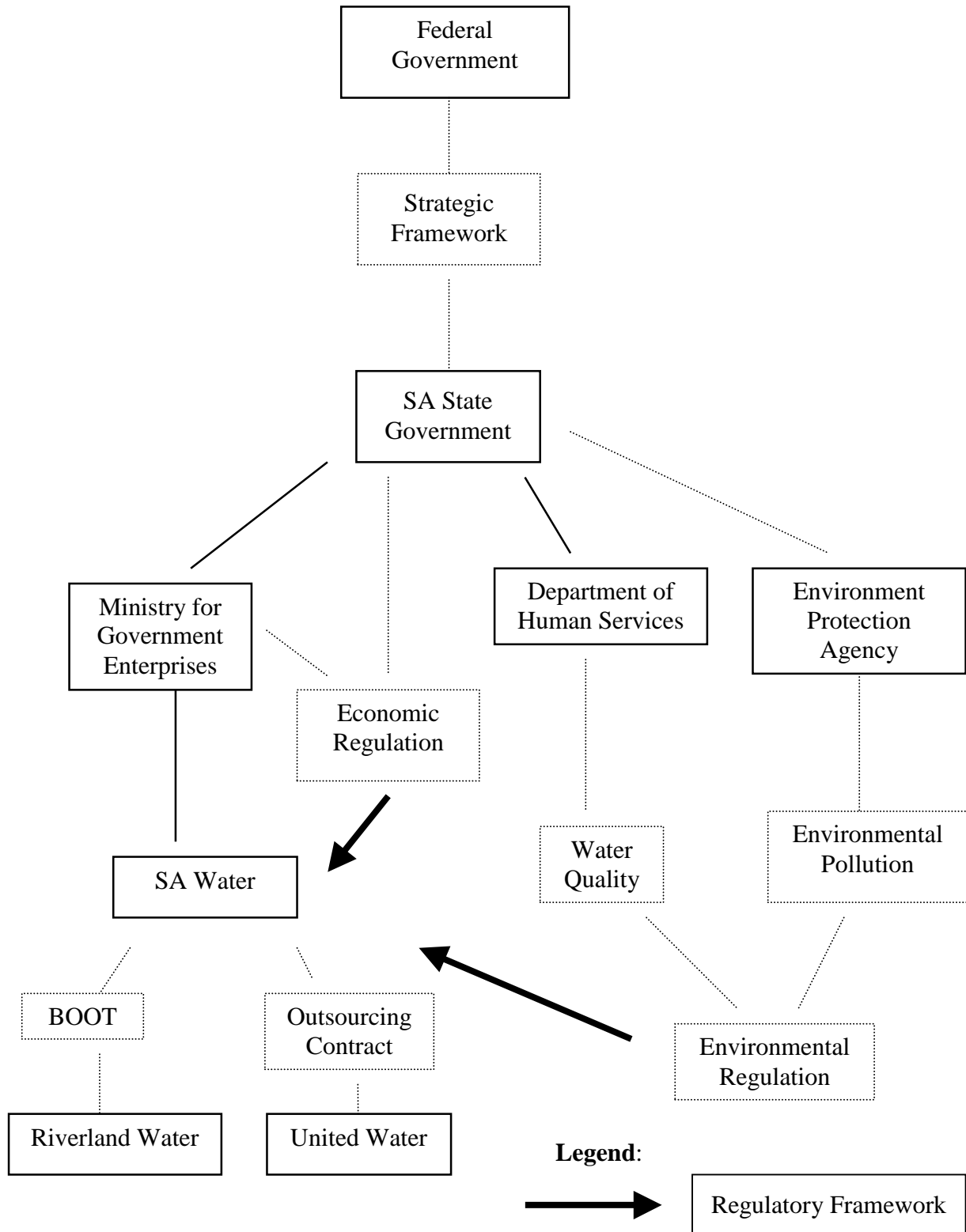
SA Water is a self-regulating body in respect of water quality, and it manages its own sampling program to ensure that the minimum requirements for drinking water compliance

are met. The Department of Human Services is responsible for public health issues. It would be the responsible authority in a case where demonstrable failure by SA Water allowed water which was not fit for human consumption to enter into the supply system. The Department of Human Services does not undertake routine analysis of the water supply.

In respect of abstraction, SA Water relies on its own reservoirs located east of the city and a pump supply from the Murray River. The Murray Darling Authority is responsible for the flow and quality of the water in the Murray River and SA Water has an allocation that it may choose in any one year to withdraw; there is no charge for the water provided. SA Water is exposed to the risk that there will be long-term degradation in the quality of the Murray River water and yet it has no responsibility for the river basin management required to arrest this degradation.

The responsibility for land use in the local catchment rests with the local catchment management boards, which report to Minister for Local Government. The quality of water discharged into the reservoirs is in theory the responsibility of the EPA. However, it undertakes only minimal analysis and there is no clarity in the final responsibility for quality of water discharged into SA Water's reservoirs. It is not clear, for example, where final responsibility would lie in the event of a parasite outbreak such as cryptosporidium in the drinking water system. .

South Australian Regulation Framework for Water & Sanitation Services - Year 2001



Bulgaria Case Study – Key Points

Bulgaria has a population of eight million people of whom 68% live in the towns. Sofia is the commercial and political center.

A former socialist republic with a legacy of run down public service infrastructure and serious pollution problems, economic progress is now being made. **Since 1997 fundamental structural reforms have been implemented, including market liberalization and private sector management.**

The water supply network covers 89% of the population. **Losses from the water system are estimated to be around 60%**, largely from aged asbestos cement pipes. Only 30% of towns have sewage treatment plants and the sewerage network requires extensive renovation and extension.

Until 1998 services were provided by state owned companies. Since then municipalities have been encouraged to take a share in their management and 35 water companies are now co-owned, or owned directly by the municipalities. Although financially independent, they are constrained by regulations, lack management autonomy, and cannot cover investment costs in their tariffs.

Since October 2000 the Government has launched a privatization strategy. Concessions are the preferred option in the water sector. An agreement has already been finalized for the capital city, Sofia, and others are in progress.

New concession companies will be regulated through their contractual agreements. The State is involved in preparing and approving them but **the municipalities will manage the contracts, issues of countrywide consistency, and independence from local politics will arise.** The state-owned and co-owned companies will continue to be managed and regulated by the State.

The regulation framework is in a state of transition. A Control Body is being set up to regulate water prices and control service quality in the interests of consumers. **The remit of this body is not yet clear, but its composition and effectiveness will be of considerable importance for the future economic regulation framework.**

The serious pollution problems in the country have also seen a new emphasis on environmental regulation. Four new basin departments will monitor and enforce water quality and environmental regulations.

Background

Bulgaria is located in Southeast Europe on the Western bank of the Black Sea. It has a population of around eight million people of which 68% live in the towns. The country is divided into 28 regions and 262 municipalities. The capital city of the country is Sofia, the commercial and political center, with a population of 1.4 million inhabitants; there are eight other towns with over 100,000 population.

The country suffered from high levels of inflation in the mid-1990s but since 1998 this has been stabilized and economic growth is forecast. In 1999 the GDP per capita was US\$1,380.

Bulgaria suffers from many of the problems of the former socialist republics of Eastern Europe including an inadequate and run down public service infrastructure. The country also suffers from major pollution problems from outdated power stations, petrochemical plants; steel, cement, industrial waste discharges; mining; and inadequate sewage treatment facilities. The quality of surface waters is poor with lead and arsenic problems affecting some drinking water supplies. Groundwater is universally contaminated with nitrates.

Following years of delays, Bulgaria is currently in the process of implementing fundamental structural reforms. A previously irresolute transition process left Bulgaria economically behind other countries in Central and Eastern Europe. Bulgaria launched privatization in 1991 with a privatization law being passed in April 1992. Privatization proceeded fitfully with changing government regulations, bureaucracy, lack of transparency, and insider dealing impeding progress.

Since 1997 the government has accelerated the privatization process and has liberalized previously controlled prices. Important steps have also been taken in banking sector reform, agricultural liberalization, energy pricing, property rights, and legal reforms required to improve the prospects for sustainable economic growth. Bulgaria was invited to start European Union accession talks in December 1999.

Approximately 50% of previously state-owned assets have been privatized although the role of insiders in the privatization process has led to corporate governance problems. However, considerable progress has recently been made in many areas including the liberalization of markets and trade, the privatization of small and medium sized enterprises and the restructuring of the financial sector.

Water and Sanitation Services Sector

Bulgaria water resources are relatively limited. Total water consumption amounts to nearly 12 billion cubic meters per year and water utilization is about 120 liters/person/day. There is a tendency towards a reduction in this figure because of the increase in the price of water and the improved accuracy of measurement. Potable water supplies account for 8%, irrigation 34%, industry 25%, and the electricity-generating sector up to 33%.

The country has a well-developed public water supply. More than 45,000 settlements have access to the public water supply, which is 90% of all settlements in Bulgaria. The water supply system comprises 67,000 kilometers of water pipeline, 10 dams mainly for water supply, 5,900 potable water tanks, 3,850 water supply pump stations, and 52 potable water treatment plants with an overall capacity of over 20 cubic meters per second. About 40% of Bulgaria's water supplies are provided by gravity and the rest through pumping stations. At present four water supply reservoir dams, seven drinking water treatment plants, 58 kilometers of pipework and other facilities are under construction.

A major problem for the Bulgarian distribution systems is water losses. Between 50% and 70% of drinking water is currently lost through leakage and new investment in this area is regarded as a major priority. The water system is suffering massive leaks from aged asbestos concrete water pipes. Almost 81% of Bulgaria's 67,000 kilometers of water pipes are outdated and during the last 20 years the efficiency of water usage has decreased from 85% to 49%. It

is estimated that US\$22 billion will be required for the replacement of all of these pipes. About half of the 3,600 kilometers of water pipes in Sofia need replacement now.

The total length of the constructed sewerage network is 7,718 km for the entire country with 322 thousand sewer connections. The number of settlements with sewerage systems is 277 of which 167 are towns. Seventy percent of towns are provided with a sewer network; the proportion in the rural areas is minimal. The condition of the network is poor; about 20% requires replacement for constructional reasons. In addition much of the network was constructed in the 1960s and can no longer provide for the increased volumes of wastewater, so a reconstruction program is needed.

Fifty-two urban wastewater treatment plants are currently operating in Bulgaria of which 13 are for mechanical treatment only and 39 have biological treatment included. They service 47 populated areas and 35% of the country's population. Only 30% of Bulgarian towns have sewage treatment plants. Many municipal wastewater treatment plants are incomplete owing to problems of funding and the government has identified this area as one of its main investment priorities.

Ownership

The ownership of water assets and lands in Bulgaria is vested in the public sector, both at state, and more recently, at municipal level. The State owns the rivers, reservoirs, dams, natural lakes, lagoons, and the underground waters. Municipal ownership includes the water systems and construction, systems and constructions for purification of sewage effluent, water supply and distribution systems for mineral water.

By a resolution of the Council of Ministers in 1998, there began a process of transfer of ownership from the entirely state water and sewage companies (ViKs) to the municipalities. The intention was to facilitate the privatization of the ViK sector in Bulgaria by making the municipalities more interested in improving the management of the companies. As a result a mixed state-municipal ownership appeared. However, in May 2000 the Government decided to stop the transformation of water companies into government-municipal partnerships. Experts believed that establishing partnerships between the government and the municipalities would create barriers to future privatization plans and adversely affect investors' intentions.

Currently, the Ministry of Regional Development and Public Works (MRDPW) and the respective municipalities co-own 16 water companies, in which the state holds 51% of the capital; 13 others remain entirely state-owned. Exclusively the municipalities own 19 companies, including the water and sanitation services of Sofia, which are under concession to a private company for a period of 25 years.

The companies with a state interest are entirely subordinate to the MRDPW through a process of representation at general meetings, ministry appointment of executive directors, and progress reporting. The municipal-owned companies are not subject to these measures but are still subject to methodical guidance from MRDPW which holds regular meetings with company managers for this purpose.

Within these constraints the water companies are financially independent and are responsible for water supply, its quality and efficiency, and for sewerage and sewage treatment. They determine their own methods of charging within the constraints of Ministerial Instructions and compliance with the provisions of the Law of Prices.

Despite this progress, regional water companies face problems, which include:

- Insufficient local accountability and a corporate environment not conducive to autonomous decision-making and commercialization.
- Low operating efficiency and cost recovery, evidenced by high water losses and tariffs for domestic water that cover only minimum operating costs and no investment.

- Adjustment-induced fiscal contraction has left companies with no access to long-term capital to finance urgent investments, upgrading, and rehabilitation.

Privatization of the Water and Wastewater Sector

In February 2000, a new Water Act was adopted in Bulgaria providing some harmonization with European standards. In October, the Government launched a new privatization strategy focused on the privatization of public services. A reduction of the state share in the companies is envisaged through the introduction of various ownership and management forms. These will include municipal cooperatives, joint ventures, and long-term concession arrangements. Furthermore, the strategy aims at introducing measures that will enhance the transparency of the privatization process.

The government is expected to shift the emphasis to tenders and auctions as opposed to negotiations with potential buyers and the practice of minimum bidding price could be eliminated. The cabinet will seek to promote the privatization of the water and sewage companies (ViKs) among others (Bulgarian Telecommunications Company, Bulgarian State Railroads, and the National Electricity Company) but there is a need to synchronize the legislation and establishing mechanisms for the different privatization procedures.

According to the privatization strategy guidelines, a portion of the regional water companies will be offered under a concession. The concession is regarded as the preferable form of privatization for the water sector, with the assets remaining in public ownership. The option to contract foreign water utility operators as managers with the provision to use the revenues and invest in the modernization of the existing infrastructure is also under consideration. The Minister of the Regional Development and Public Works, Evgeni Chachev, thinks that a combination of concessions and management contracts gives the best options for divestiture of the water sector in Bulgaria. According to him these methods give scope for a faster inflow of investments and technologies.

The Republic of Bulgaria has received a loan from the World Bank for funding the Water Companies Restructuring and Modernization Project. It intends to use these funds in part to pay for advisory services to develop and implement private sector participation (PSP) in the water sector in Bulgaria.

The process of introducing the private sector in the water supply and sewerage services is already taking place. A concession agreement between the water and sewage company of the Bulgarian capital city of Sofia and the UK-based International Water was finalized in the autumn of 2000. International Water holds a 75% stake and the Sofia water and sewage company will take a 25% share of a new company, called Sofiiska Voda, which is the holder of the 25-year concession. Sofiiska Voda intends to invest US\$65 million in the first 5 years, followed by US\$152 million in the next 15 years of the concession period. By the middle of 2001 the water utilities in the cities of Varna (on the Black Sea) and Shumen will also be concessioned, and another five privatization are planned to proceed during 2001.

MRDPW has prepared an ambitious middle term investment program till 2004 for the regional development of the country. A special place in the program is dedicated to the water supply and sewerage of all populated areas of Bulgaria. The necessary funds are expected to be provided by private business and the concessions in this sector as well as from the funds provided by the Government.

Regulation Framework

The laws, which govern regulation in the water and sanitation sector, are primarily derived from the Water Law, Ordinance 9, to which several amendments have been made during the last two years. Other changes are currently being discussed by Parliament. The goal is to synchronize these changes with the government concepts and policy for privatization of the

sector. Within this framework the regulatory arrangements are currently in a state of transition.

The Council of Ministers takes the strategic role. It has overall responsibility for water resources, approves the National Water Plan, and grants concessions for areas where several municipalities are involved, for example, 10 municipalities co-own the water supply system in Varna. The Council also defines the quantity of mineral waters used by public health centers and permits usage of water for defense and for national security, etc.

The approach to economic regulation that is emerging in Bulgaria places control with individual municipalities, or groups of them, within a framework of concession contracts. In its recent tender for a water concession to take on the water supply and wastewater services in Varna and Schumen, the Government listed the following goals for the project which are the aims of the development and implementation of private sector participation (PSP) in Bulgaria:

- (i). Increase the cost-efficiency of operations and development of the cities water sewage and waste water systems and introduction of current managerial and technical practices;
- (ii). Reduce contingent liabilities for the municipalities, by having the private sector contribute capital (if applicable) and share risks and incentives;
- (iii). Increase consumers satisfaction and willingness to pay through the provision of a higher quality, more responsive service; and
- (iv). Better delineate the role of the municipalities as regulator and representative of the customers' interests and separate the municipalities from the management of the restructured water companies and make tariff decisions more transparent by introducing an arms-length relationship between the regulator and management.

In order to achieve these goals, the municipalities intend to look at the possibilities of having either a management contract with an experienced operator or of bringing in an experienced strategic investor for each regional water company (RWC), to be selected by competitive tender among qualified firms, which would make an equity investment and assume management responsibility for the RWC under a specific legal and contractual form yet to be defined.

Article 193 of the Water Law states that the price of water supply, sewerage, and treatment services should cover the costs of construction, operation, maintenance, and reconstruction of the facilities and systems necessary for their service supply. Each company calculates its prices and can allow for a specified profit. Those companies with majority state ownership notify the MRDPW of their tariffs. The municipalities have their proposals ratified by their respective municipal councils. However, the base price of the water can only be considered after the losses from the poor water transit network, which currently stand at 50% to 70%, are taken into account. From 2002 any losses of water above 25% cannot be included in the water price. One of the major objectives of the privatization strategy is to dramatically upgrade the quality of the supply network and reduce losses.

In Sofia the new concession agreement is for 25 years and it gives the new joint venture company the exclusive rights over the municipal water and sanitation assets. In return, the company's achievements will be measured by output measures based on target levels of service. There is also a strong emphasis in the agreement on productivity and an affordable tariff. It is not clear whether any clear model is being promulgated for this but it seems that political influence will be a significant factor in the contractual relationship between the company and the Sofia Municipality.

MRDPW which supervises the water supply and sewage systems in the country, is planning to set up a new Water Control body to regulate service standards and the price of water countrywide. According to some observers this is to protect consumers from unjust increases in the price of water by the new owners. There are no specific measures to

subsidize tariffs for poorer members of the community in Bulgaria although they may receive general support through the social security system.

The proposed Water Control body will control the quality of water supplies, although its powers are not yet clarified; it is also expected to determine regional caps on water prices. It is intended to be a small professional body including five financiers. The minister of MRDPW has stated that the new body must be created before water privatization can move forward and he has appointed consultants to recommend on the form it should take and the means of setting it up. The present target for its commencement is September 2001.

The overall intentions of this approach are clear, namely to attract international finance and expertise within a regulatory framework that balances the interests of the companies and the customers of the services. As an observer of the process there are areas of concern in relation to the political independence of the regulation and how it will be applied in practice and also with regard to its consistency across the country. The Sofia concession was drawn up at a time when new legislation was still coming forward. Looking to the future and further concession agreements across the country, the role and status of the new Water Control body will be critical. This body can provide the means for an effective national framework of economic regulation in the sector.

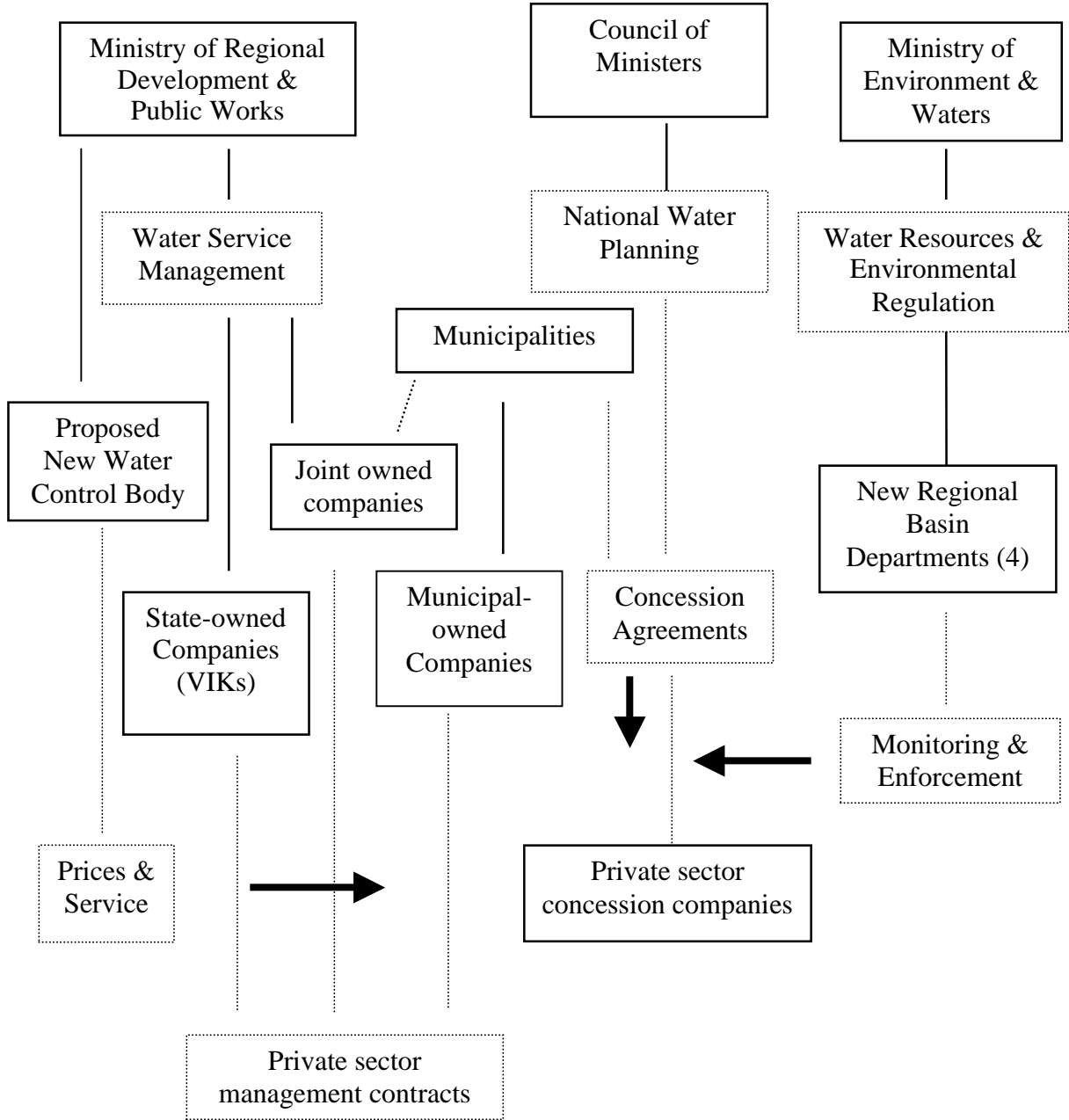
Environmental Regulation

According to the Water Law the management of water resources is to be undertaken at national and basin level. The regulatory bodies at national level are the Council of Ministers, the Ministry of Environment and Waters, and the Ministry of Health, which is responsible for drinking water quality. At basin level are new Basin Departments. Their areas are defined by the natural situation of the watersheds between catchment areas of one or more major rivers on the territory of the country and they do not follow the border of the administrative districts.

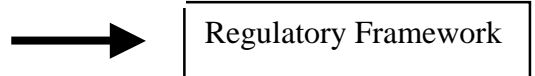
The Minister of Environment and Waters is responsible for state policy in the area of water resource management and development. Integrated water resource management is being developed through strategies for unified water management and for water resource use. The ministry issues licenses for the use of water, makes the necessary organization, makes proposals for and provides financing of procedures for granting concessions, organizes and manages the National System for Water Monitoring, and approves the projected plans and designs for water systems and constructions, etc.

The new Basin Departments are to be set up during a two-year period from the enactment of the law. They will take responsibility for the National System for Water Monitoring. This comprises a set of specific activities of measurement and analysis that enable assessments and forecasts for the quantity and the quality of waters to be made. It includes systematic monitoring of the meteorological, hydro-geological, hydro-biological, and hydro-chemical indices. The data that the system provides are used for control and using sanctions when necessary. The Basin Departments will issue water licenses, collect the charges for them, control compliance with the conditions of the issued licenses, and grant concessions. There are four regions for basin management of waters – the Danube region with its center in Pleven, the Black Sea region with its center in Varna, the East White Sea region with its center in Plovdiv, and the West White Sea region with its center in Blagoevgrad.

**Bulgarian Regulation Framework for Water & Sanitation Services
Year 2001 - in transition**



Legend:



Chile Case Study – Key Points

Chile lies along the Pacific seaboard of South America and has a population of around 14 million people. Its climate varies widely from the arid north on the Tropic of Capricorn to the temperate south of the country. Urban water and wastewater systems are well developed although less than one fifth of sewage collected is treated.

In response to the need to attract investment and improve its service provisions **Chile has restructured its legislative and institutional base in the water and sanitation sector over the last 12 years.** This has seen the progressive development of regional public companies, private sector contracts and, more recently, the encouragement of private concession companies. **The private sector now accounts for 60% of the total sector income.**

In order to ensure that the private companies properly meet their public service obligations, **Chile has established a national regulatory authority, the Superintendence of Sanitary Services (SISS) whose role is very similar to that of Ofwat in England and Wales.** The SISS is a decentralized entity with financial independence, which reports to the President of the Republic via the Ministry of Public Works

The Head of the SISS is appointed directly by the President for an indefinite period. He has a considerable degree of autonomy and is supported by a professional staff. He has a wide range of powers, which include tariff setting, supervision of the concession contracts, resolving disputes, and enforcing sanctions on the concession companies.

There has been a strong emphasis in recent years on extending services to the urban poor. This has been facilitated by special payment terms and by the use of state subsidies which are paid to the concessionaires, based on a percentage of the monthly account of the customer up to a consumption of 20 m³. This process ensures that the companies, who are required to charge full economic tariffs, receive proper payment for the services.

Environmental management and regulation is overseen by the National Commission of the Environment (CONAMA), which carries out its responsibilities through regional commissions of the environment, known as COREMAS. Its powers include consultation on and the coordination of environmental issues, policy development, ensuring the compliance and enforcement of legislation, financing environmental initiatives, and public education. Water resource management is undertaken by the General Direction of Waters (DGA).

Background

Chile is located on the Pacific Coast of South America covering an area of about 750,000 sq km with a population of around 14 million. The GDP per capita is US\$4,740. Average annual rainfall varies from less than 50 mm in the arid north to 1,250 mm in the temperate south. Urban water and sanitation services are well developed. Water supply coverage is about 99%, and 89% of the population is served by sewerage systems. Wastewater treatment is still very low, with only about 14% of the urban sewage being treated. Despite the latter, public health statistics for Chile are impressive, with infant and child mortality rates close to those of the Organization for Economic Cooperation and Development countries.

At the end of the 1980s, in response to the need to invest in new service infrastructure and make improvements to the continuity and quality of the service, the State introduced new legislation, which transformed the former public water and sanitation services into companies. The objective was to improve the efficiency of the management and the equitable nature of the services, and to mark a first stage in the separation of the management and regulatory activities of the State by the creation of the Superintendence of Sanitation Services (SISS).

Between 1988 and 1989, six laws were passed which successively:

- Established the system of concession and operation of the sanitation services; regulated the relations between the concessionaire companies, the State, and the users; and structured the control of the sector.
- Authorized the State to develop entrepreneurial activities in relation to drinking water and sewerage, and the formation of joint stock companies regulated by the rules applying to open companies.
- Created the Superintendence of Sanitation Services.
- Established a subsidy for payment of the consumption of drinking water and use of sewerage services, to the benefit of users on low incomes.
- Established the tariff system regulating the sector.

The legislation created public service companies characterized by a greater transparency, autonomy, commercial and operational management oriented towards the profitability of their assets. The formation of the regional companies required the creation of a tariff system based on the criteria of efficiency and economic rationality. In parallel, regulation of the sector was established providing for more autonomy, and a system of subsidized payment for the consumption of drinking water and use of the sewerage service for residential users on low incomes. This led to significant improvements in the commercial and operational management of the public companies and to the extension of a quality sanitation service throughout the country.

The Water and Sanitation Services Sector

There are 53 service companies in the sector at the present time. They are mainly regional and provide both drinking water and sanitation services.

In 1997, the coverage of drinking water and sewerage by the state companies (which represented 92% of the customers of the country) amounted to 99% and 91%, respectively. Chile occupied first place (with Argentina) in Latin America, in terms of access to sanitation services (sewerage system, septic tanks, or chemical latrines). However, the rate of coverage of sewage treatment remained at low levels; only 17% of sewage collected in the country was subjected to treatment in 1998.

About one half of new water and sewerage connections over the period 1987-1995 were provided to the urban poor. Municipalities funded most of the new distribution networks required for this purpose. To enable the provision of these services to be affordable to this group of customers, connection fees for new customers were allowed to be paid in up to 60 installments. In addition, individual subsidies were granted by local government to those in

need, thus ensuring full payment for services provided. Finally, training was imparted to housewives to reduce wastage of water.

The private sector, in addition to owning certain companies providing water and sanitation services, participated in the development of the services by means of contracts with the state companies. These included service contracts, management contracts with investment, BOOT contracts, and partial concessions in respect of an aspect of the service or a geographical area. The need for greater participation from the private sector gained more emphasis from 1995, based on a political will to encourage a more equitable growth of the country by means of allocating resources to areas with no entrepreneurial public action. Secondly, the fixing of coverage targets and quality of service at a national level generated the need for investment, especially in sewage treatment, which was in excess of the public companies' capacity to self finance (limited borrowing, distribution of 100% of the dividends).

In February 1998 a second significant step in the process of change took place with new legislation to modernize the regulatory framework of the sector and facilitate the involvement of the private sector. This legislation:

- Established rules applying to all the companies of the sector - whether publicly or privately owned - with regard to concessions, tariffs, development plans, and quality of service.
- Provided greater powers for SISS to supervise the fulfillment of the commitments of the service companies (development plans, levels of quality of the water and of the service). Regulations on the quality of service were introduced and the amount of the fines was significantly increased.
- Introduced improvements in the tariff fixing process and reduced the fixed component of tariff charges.
- Established safeguards to avoid a concentration of ownership between water and sanitation companies and the concessions of different monopolistic services.
- Determined the percentage of participation of the State in the ownership that could be transferred to the private sectors (a maximum of 65%, more if the State is not involved in increases in capital contributions).

Up until 1998, the private sector invoiced less than 10% of the sector income. By the end of 1999, as a consequence of the transfer of the control of the water and sewage companies to private investors and operators, the private sector represented 60% of total income and provided drinking water and sewerage services to 68% of the urban population of the country. The largest company, Empresa Metropolitana de Obras Sanitarias (EMOS), serves 37% of drinking water connections in the country; the Metropolitan Region overall has 45%.

The Regulatory Framework

In Chile, the service companies are subject principally to the regulation and supervision of the SISS. In addition, other organizations regulate specific aspects of their activity, such as the National Health Service and the General Direction of Waters (DGA), which is charged with managing hydraulic resources at a national level and the formation of water rights. The National Commission of the Environment (CONAMA) applies State policy in relation to environmental issues.

Those companies remaining primarily in public ownership are subject to regulation and administration by the Ministry of Economics through the System of Administration of Companies. This is an entity created to manage the companies where the Corporación de Fomento de la Producción (CORFO), which is a government body responsible for promoting the economic development of Chile, holds shares, rights, or any other title of ownership. The System of Administration of Companies appoints the boards, controls meetings, and sets policies.

The state water and sanitation companies are subject to the regulations regulating public companies in general. These apply state budgeting rules, require authorization from the Ministry of Finance for any external debt, and constrain the financing of public companies through controls over dividend policy, budget allocations, funds reinvestment, and borrowing. The state companies must also meet the specific service targets of the Government, namely:

- an increase to 100% in the coverage of drinking water and sewerage in the urban areas of the country.
- a significant increase in the national coverage for sewage treatment with a view to achieving 70% coverage by the year 2000 (except for the Metropolitan Region).

All of these restrictions are removed when more than 50% of the shareholding capital passes into the hands of privately-owned companies.

Economic Regulation - The Superintendence of Sanitation Services

The sanitation services sector in Chile is regulated by the SISS, a public entity created in 1988 to supervise drinking water and sanitation companies and ensure the compliance of their activities with the regulations. It is a decentralized entity with financial independence, which reports to the President of the Republic via the Ministry of Public Works (MOP).

The head of the SISS is the Superintendent, who is chosen and removed by the President of the Republic. The term of the position is indefinite according to the law, but there are restrictions with regard to holding other offices or taking responsibilities in the private sector, and regarding the use of confidential information.

The SISS is recognized as a competent professional body. Its staff is well paid and it has good working conditions. As of June 2000 it employed 136 officials, 92 of who were professionals, including 32 civil and industrial engineers, 12 lawyers, and 12 commercial engineers-economists. The organizational approach is based on the following principles:

- Management by objectives
- Multi-functional team working
- A culture of responsibility
- Continual audit and review
- Information regarded as an asset
- High quality technology and working systems
- Outsourcing to specialists

As a regulating entity, the SISS issues instructions of a mandatory nature for all the concessionaires of water and sanitation services, and ensures compliance with the legal, regulatory, and technical norms that govern the different aspects of the services. Resolutions taken by the SISS can be contested, first before the SISS itself, and there is always the possibility of going to the Chilean Courts of Justice. Its main responsibilities are as follows:

- Study, propose and supervise compliance with the technical standards for the design, construction, and operation of the sanitation systems.
- Ensure that the Law on Sanitation and its regulations are complied with.
- Report on and ensure the fulfillment of the system of concessions.
- Regulate the five-year tariff fixing processes.
- Resolve any possible disputes between drinking water, sewage treatment or sewerage companies and the users.
- Impose fines on the companies in accordance with the law.
- Control the discharges of the drinking water and sewerage companies and discharges of liquid industrial waste.

The SISS has the power to recommend applications for concessions to the MOP. A concession covers the establishment, construction, and operation of (i) production of drinking water, (ii) distribution of drinking water, (iii) sewage collection, and (iv) sewage disposal, in a

defined geographical area. The concession and the right of operation are assets of the concessionaire and can be leased or transferred, subject to approval by the SISS. In order to apply for a concession in a given area, a company must submit to the SISS a development plan for the area and a guarantee, in addition to providing accreditation of the appropriate water rights.

The development plan must include a detailed program of the planned investments in the concession area for the next 15 years. It must also guarantee a level of service for each sector within the concession area. If, within 60 days from the date of publication of the application, another company applies for the same concession, it is granted to the company offering the lowest tariff and complying with the technical requirements, providing the tariff is not higher than that calculated by the SISS. Another factor that may be considered for the granting of a concession is the duration of time that is necessary to commence the operation.

The concessionaires for drinking water and sewerage services are responsible for guaranteeing the continuity and quality of the service. In the event of a modification by supreme decree of the levels of quality of the service or modification by the SISS of the development program, the concessionaire is entitled to review its tariffs proportionately. They are responsible for constructing, operating, and maintaining the public service networks up to the point of connection with the customer, and for controlling discharges to its sewerage systems. The concessionaire is also obliged to allow the use of its networks by other companies producing drinking water or disposing of sewage which directly contract the provision of the service with large consumers in return for a tariff determined by law.

A concession can be terminated by the President of the Republic of Chile by means of a Supreme Decree of the MOP, if the company fails to comply with the law, meet the obligations set out in its concession agreement, or to fulfill its development plan. Depending on the seriousness and repetition of the fault, the SISS may fine the company or submit a technical report to the President of the Republic, who will take the final decision with respect to the termination of the concession.

Tariffs

The tariff system in Chile is based on the fundamental principles of efficiency, equity, and transparency, and has been designed to ensure self financing of companies plus an adequate return on the investment. The tariffs are calculated every five years, in accordance with procedures established by law.

The SISS has been responsible for setting tariffs in the water sector since 1990. The tariffs subsequently become official by means of decrees issued by the Ministry of Economics, and they have the nature of maximum prices for a period of five years. The SISS is charged, in an interactive process with the companies in the sector, to analyze and determine the tariffs for sanitation services taking into account the following fundamental objectives:

- Economic efficiency - to make possible the optimization of profits, based on the limited resources of the company, involving technical efficiency and costs;
- Financial viability - to allow companies to generate sufficient income to cover the costs of operation, maintenance and development, required for their efficient functioning;
- Equity - not to discriminate between users, except for reasons of different costs, avoiding crossed subsidies among consumers; and
- Intelligibility - to give clear signals, both to the users in order to determine an adequate level of consumption, and to the service provider, in order that it may determine the optimum level of production.

To guarantee that possible inefficiencies present in the actual companies are not passed on to the users the tariffs are determined on the basis of a simulation of an efficient model company to

- reflect the marginal cost of the service provider;
- cover the costs of efficient operation and maintenance, and allow the sanitation companies to finance their development;
- generate profitability on the modeled assets such that the minimum, according to the law, must amount to 7% annual true profits;
- reflect improvements in the efficiency of companies, and its gradual transfer to the users, by means of a review every five years;
- provide adequate information to the user to guide his consumption decisions and contribute towards an efficient allocation of resources, also facilitating the production decisions of the companies; and
- promote the efficient operation of services, and the rational use of water by the users.

Thus the tariffs are calculated according to technical parameters, whereby profitability is only guaranteed by an efficient level of operation, towards which the companies must strive, and which is represented by a model company, with reference to known development programs.

Consumer Subsidies

The law establishes subsidies in respect of drinking water and sewerage for low-income families. The subsidies towards the payment of consumption of drinking water and sewerage services form part of the monetary assistance given to low-income families and families with economic problems that prevent them from paying the whole account. The subsidies consist of the payment by the municipalities, who receive the funds from the State, to the concessionaires of a percentage of the monthly account of the customer up to a consumption of 20 m³.

According to the law, the percentage to be subsidized on the fixed and variable charges may not be less than 25% of the account of a consumer, nor higher than 85% of the total. Moreover, it must be equal for all the beneficiaries of the same region who are subject to the same tariff and have a similar economic situation. The benefits for customers entitled to a subsidy have a duration of three years. The rights to a subsidy are withdrawn automatically in any of the following cases:

- Change of address outside the place where the consumer receives the subsidy,
- Voluntary renunciation of the benefit,
- Non payment of the portion payable by the customer,
- Failure to provide, within the required period, the information requested by the municipality to enable the beneficiary to qualify for the subsidy, and
- Termination of the period of the subsidy.

The implementation of the system of subsidies in Chile has assisted the service companies to maintain an acceptable level of bad debts.

Environmental Controls

Environmental regulation across all sectors is undertaken by the Ministry of the General Secretariat of the Presidency through the National Commission of the Environment (CONAMA). CONAMA is a State institution with the mission of promoting the environmental sustainability of the development process, and of coordinating the actions derived from the policies and strategies defined by the government in the environmental area. Its main objectives are:

- To recover and improve environmental quality,
- To prevent environmental deterioration,

- To promote the sustainable use of natural resources,
- To introduce environmental concerns in the productive sector,
- To involve the citizens in environmental management,
- To strengthen the environmental institutions at national and regional levels, and
- To improve the environmental legislation and to develop new management instruments.

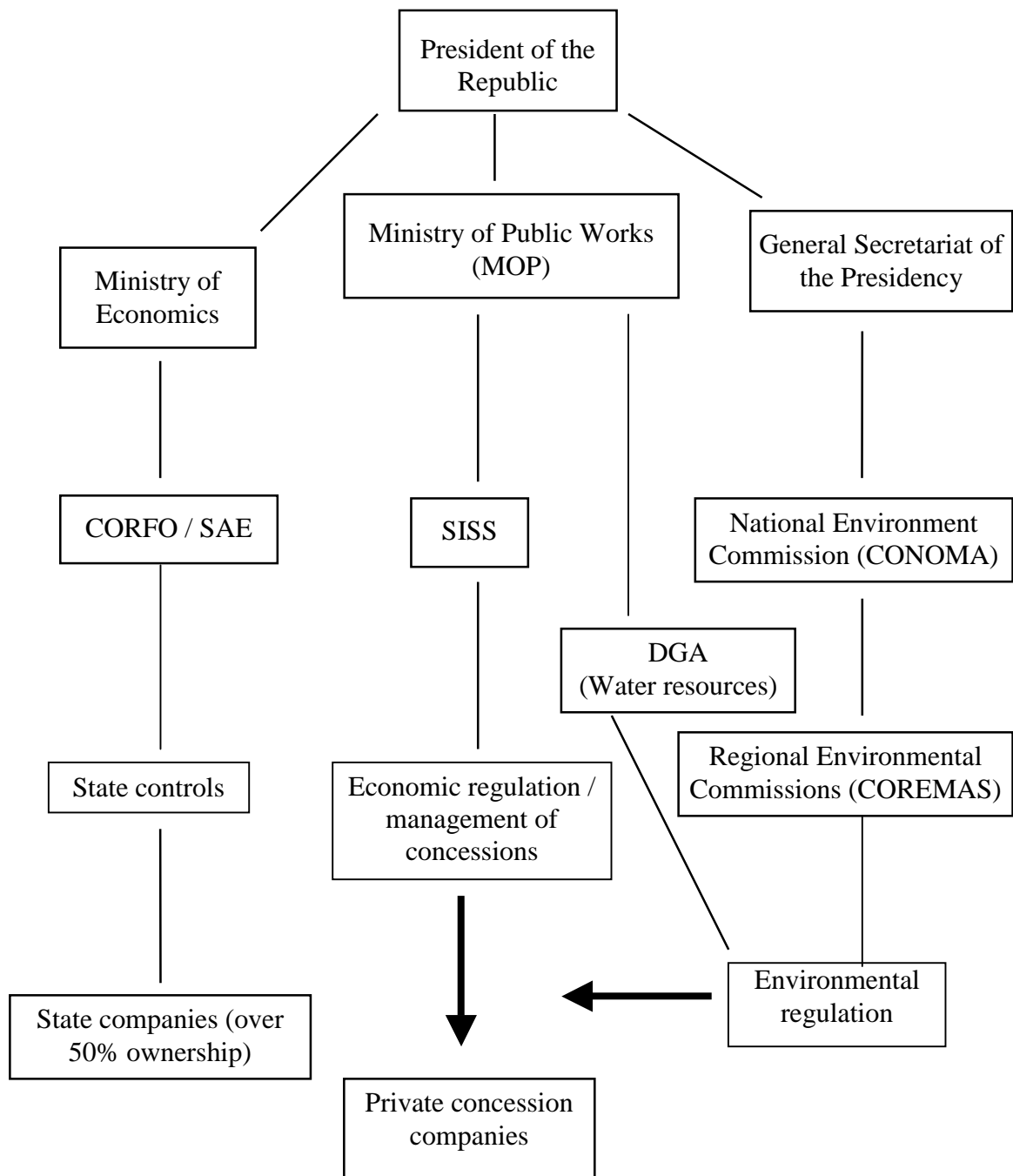
The CONAMA carries out its responsibilities through Regional Commissions of the Environment, known as COREMAS. Its powers include the promotion of consultation and coordination on environmental issues, policy development, ensuring the compliance and enforcement of legislation, financing environmental initiatives, and public education.

The General Direction of Waters (DGA) reports to the MOP and is responsible for the planning, development, and husbandry of the natural water resources. There are also laws, regulations, and rules regulating the quality of drinking water and of sewage. The SISS establishes an obligation on the part of sanitation companies to control the discharges of liquid industrial residues into their sewerage networks. Other bodies concerned with the supervision of the companies with regard to the quality of drinking water and sewage include the Health Service, reporting to the Ministry of Health, and the municipalities.

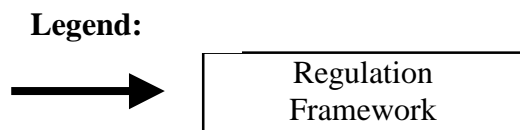
Comment

The regulation framework in Chile is modeled on the system that operates in England and Wales. The role and powers of SISS reflect those of Ofwat. A distance is achieved from the political influences in local communities enabling an objective independent approach founded on well-established principles to be applied. In Chile each concession contract, in effect, incorporates the full regulatory package administered by SISS.

Chilean Regulation Framework for Water and Sanitation Services



CORFO = Corporacion de Fomento de la Produccion
 SAE = System of Administration of Companies



England & Wales Case Study – Key Points

England & Wales are located within the British Isles off the Northwest coast of mainland Europe. They have a combined population of about 52 million and are one of the world's wealthiest nations. The country has an extensive coverage of high quality water and sanitation services.

In 1989 the Government passed legislation that revolutionized the management of the water and wastewater sector. The former Regional Water Authorities were privatized and a national economic regulator, the Office for Water Services (Ofwat), was set up to oversee them.

Water and sanitation services are provided by 10 regional companies and 18 water only companies. The companies are obligated by license to provide the essential services within their areas. **Ofwat is responsible for ensuring that they carry out their functions properly and are able to finance them; it is also required to protect the interests of customers.**

Ofwat is headed by a Director who is appointed for a fixed term. **The Director is independent of the political system and he is able to exercise wide powers of discretion in undertaking his duties.** He works closely with 10 Customer Service Committees (CSCs) which represent consumers' interests across the country. The regulator conducts all activities openly and he publishes reports on his approach to issues and on decisions taken.

Ofwat is responsible for tariff reviews, which are undertaken every five years, monitoring companies' performance, and taking sanctions against them when necessary. In the course of this work, service standards and targets are specified in close consultation with environmental and customer interests.

Since privatization, the standards of service provided by the water and wastewater sector have improved substantially, and they generally comply with the stringent European Union (EU) standards. The price of the services has also risen significantly, by over 30% on average, reflecting the high levels of investment required to upgrade the services during the 1990s.

Environmental regulation is provided by **the Environment Agency** which is responsible for setting standards, monitoring compliance, and enforcing sanctions across the natural water environment. **The Drinking Water Inspectorate** has comparable responsibilities for drinking water quality. **Both agencies work closely with Ofwat to provide the overall regulatory framework for the industry.**

Background

England and Wales comprise a substantial part of the British Isles, which lie to the northwest of mainland Europe. Together with Scotland and Northern Ireland they form the United Kingdom, which is one of the world's wealthiest nations with a GDP per capita of US\$22,640. The total population of England and Wales is about 52 million. London, the capital city, has a population of 7.3 million and the towns of Manchester and Birmingham exceed 2 million each.

The country has a cool, moist, temperate climate and although rainfall and topographical conditions vary considerably, it is well endowed with water resources. Surface waters provide the predominant source of water supply and 20% of demand is met from groundwater sources. The quality of both the natural water sources and drinking water supplies is good reflecting the high levels of investment that have been made in the water and wastewater services, particularly over the past decade.

Prior to 1974 the water and sanitation services were managed by a mixture of statutory water supply companies and by hundreds of local authority water and wastewater departments. In that year a major reorganization of local government separated the management of the public water services from local government and consolidated them into 10 Regional Water Authorities (RWAs). The RWAs, whose areas were based on natural river catchments, were responsible not only for water and drainage services but also for river management and associated environmental responsibilities. These authorities rationalized the numerous local networks and working methods and introduced more commercial practices, but they were not able to provide the capital investment and productivity that the industry required.

In 1989 the Government passed legislation that revolutionized the management of the water and wastewater industry in England and Wales. The industry was privatized in its entirety, subject to a comprehensive framework of economic and environmental regulation. This reform was one of the last in a series of public service privatizations introduced by the Thatcher government to attract private investment and management into ailing public services. In view of the monopolistic nature of water and wastewater services, the reform was a controversial one, but measured in terms of improvements to customer services, water quality, and impact on the water environment, generally it has been very successful. The accompanying increase in the level of water tariffs has been more debatable.

Water and Sanitation Services Sector

Water and wastewater services are provided by 10 private companies, the successors to the former Regional Water Authorities. They provide wastewater services to 50 million people and water supply to 40 million. A further 11 million persons receive their water supply from 18 water only companies, the majority of which were operating in a restricted form of private ownership prior to 1989.

A fully privatized industry requires a comprehensive and rigorous framework of regulation. This is provided by three national bodies. The Office of Water Services (Ofwat) is responsible for the economic regulation of the private companies. This includes prescribing and enforcing both service standards and tariff levels. Environmental regulation is the responsibility of the Environment Agency (EA) that prescribes, monitors, and enforces compliance across the natural water environment. The Drinking Water Inspectorate (DWI) is responsible for ensuring that drinking water quality standards are complied with.

Each of the companies holds a license. They set out the conditions that must be met to ensure that the duties of a water and wastewater utility are properly performed and that there is ultimate security for the nation's essential public service assets. The companies are also able to undertake other, non-regulated, commercial business. A number of the companies have diversified their activities, including the operation of water services internationally. With Ofwat's consent, one or two of the smaller water only companies merged during the 1990s. There have

also been a number of ownership changes with French and German companies holding majority shares in some of the companies. The license conditions continue to apply to safeguard the core water and sanitation services, including the prevention of any form of cross subsidy with other commercial activities managed by the company.

The freedom given to these companies is unique in the water industry worldwide and there is no question that they have achieved significant improvements to services during the past decade. One of the incentives for the privatization legislation was the growing concern about the industry's performance in the 1980s at a time when new European quality standards were being introduced. There was a perceived need for new capital investment on a scale that the public purse could not support. In the 1990s, following privatization, over US\$20 billion was invested by the new companies (around 2.5 times the level in the 1980s).

Today, drinking water quality is recognized as being of a consistently high quality in England and Wales. The sewerage network serves 96% of the population and over 80% of the sewage effluent receives secondary or tertiary treatment. River water quality has shown consistent improvement over the decade. Monitoring of these indicators is thorough and the regulation systems in place should ensure that standards would continue to be improved and maintained.

These improvements have not taken place without stress. The high levels of investment have resulted in substantial increases in water bills. There are concerns about perceived problems in the services such as the high levels of water leakage from the distribution systems, instances of poor bathing water quality on the coasts, and supply restrictions in drought conditions that have been common in the 1990s. There is also recognition that these issues require resources and cost money to overcome. Now that the full cost of services is falling directly on the consumers of water, concerns and debates about the efficiency of the companies and choices for the future are becoming more informed and transparent.

Regulation Framework

The Director General of Water Services is the economic regulator of the water and sewerage industry in England and Wales. Ofwat is a non-ministerial government department for which the Director has full responsibility. It is financed by an annual levy on the water companies. The Director is appointed for a fixed term by the Secretary of State for the Department of the Environment and may only be removed for incapacity or misbehavior.

The Director must comply with the statutory duties laid down in the Water Industry Act 1991 and, in the performance of these, he has to make a wide range of judgements about how to use them to achieve his objectives. He is not subject to direction about what those judgements should be. Regulators are independent of ministers but the Director must make an annual report to the Secretary of State that is laid before Parliament and published. He also documents for public inspection his approach towards regulation issues and the reasoning behind decisions that he reaches.

The Director is assisted in his duties by the Ofwat National Customer Council (ONCC) and by 10 regional Customer Service Committees (CSCs), for which he appoints the chairmen and members. They have statutory duties to identify concerns, represent the views of customers, and investigate customers' complaints. Ofwat regularly consults the CSCs for their views on policy matters affecting the interests of customers. The direct link between the CSCs and the regulator means that customer interests play a significant and continuous presence in his work.

The Director's primary duty is to ensure that the functions of a water and sewerage company are properly carried out; and that companies are able to finance their functions, in particular by securing a reasonable rate of return on their capital.

Subject to the above, the Director has a duty to customers to ensure that no undue preference is shown and that there is no undue discrimination in the way companies fix and recover charges, and that rural customers are protected. This means that a customer's bill

should, in general terms, reflect the costs that that customer imposes on the water and sewerage systems. He is also required to protect other aspects of customers' interests, including their quality of service.

These duties are seen to be complementary because customers benefit if efficient companies remain financially viable. The protection of customers' interests will become more explicit under a draft water bill, which is currently under consideration, that proposes to make the customer duty a primary one alongside the 'financial viability' one. There is a body of opinion that believes that the Director's duty to protect the interests of customers should be made his single primary duty, putting customers' interests firmly at the heart of water regulation.

The Director has a duty to encourage companies to operate efficiently and the companies' price limits must contain productivity targets. Ofwat examines company performance against their targets and makes comparisons both between the companies and with other comparable sectors of the economy.

The Director reviews company price limits every five years. He sets the annual price increase, or 'K' factor, for each company to reflect what it needs to charge to finance the provision of services to customers. The Director sets price limits (or caps) that give companies the incentive to make efficiencies. Companies that increase efficiency and hence profitability, can share these rewards with shareholders and customers.

Interim price adjustments can take place in situations where significant changes in circumstances fundamentally alter the assumptions made during the review. They might include new commitments resulting from unanticipated legal requirements, or substantial external impacts on a company's business.

The Director also has a duty to facilitate competition between suppliers and potential suppliers, ensuring that a framework exists in which competition can develop. The companies operate under licenses to provide water and sewerage services in England and Wales, which were awarded in 1989 for a period of 25 years. A new, inset appointment can also be granted to a company seeking to provide water and/or sewerage services on a site without a current supply, or to a large user of water or sewerage services within an existing company's area. So far only a few such appointment have been granted.

The Director has the power to amend a company's license, either in agreement with the company, or otherwise if he considers that it is acting against the public interest. Disagreements between companies and the regulator are normally settled through consultation and agreement. Where the Director feels the company is in breach of the terms of its license, or is failing to perform its fundamental duties, he has powers to secure compliance by means of an enforcement order. If the company fails to comply, then the Director can ask the High Court to appoint a special administrator to run the company until arrangements can be made for a new company to take over. A Special Administration Order would require the Secretary of State's consent.

If a company acts against the public interest by misusing its monopoly position, the Director can refer the case to the Competition Commission. An example of this might be a requirement that the customer purchase something connected with the water and sewerage service only from that company or another nominated source. This could lead to an order from the Trade and Industry Secretary requiring remedial measures or an end to the practice.

Ofwat's powers are, thus, considerable and the Director has a clear mandate to use his own independent judgement in carrying them out. The main practical means that he has are the fixing of company tariff levels, the setting of service standards, the measurement of performance, and the enforcement of sanctions. In carrying out his duties he works closely with customers, handling their complaints and awarding them compensation in prescribed circumstances.

Tariff setting

The process for setting company tariff levels is based on the price cap form of regulation. The formula for calculating a company's future tariff at review is known as RPI+K but is better expressed as RPI-P+Q. The 'K' factor includes two critical factors. The first (P) is a projection of productivity that the company should, in the regulator's opinion, achieve. The second (Q) is based on the additional cost that the company will face in meeting its future capital investment commitments. This has been a particularly significant factor during the last decade at a time when under investment in previous years had to be made good at the same time as tighter quality and environmental standards were being adopted from Europe.

In making his determinations the regulator takes a number of factors into account for each company. They include performance over the previous period, both financial and operational, forward commitments, asset condition and current investment levels, operating costs, and productivity assessments. In doing this he makes use of company comparisons that assist him in identifying good practice and poor performers, and establishing industry norms. He must also take a view on factors such as the cost of capital and acceptable profit margins. In carrying out this work, Ofwat consults fully with the companies and through the Consumer Service Committees with customers and other interested groups. The Director takes the final decisions on future tariff levels; there is no overt political involvement in the process.

The average price change allowed for companies in the first years after privatization was around 5% per annum, in real terms, reflecting the weight given to future capital investment requirements. Ofwat conducted its first price review in 1994, introducing more demanding efficiency targets and tighter financial assumptions, as a result of which permitted price increases fell to under 2% on average. The Director reviewed prices again in 1999 and in its 1999-2000 Annual Report Ofwat stated, "The current price limits, which came into force on 1 April 2000, allow the companies to meet all their responsibilities to improve water quality and the environment. Average bills nationally will fall on average by 2.1% per year for the next 5 years in real terms."

The issue of price rises has been a contentious one since privatization. In the early years, high increases, exaggerated by inflation, were blamed on the process of privatization itself. High profit levels fueled these fears, as many companies were able to beat their efficiency targets. The new labor government reacted to this situation by clawing back some of the company profits with a one-off tax levy. This represented a political view, supported by popular public opinion, that regulation had been too generous in the early years. On the other hand, an effective company needs some incentive to be able to improve its profitability and Ofwat has been able to take back much of the productivity gain for customers in the form of lower prices in its subsequent reviews. It is also the case that the companies have met their investment targets in the 1990s and made significant service improvements. Most objective observers believe that the regulatory framework has achieved its objectives and that the water and wastewater sector in England and Wales is far healthier now than it was 10 years ago.

For the future, the regulator must continue to focus on the license obligations in a climate where companies face tougher productivity targets and, in many cases, begin to derive the majority of their income from non regulated activities, often overseas, possibly operating as multi-utility companies. New issues will arise but there is no obvious reason why the regulatory process cannot continue to cope with them on a pragmatic basis.

Standard setting

Each year the water and sewerage companies in England and Wales are required to provide Ofwat with information on their performance against various aspects of service. The company's annual return covers levels of investment in new capital assets, and its operational performance in meeting potable water quality and environmental standards. The report also

measures performance against eight levels of service indicators, which Ofwat uses to provide a measure of service to customers.

The eight levels of service indicators are:

- Inadequate pressure - the number of domestic properties which experience pressure below a given reference level in normal circumstances.
- Supply interruptions - the number of properties without a supply of water for longer than three hours, and the reasons for this.
- Restrictions on use of water - the percentage of the population that has experienced restrictions in using water e.g. hosepipe restrictions, drought orders, etc.
- Flooding from sewers – records problems caused by inadequate drainage.
- Billing contacts - the number of billing contacts received by a company and the time taken to deal with them.
- Written complaints - the number of written complaints received by a company and the time taken to deal with them.
- Bills for metered customers - the percentage of metered customers who receive at least one bill during the year based on an actual meter reading.
- Ease of telephone contact - the ease with which customers can make telephone contact including speed of response, abandoned calls, and engaged lines.

In order to provide confidence in this process Ofwat appoints independent auditors to verify the information and to ensure that it has been collected and compiled in an acceptable manner. Ofwat publishes the findings in an annual levels of service report. The report compares companies' performance against industry averages and individual companies are assessed in terms of their performance over time. Ofwat used the results of analyses for the period 1996-1997 to 1998-1999 to adjust some company price limits for each of the five years commencing 1 April 2000. These adjustments rewarded the best companies and penalized the worst, thereby maintaining incentives for companies to improve services offered to customers.

Customers' interests

Strong and effective arrangements for the independent representation of the interests of customers are vitally important in the regulation of a monopoly utility such as the water industry:

- Customers cannot take their business elsewhere and from time to time they need help and advice in resolving complaints against their service company.
- Representation on behalf of customers ensures that companies are aware of, and are responsive to, concerns about the range and quality of their services.
- The interests of customers must be represented to Ofwat, which cannot carry out its job as economic regulator properly without such knowledge.

In England and Wales, customer interests are represented by Customer Service Committees (CSCs) established and maintained by the regulator. The CSCs are concerned solely with the interests of water customers and do not share the wider duties of the regulator.

There are 10 CSCs reflecting the regional structure of the industry. They are fully independent of the water industry with their own statutory identity and duties to investigate customer complaints and to represent the interests of water customers. CSC chairmen and members are local people, appointed on merit, with a wide range of backgrounds and experience and a shared interest in working on behalf of customers. The CSCs are funded by the regulator and are supported by professional and technical staff from his office.

Representation of customer interests at national level is the responsibility of the Ofwat National Customer Council (ONCC), whose membership consists of the 10 regional CSC chairmen. ONCC provides a forum for the exchange of information between CSCs, organizes national conferences for CSC members, and promotes good communication with Ofwat. ONCC

also represents customers' interests directly to the Government and the media. It has lobbied, among other things, for an independent consumer council for water that is the subject of draft legislation.

The way in which customer representation is integrated within Ofwat is a strength of the regulatory regime in England and Wales. The structure ensures that there is close and regular contact between the regulator and customer representatives who have a significant influence on his work and the regulator benefits from informed debate before he takes his decisions.

Customers benefit in a number of ways including:

- Complaint handling - Between them, the CSCs and Ofwat provide a one-stop service for customers who have a complaint about their water company. To date CSCs have achieved compensation and savings for customers amounting to over £6 million.
- Practice and policy - The CSCs and the regulator working together have developed initiatives to improve company practice and the CSCs have contributed to Ofwat's policy research and development.
- Setting price limits - Customer involvement is an important part of the Periodic Reviews when new price limits for all water companies are determined. In the 1994 and 1999 reviews the water companies, with the involvement of the CSCs, carried out research to establish their customers priorities and ensured they were fed into the review process.

Customers are also entitled to guaranteed standards of service, as laid down by the Government. Failure to provide them gives automatic rights of compensation, normally £20 per occurrence for domestic customers. Ofwat monitors the scheme, recommends changes, and arbitrates in the event of any dispute between customer and company. It also publishes details annually about company procedures and payments made under the scheme.

Some companies go further than the statutory requirements but the following aspects of service must be covered. There are guaranteed time limits for making and keeping appointments, responding to account queries and service complaints, and dealing with interruptions to water supply. Compensation is also payable for repeated instances of low water pressure and for sewage flooding into customers' premises. Companies have also agreed to license changes requiring them to pay compensation to customers when essential household water supplies are interrupted as a result of emergency restrictions authorized by drought orders.

Environmental Regulation

The Environment Agency (EA) which was formed in 1996 from the National Rivers Authority and smaller pollution control bodies undertakes environmental regulation in England and Wales. It has a headquarters, which handles policy issues, and eight regional offices. The agency's duties devolve from the 1995 Environment Act and include responsibility for river basin management, water abstraction licensing, the monitoring and enforcement of effluent discharges, pollution control, and natural water quality.

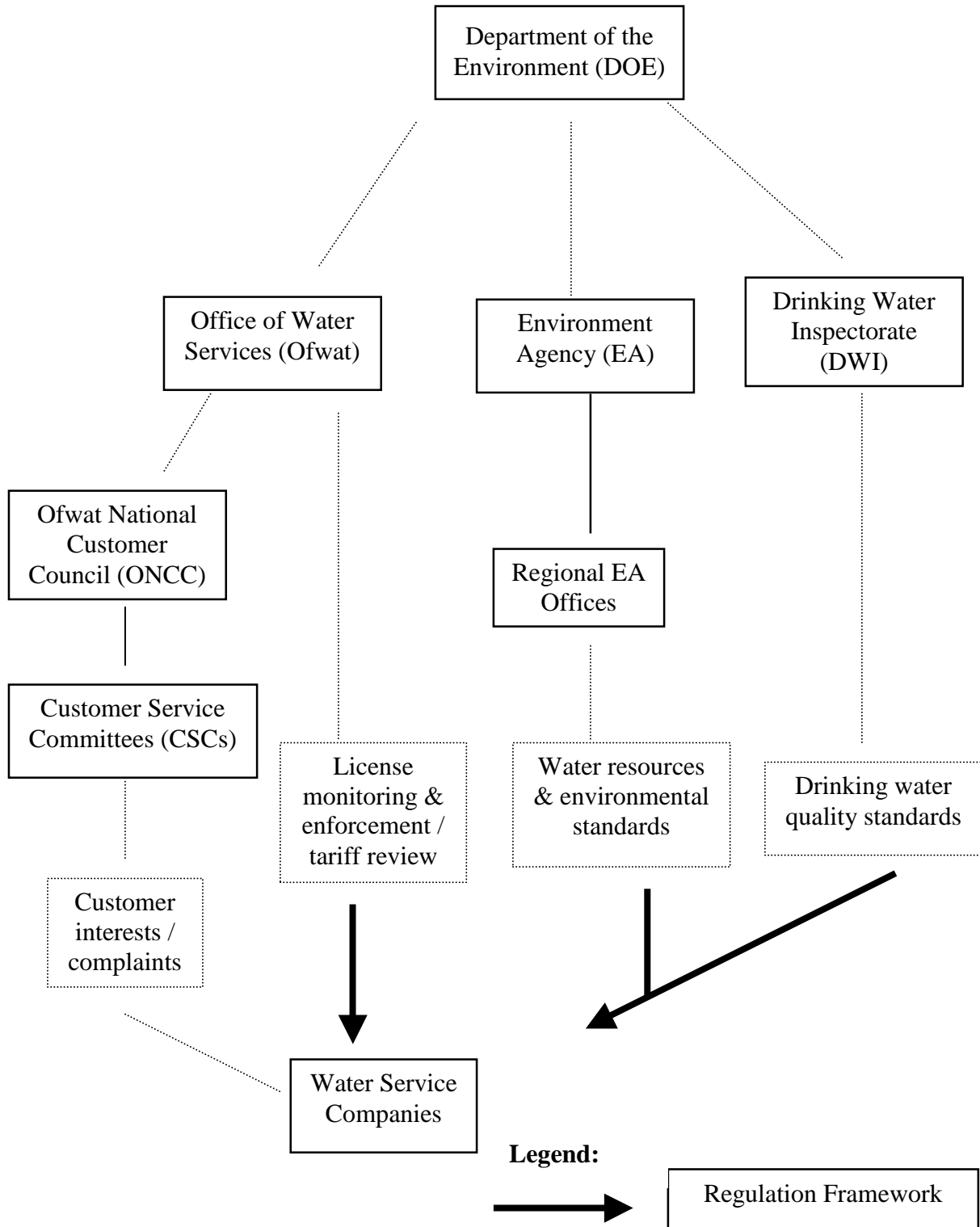
Discharging these activities brings the EA into daily contact with the water companies. On occasion, the agency has to prosecute the companies, particularly in relation to unacceptable discharges from sewage treatment works. The EA also needs to maintain a close working relationship with Ofwat, notably in relation to the environmental quality standards expected from the companies and to provide feedback on their performance. Legislation currently before Parliament is strengthening the force of environmental legislation, notably by placing new restrictions on water abstractions. This will have a knock on effect on the costs of the water companies.

This situation illustrates a concern amongst water companies that the two regulators should agree on a process for the handling of such issues. At the last price review, a difference of opinion was registered between consumers who wanted prices reduced and the EA who wanted tougher standards applied, which would result in higher company costs and prices.

Ofwat's role places such debates firmly in the public forum but how the final decision on such matters is resolved is not entirely clear.

The Drinking Water Inspectorate (DWI) is responsible for ensuring that drinking water supplies comply with national standards, which incorporate the requirements laid down in the EU Drinking Water Directive. Although the DWI relies mainly on data submitted by the water companies, it carries out extensive audits of their operations and methods and investigates customer complaints. The DWI can oblige water companies to take remedial measures where water quality fails to meet the standards. Meeting drinking water quality standards is a fundamental service obligation that has required high levels of capital investment to meet more stringent standards during the past decade.

English & Welsh Regulation Framework for Water & Sanitation Services - Year 2001



German Case Study – Key Points

Germany, which was reunified in 1990, is one of the strongest economies in Europe and has a population of about 82 million.

The coverage and quality of its water and sanitation service provision is high and comprehensive environmental protection measures are rigorously enforced.

The price of its water services is among the highest in the world. This reflects its high standards funded through full economic tariffs. There is also a growing view that **there is scope for a higher level of productivity in the German water industry.**

Water and sanitation services are predominantly run by the public sector and its organization is rooted in the German administrative system. This is hierarchical based on country, state and municipalities. Legislation, strategy, and controls come from above but the management of ‘the vital needs of the community’ is vested with the municipalities.

There are over 15,000 different management units providing water and sanitation services. Some of them are integrated with other services such as gas and electricity. There are several forms of provider ranging from municipal departments and public-controlled companies to joint ventures, outsourcing and more recently, management concessions to private companies. The level of private management is about 30% in the water supply sector and 10% in wastewater.

The route for private companies to enter the market is through a joint venture or concession agreement with the local municipality. Such agreements exist in several German cities but there is some evidence that they are over prescriptive and thus limit the scope for innovation and potential productivity improvements.

Economic regulation is also carried out at municipality level where it is integrated within the overall management activities; tariff levels are approved through the local democratic process. Regulatory decision-making is constrained by the traditional approach to public service management and its constitutional link with the administrative and democratic processes. Also, the **municipal regulators have little opportunity to use company comparisons and yardsticks to enforce greater value for money in service provision by the operating companies.**

Environmental regulation is rigorous and effectively enforced, primarily at municipality level.

Background

Germany is located in the heart of Europe having reunified the former West and East sectors of the country in 1990. The population of the country is estimated at 82 million with a population density of some 230 persons per sq km. The capital city, Berlin, has a population of some 3.5 million and there are several other major commercial centers. For many years Germany has been one of the strongest economies in Europe, with a GDP per capita of US\$25,350 in 1999.

In Germany water is regarded as a common resource and its management is subject to collective and democratic decision making. These powers are divided between the federal parliament (Bundestag), the 16 federal states (Länder), and the local authorities (cities, towns, and rural districts) known as municipalities (Kommunen). As a general rule, framework legislation is enacted at the federal level and this is given greater detail by each state in a manner appropriate to its area. The municipalities are responsible within this structure for the provision of vital services; these include water supply and sanitation services and responsibility for the local environment.

The municipal authorities have the choice of how their region's water services will be managed. It is generally the case that the water and wastewater activities are managed separately from each other on a single function basis. It is estimated that there are over 15,000 different bodies currently providing water and or wastewater services to the public in Germany. The majority of these are small municipal departments providing local mains drainage. There are some 6,500 water supply bodies of which about 1,600 account for 84% of Germany's total water revenues. Once again, the majority of the water supply utilities are small municipal administrations, many of which supply rural communities.

Water and Sanitation Services Sector

Approximately five billion cubic meters of water is abstracted for water supply per year in Germany; of which a little over four billion cubic meters is consumed by domestic and trade users. Industrial consumption accounts for about one billion cubic meters. About 64% of abstraction is from groundwater supplies; of the remainder 9% is from springs and 27% from surface water. Water abstraction in Germany represents about 23% of the total annual availability.

Some of the groundwater sources are polluted by nitrates from agricultural sources and their removal is a current priority requiring major investment. Some of the surface waters are below national standards, especially in the new states where industrial pollution has been severe in past years. In addition to nutrients, there are problems with levels of many metals and heavy metals, as well as solvents and pH levels. Water treatment and the management of water resources are therefore likely to be significant areas for water sector investment.

With regard to distribution networks, considerable investment is also required across the whole country as a result of the ageing pipe network. Leakage is estimated to account for 9.1% of the total water delivery; this figure ranks among the lowest in Europe. However, considerable investment is currently being directed at replacing large portions of the delivery network and detecting and fixing faulty networks. It is believed that the total leakage rate can be reduced to 8% by 2005.

Germany has one of the highest sewerage connection rates in Europe, with over 92% of the population being connected to mains sewers. However, service coverage varies somewhat between the old Western states and the new states. Ninety percent of the population of the old states is now served by sewage treatment works, with secondary or even tertiary treatment facilities and advanced sludge treatment works. In the new states connection rates are somewhat lower and are likely to require additional investment over the next few years.

In almost all European countries, the traditional solution to wastewater treatment problems has been to treat effluents at the end of the process, before discharging to a receiving water body. However, the constant tightening of German environmental regulations in recent years and the relatively high water supply charges and effluent disposal costs, has seen the emergence of a trend in Germany to reduce water consumption, clean up processes, and recycle or re-use wastewater.

According to Vivendi Environment (2000) the German water industry requires investment over the next five years amounting to about DM160 billion. Driven by the need to comply with the European Water Directive and to renew networks, this level of investment will require a quadrupling of current investment levels. There is a perceived inability for municipal budgets to be able to stand this as well as a lack of administrative capacity.

Organization Structure

The basic laws of the country determine where administrative responsibilities lie in terms of the hierarchy of country, state and municipality. The key legislation relating to water supply (and sewage disposal) is the Federal Water Act of 1957, amended in 1996. This provides the framework legislation on which state laws are based. Federal law stipulates that water has to be managed in such a way that serves the public interest and it lays down basic provisions concerning the management of water in terms of quantity and quality. Conditions of service are laid down by the law and can be enforced through the courts.

The federal law provides a legal framework for the states to follow in respect of water resource management. They implement these laws and reinforce them if desired. The states regulate the ownership, supervision and maintenance of water resources, licensing and control, and procedures for the use of water. Drinking water quality and sewage treatment requirements are also laid down by the law and administered by the states.

The municipalities are responsible for the provision of water and sanitation services. Their central objective is to provide secure and reasonably priced water supplies. They are able to determine the best means of fulfilling those responsibilities, including the appropriate form of organization and management system. Each municipality has the choice of taking full responsibility for its own services, joining with other municipalities for combined management, or contracting services to an external utility company.

Administrative law is applicable to all direct management and multi-municipal services, while company law is applicable to concessions or other delegated management systems. Direct management systems can be either 'Regiebetriebe', where management is carried out by a department of the municipal administration, or 'Eigenbetriebe' where management is carried out through a specific body that has its own budget and management arrangements. In some cases intermunicipal associations (Zweckverbände) are formed by groups of local authorities and other corporations under administrative law. All these forms of management are subject to local political scrutiny and controls.

In addition to the Intermunicipal Associations, a number of Water and Ground Associations (Wasser und Bodenverbände) exist. They are responsible for a wide range of tasks relating to water and are generally responsible for water catchments, which often extend across administrative boundaries. In many cases they provide water to the municipalities that are, in turn, responsible for supplying customers.

Service companies subject to company law include private companies, municipal enterprises and mixed-ownership companies, where the municipality and the company are both responsible for the service, with management being carried out solely by the company. This is a delegated management, or concessionary, system whereby the company owns all the facilities. A balance is achieved whereby management can be carried out according to commercial and economic criteria but with democratic control continuing to be exercised over

strategic decisions. Approximately 31% of the population of Germany is served by companies under private law, with the majority of these being public or mixed companies.

Municipal responsibility for water and sanitation services provision is currently reflected in a fragmented industry structure. Many of the smaller local authorities lack the skills necessary to plan and supervise public water supply and many observers expect that the number of companies will reduce significantly over the next few years.

With regard to wastewater services, all management duties have historically been carried out directly by the municipalities and local communities, with the law restricting any opportunities for delegation. Across much of Germany it has therefore been the case that water supply services have been supplied separately to wastewater treatment services. However, commercial considerations are leading to new structures and there is a trend towards combining facilities in the supply and disposal sectors.

In many of the German cities, water and sanitation services are organized together with other public services such as electricity and gas supply, district heating and public transport, in horizontally integrated municipal enterprises. In many cases this has resulted in some cross subsidization of the water sector.

Rostock was the first town in Germany to entrust the management of its water and wastewater services to a private company, Eurawasser, in the mid-1990s. Today, private companies provide services to some 20 million people in a sector dominated by a small number of large companies of both domestic and foreign origin. For example, the two leading French water companies, Compagnie Generale des Eaux and Suez Lyonnaise des Eaux, are both present through subsidiary companies, as well as Germany's leading energy company the RWE Group, which has recently diversified into the market. In future years the continuing need for high levels of investment to maintain the reliability and quality of supply, together with the financial restrictions of municipal operators, will further attract private companies to the sector.

Regulation Framework

An important characteristic of water management in Germany is the clear separation between state institutions with global responsibilities for water resource protection and management and the municipalities carrying out their specific water management and control functions. There is thus a strong tradition of municipal self-government, stemming from the political structure, which is reflected in the way the local authorities apply their regulatory controls.

Economic Regulation

The economic regulation of the water and sanitation sectors in Germany is vested, along with the management responsibilities, in the municipalities. Service standards are set in conformity with Federal and State requirements and are subsequently imposed and enforced by the local authority. Companies operating under public law are subject to price control by the municipality. In the case of an independent company this control may be exercised in the form of a management contract or concession agreement.

Water tariffs and prices are not fixed by the state but are set by water suppliers together with the municipal councilors on behalf of the population of the supply area. Through political representation, water prices are thus determined by agreement between the supplier and the users. In practice, this means that the municipal councils, who are usually the shareholder (or dominant shareholder), are controlling the level of prices. The legislation against monopoly abuse applies to water suppliers, and the Cartel authorities can investigate whether price rises are justified. The States assume this control function where water prices are set according to the principles of public law.

Tariffs in Germany must be set to comply with the 'cost recovery principle', whereby water and wastewater charges must cover the total costs to the service supplier. For water supply,

the principle of cost recovery includes four key features:

- Tariff bands are set according to the costs that the respective consumer groups impose.
- Charges are made up of two components, one that relates to infrastructure provision and the other to running costs. These must combine to reflect the actual total costs.
- The return on investment must be set at appropriate levels.
- Reserves must be established for maintenance and replacement of assets.

Subsidies are very rarely available in the German market, meaning that all fees and charges must cover all operating, maintenance, repair, and investment costs. The principle that prices should reflect the specific costs incurred by different classes of customers has led to the introduction in some towns of regressive tariffs offering a lower unit rate for large users. The introduction of separate supply contracts with very large users also follows this principle.

In their analysis of the German regulatory framework Balance and Taylor came to the following conclusions:

- *Political or legislative mandate:* It is clear that Germany does not have a distinct regulatory body or set of regulatory bodies responsible for regulating the water industry and the political or legislative mandate is therefore weak.
- *Accountability:* There is limited accountability for regulatory decisions, which are largely taken at the local level between municipalities and operators in a very closed fashion.
- *Decision-making processes:* The decision-making processes in the regulation of the water industry are extremely unclear and not even well understood by the major participants in water supply beyond negotiations with the municipality.
- *Expertise:* There is unlikely to be a high level of expertise beyond the large municipalities and even then the expertise is likely to be far higher in the Stadtwerke and the large companies. There is believed to be limited expertise in the Cartel Authorities/Monopoly Boards to deal with water matters.
- *Summary:* In summary, the legitimacy of the regulatory regime of the German water industry is poor as measured against our criteria. This is despite little in the way of adverse perceptions from stakeholders, but perhaps this is because of the lack of attention given to this issue in Germany. While decision-making is localized, and as such water users and citizens can exert influence, there is virtually no explicit regulation or clear accountability for decision-making.

The same observers noted that the highly legalistic approach found in Germany results in contracts for delegated service provision to the private sector allowing much less room for re-negotiation than, for example, in France. Companies have neither the regulatory pressures (or incentives) to become efficient, nor do they have to compete for the market. They also suggest that in the main case where private sector participation has occurred, namely Berlin, heavy restrictions were placed on the company preventing a number of efficiencies from being realized.

The strong institutional influence leads to management responsibilities being conducted hand in hand with the control and protection activities that are inherent in economic regulation. Thus, tariff rules are implemented and high levels of service standard are sought within an overall enabling framework of government and community support. The common thread is that local democratic processes control both service management and regulation. Perhaps the issue for Germany is how robust and flexible can this system be in the future? Are there sufficient competitive pressures on the service bodies to ensure that value for money is being achieved in what is generally regarded as a very high standard of service provision?

Local authorities in Germany, short of cash since reunification, are realizing the importance of efficient water services management. Water experts from the World Bank on a visit to Germany in 1995 expressed surprise at the level of costs in the sector. "Despite the high technical standard of their water and sewerage systems, we were amazed there were so few signs of cost consciousness in the German water industry," remarked economist John Briscoe, World Bank water director. He particularly criticized overmanning in the 7,000 local water companies, which employ 10 people for every 10,000 sewer connections, 5 to 10 times more than in France.

It is also argued that the high costs of water supply, treatment and disposal services in Germany demonstrate the national commitment to resource preservation and the 'Polluter Pays Principle'. It is reputed that the average prices for both water and wastewater services are the highest in the world, an average of about US\$3.40 per cubic meter in 1999. The rate of increase has decelerated somewhat during the last two years, with many investment targets having been met, but resistance to the level of water prices is putting pressure on local politicians to bring them down in some areas.

There is a small but growing body of private sector participation consisting of local management and service contracts most of which remain within public sector management control. Concession contracts and public-private partnerships are developing in the German water and sanitation services sector and it is likely that further private sector growth will be managed through the concession agreement model or by joint ventures. It remains to be seen whether the present decentralized, democratic, rule-based approach towards economic regulation can provide sufficient scope for the full commercial benefits of the private sector to be achieved.

Environmental Regulation

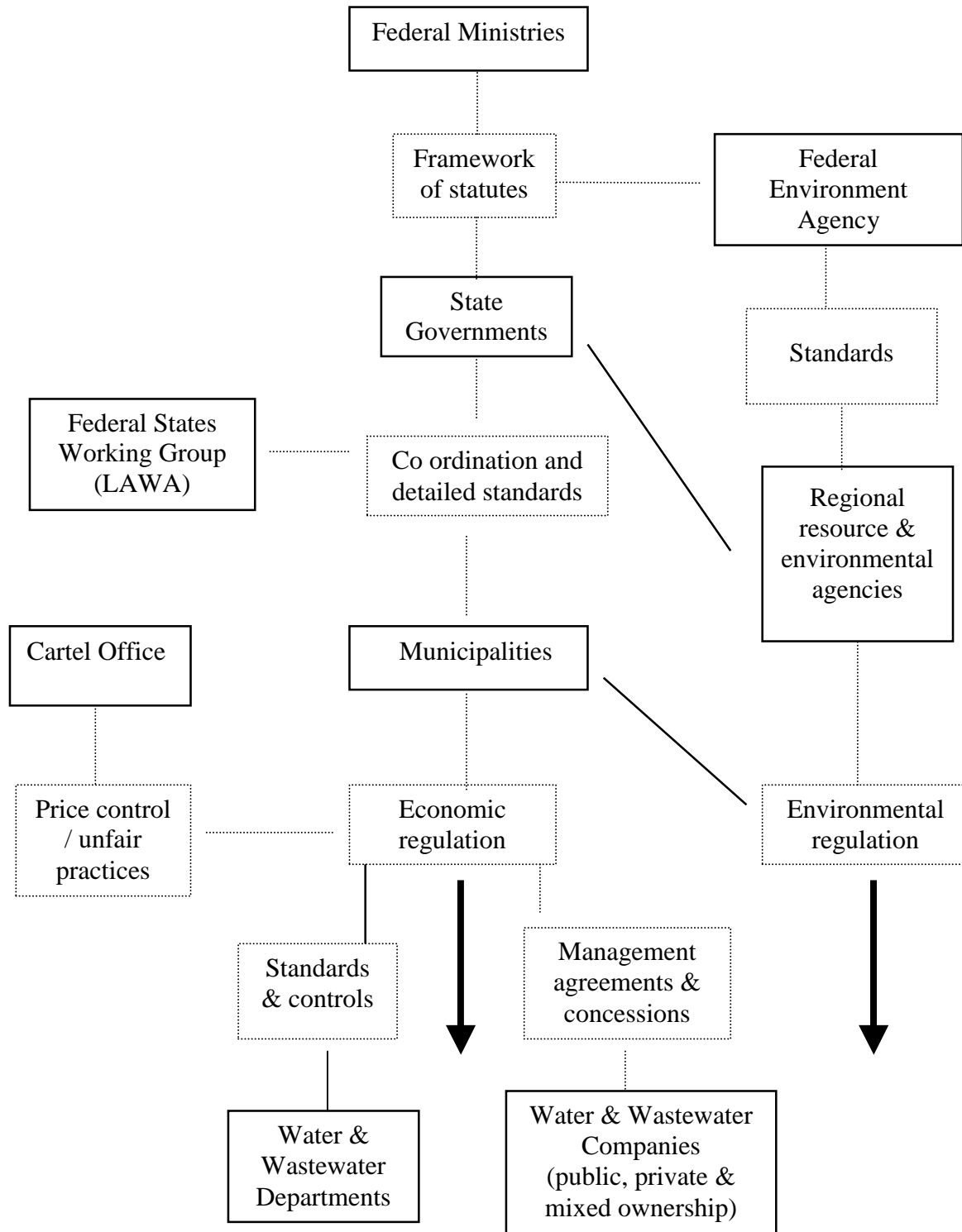
Environmental awareness is high in Germany, and it is a leading country in EU environmental policy making. Environmental legislation is formulated at Federal level and implemented and monitored at state level. Federal duties are carried out by the Federal Ministry of the Environment and regulations are enforced by the Federal Environment Agency (Umweltbundesamt) and State Environment Offices. There is a comprehensive system of licensing and control, and enforcement is generally very effective with a well-defined system of penalties.

The implementation of water resources management regulations is exclusively a matter for the states and the municipalities. The monitoring of water abstractions and effluent discharges and the collection of charges are the responsibility of the municipalities and the operators themselves, subject to checks by the responsible authority. The water management administrations of the states are integrated within their respective authorities; in the new states (former East Germany) special environmental administrations have been introduced. For the purpose of coordinating common problems and handling legislative instruments under the water acts, the State authorities working in the field of water resources management have pooled together to form the Joint Water Commission of the Federal States (LAWA).

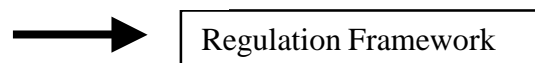
LAWA was originally set up in 1956 as an amalgamation of the ministries of the states of the Federal Republic of Germany responsible for water management and water legislation. The aim of the working group is to discuss in detail questions arising in the areas of water management and water legislation, to formulate solutions and to put forward recommendations for their implementation. In order to fulfil these objectives, LAWA has set up five permanent working parties and topic-related working groups to deal with the topics of water legislation, hydrology, inland waters and sea conservation, ecology, flood prevention, coastal protection, groundwater, water supply, municipal and industrial sewage and water polluting substances.

LAWA decisions and recommendations do not have the force of law but this cooperative approach has brought a convergence of water resource protection and management as well as common reporting procedures. The results obtained from this work form a basis for the implementation of a standardized water management system within the federal states. LAWA provides continuous and up-to-date information through a range of publications on the findings of the working groups and makes its policy documents available to all interested parties.

German Regulation Framework for Water & Sanitation Services Year 2001



Legend:



Indonesia Case Study – Key Points

Indonesia is the largest country in Southeast Asia with a population of some 210 million, projected to grow to 275 million by 2050, with over 50% living in urban areas. The country contains a number of large cities. Jakarta, with over 10 million people, is classed as a megacity.

For cities like Jakarta and Surabaya significant quantities of water are pumped from deep-wells giving rise to seawater intrusion. Aquifers are being drawn down at a faster rate than natural replenishment and pollution is occurring. Service provisions generally require extensive investment. **There is a need to raise tariff levels to economic levels, but much of the population is below the poverty line.**

There is an urgent need to address the water supply and sanitation needs of all Indonesia's cities and towns. This underlines the vital importance of resolving a satisfactory institutional framework. Indonesia is currently undergoing a difficult transition from an authoritarian and bureaucratic style of government, to one of more democratic form. **Current instability provides a difficult context for institutional change but steps must be taken in order to provide stability and investor confidence.** The water and sanitation sector in Indonesia was opened to private investors in 1994-1995 but progress has been slow. To date, only five major BOT and concession awards have been made.

There are currently no regulatory bodies for water supply and sanitation services in Indonesia but the issue is receiving increasing attention. The need to more effectively control the major concessions in Jakarta has been the main driver. **The proposed regulatory mechanism is to include sector regulators and a National Appeal Board. The proposed regulatory functions would include market entry, tariffs, services, and abuse of market power, and dispute resolution.**

The proposed establishment of such regulation at the local level raises the issue of professional know-how and available skills. **Central government should consider providing a 'regulator of regulators'** to provide training and technical support, oversight, and benchmark information to promote comparative competition and performance guidelines for the regulators themselves.

The body set up to deal with environmental issues is the Environmental Impact Management Agency (BAPEDAL), which is a non-ministerial government agency. Reporting direct to the President, its main tasks are to establish laws and procedures to protect the environment, with some preliminary activity in monitoring.

Background

Indonesia is the largest country of Southeast Asia, straddling the equator, with some 17,000 islands set out as an archipelago and measuring some 5,000 km from east to west. The population is about 210 million, and is anticipated to increase to around 275 million by the middle of the century. It is currently the fourth most populated country in the world, although the population is unevenly distributed, with 58% based on the highly fertile island of Java, and 25% on Sumatra.

Indonesia has a diverse culture as a result of the various ethnic peoples spread across its various islands. Most of the population is Muslim (88%), with the remainder largely Christian (10%). The national guiding principle involves freedom of religious expression, although religious differences have arisen recently as manifested by the unrest that has broken out in a number of places. This is partly but not wholly as a result of the current economic crisis and the transitional phase of government; some resentment, ethnic as well as religious, has been around for generations.

The climate is tropical with anti-monsoonal conditions over the west half of the country. West Java, Sumatra, and Kalimantan enjoy a relatively high rainfall, with the capital city of Jakarta having an annual precipitation of about 2,500 mm. East Indonesia is drier, 800-1,000 mm, except for Irian Jaya and neighboring islands where precipitation is also higher. There are many rivers and sub-systems throughout Indonesia; all of which carry large quantities of eroded sediments, which is added pollution in populated areas, as in Java. Much needs to be done to attend to the conservation of catchment basins and river systems.

The country contains a number of large cities, one of which, Jakarta, with over 10 million people, is classed as a megacity. Jakarta is destined, by spreading and absorbing satellite conurbations, to be the sixth largest city in the world by 2025 with a population of over 25 million. Surabaya, in East Java is also expected to become a megacity, increasing to about 12 million over the same period. There are eight other important metropolitan areas and, as elsewhere in other developing countries, there is a trend to urbanization of the population, such that 60% is expected to be living in towns or cities by the middle of the century compared with 30% now. The significance for water supply, solid waste, and wastewater treatment, as well as for the environment, is evident.

While the cities generally contain most modern conveniences, power supply and telecommunications are not readily available throughout, particularly the latter. In telecommunications, Indonesia has one of the lowest network densities in the world. Much remains to be done in transport and roads, and in the manufacture of equipment and appliances for which many basic elements are still imported. Finally, of course, much needs to be done to extend the coverage of water and sanitation services and improve standards, including those in the environment generally. The investment needed for these purposes is very large.

As is well known, Indonesia is currently undergoing a difficult transition from an authoritarian style of government to one of more democratic form. This is a fall-out from the regional crisis, which struck East and Southeast Asia in the latter half of 1997, although the pressure against the Soeharto style of government had been building up for some time and some change in political style would probably have been forced through in due course. This instability provides a difficult context for institutional change but it is quite clear that steps must be taken in order to assist in providing the stability and investor confidence that is required.

Indonesia is a country of future opportunity, with little of its human or national resources yet being utilized to a reasonable potential. Until the mid-1997 economic crisis, Indonesia had been developing at a rate of about 7% per annum for more than a decade. Then, until the middle of 2000, the business environment tended to track the political barometer, after which,

partly in frustration, activity increased due to returning consumer confidence and state enterprise. Both export growth and the balance of payments situation improved but, due to political uncertainty, the improvements are not considered sustainable without the introduction of real investment, one crucial sector being infrastructure.

In order to address the issues, there is in parallel a very large requirement for major involvement in education and training. This applies equally to the water and sanitation sector where there is a need to take forward both technical and institutional reform. The relative level of the work force, compared with regional neighbors, for instance, is poor to average, and this stems from the generally low standard of education received.

There are many factors that will influence the recovery process. Crucially, with more than half of the government budget needing to be set aside for servicing loans and debts, it is essential that the sale of assets by the Indonesian Bank Restructuring Agency meet its targets. This is becoming increasingly less likely since political interference and corruption in the courts is hindering the process. The Indonesian Bank Restructuring Agency must also continue the recovery program for the next two years. In terms of investor confidence, its performance in 2000 and for 2001 is receiving particular scrutiny. The lending agencies, in particular the International Monetary Fund (IMF) and the World Bank remain concerned over the slow pace of reform and general government ineptitude. Consequently, future financial assistance to support economic development is expected to be subject to close scrutiny, with possible delays in release being quite likely.

The Water and Sanitation Sector

Water usage

For cities like Jakarta and Surabaya or Bandung, significant quantities of water are extracted from deep-well pumping, with serious negative impacts on underground sources. Aquifers are being drawn down at a faster rate than natural replenishment and the pollutants entering from surface causes are not being adequately neutralized. At the coastal locations of Jakarta and Surabaya seawater intrusion is occurring. The situation is compounded by a considerable number of illegal or unaccounted for wells. Periodically, government leaders make statements concerning the urgent need to reduce the dependency on water supply from deep-well sources, but no effective action has emerged or is likely to in the short term.

As in most parts of the world, most of the surface water that is harnessed for use is directed towards irrigation, approaching the order of 90%. While the water usage by the population in the towns and cities will increase significantly in the years ahead, in line with steady urbanization, overall, the majority of collected surface water will still be directed towards irrigation. Again the recent introduction of regional autonomy and river basin authorities will affect the administration of supply for irrigation works as well as bulk water.

Where sewage is dealt with in towns and cities, this is by using septic tank systems, although maintenance of these is haphazard. The new town of Lippo Karawaci, some 25 km to the west of Jakarta is the first location involving the introduction of a modern sewerage system, with some 70% of accommodation covered in this way, along with provision of drinking water. Town authorities have noted a very significant drop in the numbers of vermin, cockroaches, and snakes in the area with the closed sewerage system compared with the area served by septic tanks. Initiatives to introduce a modern sewerage system to Jakarta have been discussed but the government still places the treatment of wastewater and sewerage some way down its list of priorities. The island of Bali, with its high tourist potential, is looking to deal with sewerage in a modern manner, possibly with Japanese funding.

The question of urbanization should attract urgent attention. Today's urban population represents about one third of the total Indonesian population of about 210 million. In 25 years this total is expected to be in the order of 250 million or more, with over 50% living in urban

locations. This translates to there being a further 60 million urban dwellers and highlights the need for planning immediately the water supply and sanitation needs of all Indonesia's cities and towns. It also underlines the vital importance of addressing and resolving as quickly as possible a satisfactory institutional framework for this purpose in line with the principles and implementation of regional autonomy.

Institutional arrangements

Institutional factors have constituted a major constraint on effective water and sanitation management in Indonesia. Inter-governmental relations have been characterized by a strong control from central government. This has created a bureaucratic culture, which is reflected in long chains of command in the organization structure with decisions dominated from the center. Excessive reliance on overextended government agencies and the complexity of institutional arrangements in water supply have resulted in responsibilities that are unclear and confused. Management of the services is fragmented among many ministries and agencies that do not communicate with each other. As a result, institutional arrangements are complex and unclear.

Seven different government ministries are involved in the abstraction and use of water in Indonesia, depending on the source of supply. Some rationalization of this situation is now being addressed by government and through on-going technical assistance but changes are not expected to be in place quickly. The two significant issues that will have an impact concern the introduction of regional autonomy and a proposal to handle water issues through river basin authorities, some seven in number. This latter proposal is not finding favor with district authorities, which feel a threat to current autonomy arrangements.

The ministry undergoing the biggest changes is the former Ministry of Public Works, now the Ministry of Human Settlements and Regional Development. The new ministry includes all the old public works functions, including water resource and systems planning, but since January 2001 its implementation function has been passed to the regional district authorities as part of the process of decentralization. In the past, provincial and district affairs came under the jurisdiction of the Ministry of Home Affairs, which had a major say in rural water issues. In many cases this led to a conflict of interests and rivalry with Public Works regional offices. Under the new arrangements the role of both ministries becomes an advisory one.

Although the policy laws are now in place the details for their implementation – who does what – have barely been examined. A muddled transition of two to three years is expected, with better-organized and more aggressive districts pushing ahead and setting a pattern in their favor which, according to rulings of the lower house of parliament, will stand. A major difficulty that has not been addressed concerns the borrowing of money for infrastructure projects and the question of sovereign guarantees.

Water supply throughout Indonesia is handled by some 307 district water authorities, Perusahaan Daerah Air Minum (PDAMs). Seventy of the PDAMs serve populations in excess of 100,000 and 150 serve between 20,000 to 100,000 people. Most of these were declining in efficiency before the regional economic crisis struck in 1997. Since then almost all of them have become technically bankrupt with operations continuing at a bare minimum of maintenance. There is a desperate need to raise tariff levels to reasonable economic levels, but the issue is highly charged politically since much of the population is below the poverty line. This dilemma is only being addressed in a few situations, notably where there is local will and potential ability to engage the private sector.

The water and wastewater sector in Indonesia was opened to private investors in 1994-1995 but progress has generally been slow. To date, only five major BOT and concession awards have been made. Technical assistance project work, underwritten by bilateral or multilateral lending agencies, has identified a number of situations where private sector participation could be introduced. However, many of the projects are too small to interest the

main international utilities, assuming that the various risks can be fairly apportioned and depoliticized, and there is a lack of domestic companies with the skills required to undertake the work.

Regulation Framework

At this time there are no regulatory bodies for water supply and sanitation services established in Indonesia although the issue is currently receiving increasing attention. The need to control the major concessions in Jakarta more effectively has been the main driver for this. The proposed regulatory mechanism to be introduced for all infrastructure sectors is to consist of three main elements, namely: sector regulators, a National Appeal Board, and the central and regional governments. The proposed regulatory functions would deal with market entry, tariffs, services, abuse of market power, and dispute resolution.

The role of the central and regional governments is to formulate public policies that are binding on the sector regulators and the National Appeal Board, and to act on the decisions of the regulators. In the water and wastewater sector this will include resource planning, overseeing contract agreements and the state-owned enterprises, and the ratification of tariff decisions. Appeals against the decisions of the sector regulators will be heard by the National Appeal Board, with ultimate referral to the courts.

The new arrangements also make specific provision for community involvement that is becoming increasingly important in Indonesia. Non government organizations (NGOs), water users, and local people can maintain a dialogue with the sector regulator and bring matters such as breach of service obligations and abuse of monopoly power to his attention. They can also provide information directly into the proceedings of the sector regulator and the Appeal Board.

The role of the sector regulators is to make regulatory decisions within the framework of Government policy. This will include making recommendations on contractual agreements, taking tariff decisions, conducting reviews and hearings into customer complaints, and ruling on service obligations, abuses of monopoly power and disputes. Given that water and sanitation services in Indonesia are a local government responsibility, regulation at the local level is deemed appropriate. It is also considered that the establishment of new institutions is likely to be easier at this level.

There are, however, genuine concerns about the availability of local capacity in terms of resources and skills, and the potential danger of regulator ‘capture’ by political interests or the private sector companies. Under an ADB project for a small concession for the district of Weru in W. Java, one aspect of the project brief has been the setting up of a regulatory body. The provisional members of that committee are the Speaker in the District Parliament, a member of the local Chamber of Commerce, a member of the National Water body, a local community representative, and a member of the consumers association.

A test for the new institutional framework will be the extent to which the sector regulators are able to take an independent and impartial position in making their decisions. Local regulators will also be constrained by the lack of access to reliable comparative competition information, and the potential difficulties of knowing about external issues and costs affecting surrounding but independent jurisdictions.

In order to accommodate the new regulatory framework, local regulation for large concessions like Jakarta and interim regional regulators to cover the smaller cooperation agreements might provide the best transitional arrangements. As private enterprise becomes more widespread, further regulatory bodies can be established in the local sectors. Whatever approach is adopted, central government should consider providing a ‘regulator of regulators’ to provide training and technical support, oversight and technical advice, and benchmark information to promote comparative competition and performance guidelines for the regulators themselves.

Jakarta

Recent reports and papers have particularly highlighted the need for a regulation body for the Jakarta water supply and distribution concessions managed by Thames Water and Lyonnaise des Eaux. In these concessions, the original indigenous water supplier, Pam Jaya, is in the position of taking part of the supply responsibility and also acting for the client, the city government (DKI). While it is acknowledged that this is an untenable position, the issue has yet to be resolved satisfactorily.

Discussion within government is taking place over the appropriate form and membership of a regulatory body for Jakarta, with reference to consultancy work funded by the aid agencies. The World Bank report by NERA recommends that an independent regulatory body should be set up to exercise powers and functions given under the cooperation agreements; this means that Pam Jaya would no longer have a role in the monitoring and enforcement of the cooperation agreements. Pam Jaya's regulatory responsibilities would transfer to the city government (DKI), which is consistent with a future role for Pam Jaya as a government-owned enterprise with the ability to develop business interests in related markets. This could include taking a direct equity stake in the concession business in Jakarta.

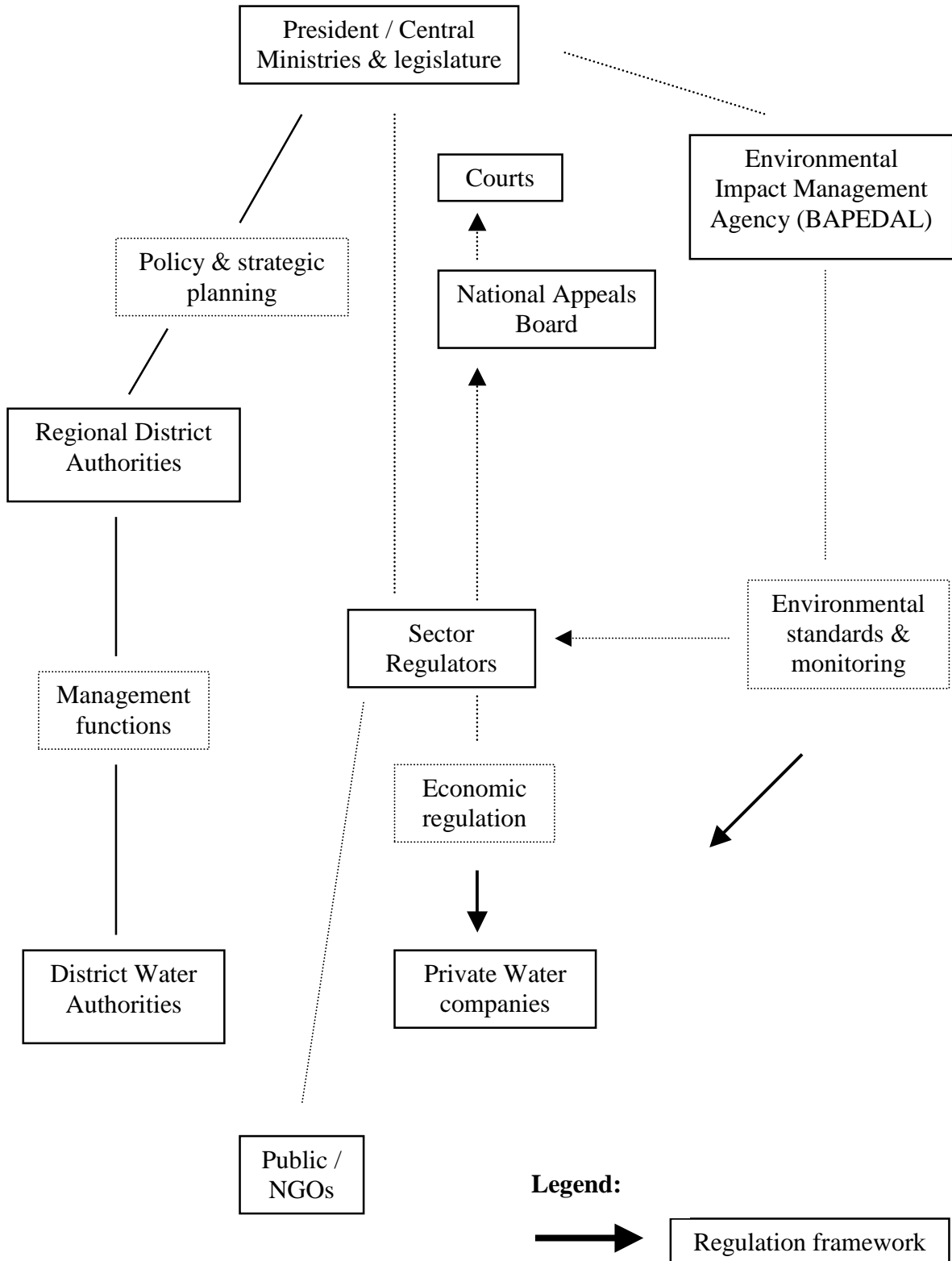
According to the report the new regulatory body would "take responsibility for all monitoring and enforcement powers and functions.... As soon as possible thereafter and, if possible, at the same time, the regulatory body should also be given the power to set water tariffs to final customers, and approve the investment plan of the second party (the concessionaires). This additional step would cause both the profile and the perceived authority of the regulatory body to increase, and should be taken once the regulatory body has been established and developed some expertise, as soon as stakeholders have developed confidence in the new arrangements, and once the political and economic situation in Indonesia has stabilized."

Environmental considerations

In 1993 the Government stipulated that the development of Indonesia should be based on the concept of sustainable development and environmental protection. The body set up to deal with environmental issues is the Environmental Impact Management Agency (BAPEDAL), which is a non-ministerial government agency, reporting direct to the President. Its main tasks to date have been to establish laws and procedures to protect the environment, with some preliminary activity in monitoring. This latter element of BAPEDAL's responsibility is still very much in its infancy and much remains to be done. The skills base is low and the training tasks ahead are considerable.

The importance of the environment and its protection are increasingly recognized by government and some elements of the private sector but other economic imperatives generally take precedence in decision making at this time. It is to be hoped that the right balance of economic need and environmental protection can be achieved as this decade progresses.

Indonesian Regulation Framework for Water & Sanitation Services Year 2001 – proposed arrangements



Italy Case Study – Key Points

Italy has a population of 58 million of whom 67% live in urban areas; Rome is the largest city with a population of 2.7 million. It is a wealthy country with a per capita GDP of US\$21,500.

The Italian political situation has been fluid for many decades, with nearly 50 governments since 1945. The country is characterized by strong regional government and within that by provincial governments.

A high proportion of the population has access to a mains water supply but there are problems both with regard to the quality and the security of those supplies. An estimated 80% of the population has access to a sewerage system but the proportion of sewage receiving effective treatment is only about 50%. **It is increasingly being recognized that the water and sanitation services require substantial investment in infrastructure and an accompanying tightening of environmental controls.**

The Italian Government is increasingly turning to privatization as a way of raising finance and removing bureaucracy from the business environment. There is resistance to privatization in the water industry, but it is being regarded as necessary in order to finance the huge bill for bringing Italy in line with EU water and waste directives.

At the present, the Italian water market is largely self-regulated by the vast number of municipal water entities. The 1994 Galli Law paved the way for change. It requires the grouping of the full water cycle, from the collection of water at source to purification, distribution and waste disposal, into one single management structure for every catchment area (ATO). It separates the ownership from the management of the services and defines optimal basins in which the integrated water cycle can only be operated by one entity.

Regulation would be undertaken by an area authority in the ATO. Its responsibilities would include letting and managing the concession, preparing an area plan to include reference to future service standards and investment requirements, and determining appropriate tariffs on the basis of a price cap system. Progress towards implementation has been very slow, hindered by inertia on the part of many local authorities and opposition from the existing municipal utilities. The issue is one of political will. At present vested interests are delaying progress.

Regional governments manage environmental controls and area health authorities oversee water quality.

Background

Italy is the fourth largest economy in the EU, with a population of 58 million of whom 67% live in urban areas. It has a long coastline projecting into the Mediterranean Sea and enjoys a benign climate. Rome is the largest city with a population of 2.7 million; Milan has 1.3 million and Naples 1 million. It is a wealthy country with a per capita GDP of US\$21,500.

The system of government in Italy is similar to many other western countries, with a separate and independent judiciary. Italy has a strong tradition of local government, and the 20 regions have a high degree of autonomy and legislative powers. Each region is divided into provinces, each with its own authority. The provinces are further subdivided into municipalities.

The Italian political situation has been fluid for many decades, with nearly 50 governments since 1945. Today, many of the numerous political parties are coalescing around center left and center right political poles. The present Government is center left in persuasion. However, it has been responsible for the introduction of traditionally right-wing policies like privatization.

Italy has a dynamic private sector, with a high proportion of small and medium sized firms. Fiscal policy has become firmer and more conservative in recent years, with a tight grip on price stability. Wealth creation is focused on the north, with parts of the south suffering from high unemployment and a lack of investment.

The increasing trend towards privatization, a process began in 1992, is now offering numerous investment opportunities for foreign firms. The legal system does not pose substantial barriers to trade and 100% foreign ownership of Italian firms is allowed. The attractiveness of the country is further improved by the success of policies to remove corruption, a problem that beset Italy for decades.

The Italian Government is increasingly turning to privatization as a way of raising finance and removing bureaucracy from the business environment. Until recently, the majority of the utility sector, including water, has been in public hands. This situation is now changing as the requirement to generate capital for investment increases. There is some public resistance to privatization in the water industry but it is increasingly being regarded as necessary in order to finance the huge, EUR50 billion bill for bringing Italy in line with EU water and waste directives.

The increasing trend towards privatization of the water sector began in 1994, with the implementation of the Galli Law. This legislation provided the mechanism that would ensure that the highly fragmented water industry could amalgamate into 100 or so large ATOs, or water catchment areas. The legislation required that the whole water cycle be managed as an integrated organization and that the water areas be loosely based on natural water basins. Lack of capital in the water sector, has subsequently led to partial or full privatization in some areas, with concession and BOT projects, becoming available.

Water and Sanitation Services Sector

A high proportion of the population has access to a mains water supply but there are problems both with regard to the quality and the security of those supplies. While in the North of Italy, 8.5% of the population does not have sufficient amounts of water, this rises to 18% in central Italy, 55% on the islands, and 78% in the South. The Italian Parliament is currently examining a law proposing the reorganization of the National Water Network with special emphasis on supplying the southern parts of Italy. In total, 9.2 million people live in areas of regular water stress.

The Rivers Po, Tiber, Adige and Arno account for 40% of Italy's fresh water resources, with their basins covering 35% of the surface area and 45% of the population. These four rivers are all of poor or bad quality. The water quality in natural and man-made lakes is

generally poor. There are also ground water problems caused by the intensive use of herbicides and fertilizers and by saline intrusions into underground coastal aquifers.

An estimated 80% of the population have access to a sewerage system but although treatment standards have been improved in recent years, the proportion of sewage receiving effective treatment is only about 50%. It is increasingly being recognized that the water and sanitation services require substantial investment in infrastructure and an accompanying tightening of environmental controls.

Organization

Central Government inertia has led to a fragmented central administration of the water sector. There is a Supervising Committee for the Use of Water Resources, which is neither a fully empowered 'water authority' nor a proper executive administration. The Government itself lacks the technical means to exercise a proper administrative role and has failed to define its relationship with the Supervising Committee, while on the other hand it has been reluctant to fully empower the regional and local authorities to administer the water sector themselves.

The Italian water industry employs around 36,000 people. It is estimated that, overall, the sector suffers from a substantial financial deficit, which is accumulated at every stage of the water cycle. The main causes of this are the unsatisfactory tariff policy that has operated in the past, especially with regard to the recovery of investment costs and the extreme fragmentation of the industry.

Water supply in Italy is currently managed by a total of 8,075 municipal administrations, which work either individually or in association with other municipalities. An exception are three public utilities, the Apulian Waterworks, the Sicilian Waterworks, and the Sardinian Water Supply and Drainage, which operate large facilities for the abstraction and distribution of water. According to the figures of the association of Italian public water and gas utilities, 55% of the water is supplied by 184 municipal or co-operative waterworks and the remaining 45% is in the hands of 5,896 different public bodies.

The industry is reasonably vertically integrated, with most firms dealing directly with production, transportation and distribution. Council firms almost always deal with aqueduct, drainage, and purification services simultaneously. Municipal and private firms have often diversified into the gas and other sectors. The Italian water sector is undergoing extensive change at the present time. The 1994 Galli Law envisages that the 8,000 or so Italian water entities will be rationalized into 100-120 more manageable structures aiming at combining water provision and sewerage, and generally serving populations in excess of 300,000 each.

Many municipalities have tried to keep control of their local services, by awarding the 'concession' for water and waste to the existing municipal operator. This has been the model followed in Rome, where ACEA has been awarded a 30-year contract, and also in Genoa, where AMGA has achieved the same result. New legislation, currently going through parliament, is designed to prevent this, with all new privatization schemes being attributed to individual operators through public tenders. The situation is changing quickly and two former municipal entities have been partly privatized and several more will be in the next few years. One method of achieving this is to allow the more successful municipal entities to expand their services into other regions of the country. Another is to encourage the participation of domestic and foreign competitors to bid for concessions in the water and sanitation sector.

Private firm involvement is concentrated in a few companies. A large part of production and distribution is managed by Italgas-Eniacqua and CREA (Pesenti group). Italgas currently manages around 415 contracts, distributing about 300 million cubic meters of water to 2.7 million people. Foreign groups have recently entered the sector too, particularly through co-operation between AMGA Genova and Lyonnaise des Eaux. They are becoming more and more aggressive in the competitive bidding for licenses.

The size of the potential market in Italy is large and it is likely to become increasingly competitive in the next few years. Two thirds of the population still receive their services from the numerous municipal entities. In the affluent north, there are many areas still served by large municipal operators who are reluctant to see their services managed by foreign operators. In the south of the country large-scale investment is required in infrastructure and there will be opportunities for BOOT schemes, as well as for concessions.

Regulation Framework

The regulatory bodies for the water industry are:

- The Ministry of Public Works and under this, the Supervising Committee for the Use of Water Resources
- The Area Authority. This is a new body that was set up under the 1994 reforms and is currently being made operational. The 1994 law required the establishment of the water areas (ATOs), based on hydrological catchments. The Area Authority will have the task of co-ordinating, controlling, and defining tariffs within each ATO.
- The competent appeal bodies for disputes arising from the granting of concessions, by public bidding are, in the first instance, regional administrative tribunals, and in second instance, the ordinary law courts.

Apart from a few exceptions the move to competitive bidding has not yet occurred, so licenses are still granted by councils and provinces and not by public bidding. As a result, the competent appeals body in the second instance is the State Council. At the present time, the Italian water market is largely self-regulated by the vast number of municipal water entities.

The Galli Reforms

The 1994 Galli law (National Law No.36) paved the way for change. This is a framework law that seeks to achieve 'integrated water services'. It requires the grouping of the full water cycle, from the collection of water at source to purification, distribution and waste disposal, into one single management structure for every ATO. It separates the ownership from the management of the services and defines optimal basins in which the integrated water cycle can only be operated by one entity, thereby maximizing scale savings.

The object is to foster the development of the water service industry by encouraging a more 'entrepreneurial' approach to its management and by attracting private capital to fund the massive investments that are necessary for modernizing the sector. The operating license can be granted to either public or private firms via competitive bidding. Mixed companies are proving the most popular model with 51% of the shares remaining in the ownership of the municipality, or area authority. This situation is being challenged because the Galli Law states that the company manager cannot also be the owner of the assets.

The relationship between the owner of water industry assets and the manager of a water service is governed by the instrument of "convenzione". This is the basic document for the provision of the service and it defines the characteristics of the concession (management contract). In particular, it indicates the contract terms (rights, duties, borders, and term); control mechanisms; the quality characteristics required from the service; guarantees; and the service code (technical specifications, relationships with users, service standards). The assets (especially distribution and sewerage networks) remain public property to be operated under license for the supply of the service.

The license agreement stipulates:

- the type of firm (municipal, public, or private)
- economic and financial obligations upon management;
- the duration of the license (not more than 30 years);
- control mechanisms;

- the degree of efficiency and reliability to be ensured;
- financial guarantees;
- criteria for tariff and inflation adjustments; and
- guarantees of the quality of services (based on a 'consumer rights' list).

An area plan is to be drawn up on lines established by the regions, to help define the contents of a license. The plan identifies the investment necessary to provide a stated minimum level of service.

The new tariffs norms defined by the 1994 reforms are based on price-cap criteria. In particular, tariffs must reflect:

- the nature of resources;
- the quality of the service provided;
- investment needed for the improvement of the service;
- running costs;
- a return on investment capital; and
- productivity gains.

The tariff is defined at territorial area level (ATO). The new law encourages a reorganization of the tariff structure on a progressive and redistributive basis, there are concessions for minimal domestic consumption and for certain income groups. Unfortunately, the reorganization has moved forward very slowly and a cost-plus approach applies in many areas. Every year the old tariff is confirmed with adjustments for new investment, increased productivity, and inflation.

Implementation of Reforms

The ATOs are the 'geographical units' into which the existing utilities are to be regrouped according to their natural water basins. There are expected to be around 100 ATOs overall and each region is required to set up a number of them with some 500,000 people in each. There are two methods of doing this, consortium and convention. In the consortium arrangement, the authority, its management, and organizational structure is chosen by unanimous agreement of all the local authorities belonging to an individual ATO. In the case of a convention, the management is effectively determined by a decision of the provincial authority.

Inertia in the regions has delayed the establishment of the ATOs and the transfer of water resource management from public structures towards a more market-oriented management. By the end of 1999, all the Italian regions (with the exception of certain regions with Special Autonomy Status which were exempt) had adopted the necessary regional legislation that governs the cooperation between the local entities for the establishment and functioning of the ATOs. In spite of this, there are considerable delays in the drafting of the actual cooperation agreements within the defined ATOs. In many cases, the governing bodies have not been established, often due to conflicts among individual municipalities belonging to the same ATO.

Regional and local authorities are also failing to provide themselves with the technical capabilities necessary for the control and comparative analyses of the new operators. At the present time (February 2001) many ATO authorities have not yet assumed control of water services and there is resistance from municipal entities, especially those in the major cities. The reforms have also been hindered by opposition from current operators in the water and sanitation sector, who benefit from the existing arrangements.

The Supervising Committee on the Use of Water Resources is seeking to draw a clearer picture of the current state of implementation of the Galli Law and wrote to the Italian Regional Administrations in September requesting information on their progress. The committee intends to collate a report to be submitted towards the end of the year to the Italian

Parliament. It is expected that the pace of change will increase after the forthcoming election, which is expected to generate a change of Government to one of a center right persuasion.

Countrywide, progress in implementing the reforms varies widely. Tuscany was the first region to approve the regional legislation as required by the Galli law and its experience in implementing the legislation is summarized below:

Tuscany Region

The main aspects that a region needs to address in order to implement the Galli Law are the number and form of the ATOs, and the organizational structure, powers, and responsibilities of their area authorities. These are known as Ambit Authorities in Tuscany. There are 6 ATOs in Tuscany with populations ranging from 300,000 to 1.2 million. Ambit Authorities have been established in each of them and Ambit plans are close to the final approval stage in half of them.

Two cooperation modes are defined by the regional legislation, consortium and convention. The difference mainly refers to the way the institution and the organizational structure of the Ambit Authority is set up. In Tuscany the consortium mode has been adopted, whereby the statute for the Ambit Authority and its management are chosen through unanimous agreement among all the local authorities within the ATO. In cases where the convention mode is chosen, the Provincial Authority generally determines the Ambit Authority management.

The Ambit Authority is the administrative body in charge of the planning, organization, and regulation of the Servizio Idrico Integrato (Hydrological Integrated Service) as defined by the Galli Law. The following are the main duties assigned to the Authority by the national legislation:

- Survey of existing assets,
- Safeguards for existing operators in each ATO region,
- Preparation of the technical and financial plan,
- Responsibility for personnel transfer,
- Choice of the management option, and
- Management and regulation of concessions, once awarded.

The organizational structure of the Authority is defined by the regional legislation. In most of the regions, the responsibilities for the ATOs activities are to be shared by the existing communal, provincial, and regional authorities. In Tuscany, the institution of the newly established Ambit Authorities provides truly independent regulatory bodies, as intended by the legislation.

Using the establishment of the Arrezo ATO as an example, the following process is typical of what is required.

- *Establishing the organization:* The starting point for the institution of the Ambit Authority was the appointment, on a temporary basis, of the Managing Director and the Planning Director. The first task of the appointed directors was the selection of qualified personnel currently employed within the ATO municipalities and the appointment of engineering firms to carry out the survey of the existing assets.
- *The Asset Survey:* The Tuscanian legislation imposes a 6-month deadline on the newly established Ambit Authorities to carry out the survey of all the assets managed by the existing operators. The Authority is also given the task to implement an IT system, to record and subsequently validate the survey results.

A field survey was contracted to local engineering firms to assess the performance of the distribution networks and of the treatment plants. At the same time, a desk-based activity involved the collation of the data available from the existing operators, including many small municipalities. The survey of the sewerage network gave many problems.

Often, no relevant documentation was found in the local public administration offices and at the end of the survey 532 illegal discharge points were recorded. A high number of unregistered wells were also identified where groundwater is abstracted for agricultural use, highly increasing the pollution risk for the aquifers. Hydraulic simulation was carried out to validate the survey results that were used as the base for the definition of the Ambit Plan.

- *Operational Safeguards:* The survey results are also used by the Ambit Authorities to assess the performance of the existing operators. In Tuscany, extensions of up to three years were granted to those operators who are providing an economic, efficient, and effective service.

Legislation currently before Parliament could allow up to 12 years extension to the current concessions. There is a view that this legislation would support the interests of the biggest municipalities and would severely weaken the overall progress of the reform process defined by the Galli Law.

- *The Ambit Plan:* Based on the survey results, the technical and financial plan was developed with reference to the achievement of the qualitative and quantitative standards as set by the European Directives for drinking water and wastewater. Investment projections were made and input to a standard model, approved by the Public Work Ministry, which is used to calculate the starting tariff and the maximum yearly increase. Operational costs, capital depreciation, and capital remuneration are the three parameters included in the model.

The Ambit Plan also confirmed the organizational framework for future operations and this formed the basis for the number and skills of the personnel to be transferred from the old to the new operators

- *Management Option:* In Tuscany, the mixed (public/private) company option was chosen. The private partner will be responsible for the company management while the Ambit Authority will control the Ambit Plan guidelines. Critics point out that this puts the Ambit Authority into the position of majority shareholder and controller at the same time. The alternative of awarding service concessions to private companies is not excluded but the law requires detailed explanations sustaining the choice.
- *Bid management:* The Arezzo bid assessment referred to three main parameters:
 - Integrated water cycle management experience.
 - Improvement proposal to the Ambit Plan.
 - Financial solution to meet the investment required by the Ambit Plan.

Arthur Andersen was chosen by the Ambit Authority to carry out the bids proposal assessment. The French company, Lyonnaise des Eaux, won the bid for the integrated water service together with AMGA Genova. This was the first contract awarded following the enactment of the law that allowed ‘business partnerships’ between public authorities and private companies. The newly established company was contracted to manage Arezzo ATO for the next 25 years. Interestingly, the Tuscan courts subsequently ruled that it was illegal for a municipal company from one area to bid for work in another company’s area and cancelled the concession. This judgement has been challenged and considerable confusion reigns at the moment.

Comment

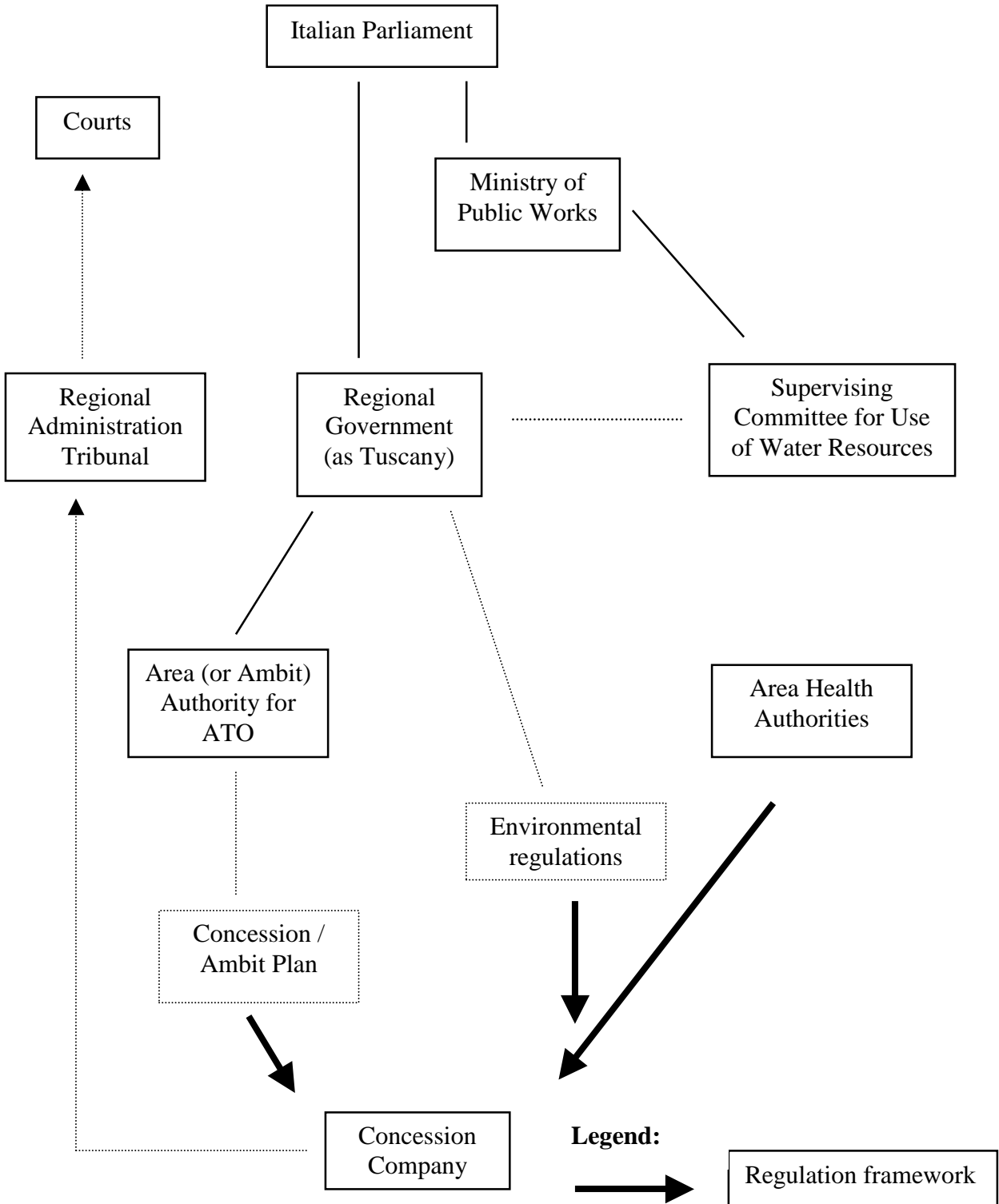
The Galli Law provides the framework and the tools for effective economic regulation at the regional/ATO level. The issue is whether there is the political will to make it work effectively and this has not been the case until recently. A critical aspect will be the degree of independence and objectivity that the Area (Ambit) Authorities can bring to their role. One obvious area of concern is their linkage to the concession companies through shareholdings, as evidenced in the Tuscany example. There is a distinct risk of regulatory capture by the

operating companies. Each region should give consideration to providing positive support and expertise for its constituent regulatory bodies.

Environmental Regulation

There are two other forms of regulation of the water industry. The public health authorities carry out water quality monitoring; there is no national equivalent of the DWI in England and Wales. Environment regulation in Italy is carried out at regional level although regulations are not well enforced. These functions are separate from and outside of the ATO authority.

Italian Regulation Framework for Water & Sanitation Services (Based on Galli Law model)



Poland Case Study – Key Points

Poland is one of Europe's largest countries with a population of about 40 million people. Warsaw is the capital City with over 1.6 million people.

In the 1990s Poland emerged as one of the strongest countries in the former Eastern Block following fundamental changes to its political and economic systems. The transition from the socialist political system to a democratic one and from a centrally planned economy to a market economy led to significant changes in the water and sanitation sector.

The water and wastewater sector has inherited a backlog of investments resulting in **high levels of environmental pollution and poor standards of customer service**. Further, the introduction of European standards in anticipation of Poland's accession to the European Union is placing massive investment demands on the industry.

Legislation introduced in 1990 shifted ownership of and responsibility for municipal water and wastewater utilities from the State to the local municipalities, carrying responsibility for organization and management, financing investment projects, and determining prices and service levels.

Approximately 300 water and wastewater utilities serve cities and towns in Poland. In most of the larger municipalities they are organized as commercial code companies that have a measure of financial independence; in others they are managed as in-house units.

Economic regulation is undertaken by the municipalities, largely based on their control as owners. Decisions on water pricing are commonly based on short-term political criteria and do not reflect the economic costs of investing in and providing the services.

The option of attracting foreign funds and expertise through the award of concessions is actively under consideration. In recognition of the need for greater stability and investor confidence, the Office of Housing and Urban Development (UMiRM) has developed guidance in the form of standards to improve the system of pricing and economic regulation.

A comprehensive package of economic regulation measures is currently passing into legislation. The municipalities remain responsible for implementing them and it remains to be seen how effective they can be in providing a consistent regulatory framework and the necessary investor confidence alongside wider political pressures.

Environmental regulation measures are being revised concurrently.

Background

With a population of close to 40 million and a land area of 313,000 sq km, Poland is one of Europe's largest countries. Approximately 62% of the populations live in the urban areas. There are 42 cities with a population of over 100,000. Warsaw, the capital, is by far the largest city with a population of over 1.6 million.

Poland is emerging as one of the strongest economies of the former Eastern Bloc. From the start of market reforms to July 2000, foreign companies invested US\$43 billion. In 1998 alone US\$10 billion was invested. Two thirds of foreign investment has come from European countries. Gross Domestic Product per capita increased by 25% from 1990 to 1998 (US\$3,960) and unemployment fell steadily to a level of 10.4% in 1998. There has been an upturn in employment to 15% over the last two years reflecting the restructuring pressures in the economy and the rigidity of the Polish labor market.

Over the past decade Poland's political and economic systems have undergone fundamental changes. The transition from the socialist political system to a democratic one and from a centrally planned economy to a market economy have led to significant changes in the municipal water and wastewater sector. The old system left a serious backlog of investments in the water sector, which resulted in degradation of the environment and deterioration of customer service. Further, the introduction of European standards for environment and commerce in anticipation of Poland's accession to the European Union is placing increasing demands on the industry.

Legislation introduced in 1990 shifted ownership of and responsibility for municipal water and wastewater utilities to the local governments, making them responsible for organization and management, approving and financing investment projects, and determining prices and service levels. Water and wastewater utilities have been introducing new management and information systems to respond to increasing pressure from local officials for accountability and from customers for improved service.

New mechanisms for funding and planning major projects have also been introduced. Many water and wastewater projects have been financed with preferential loans from the National and Regional Environmental Funds, which use funds generated from environmental impact fees and fines to support projects that will improve the environment. Foreign donor agencies have provided support to a number of water and wastewater improvement projects. Domestic and foreign commercial lenders are increasingly involved in financing municipal and utility investments and private investors are entering the market.

Poland's water and wastewater sector needs a significant infusion of private capital - both foreign and domestic - in order to upgrade facilities to meet the demands for improving the environment, responding to demands for improved customer service, and providing the foundation for economic development. The World Bank estimates that US\$25 billion to US\$40 billion of investment is required to bring the water sector up to EU environmental standards.

Meeting European standards is a major priority and steps are being taken to make the water and wastewater sector more attractive for investors by developing laws and standards that allow for full cost recovery through prices and lay the foundation for improving economic regulation of the sector. These activities are being carried out by the Office of Housing and Urban Development (UMiRM). A Standards Board for Pricing, Service Availability and Economic Regulation of the Water and Wastewater Sector was formed in 1997 for the purpose of developing standards and recommending legislative change.

The Water and Sanitation Services Sector

The municipal services sector in Poland is primarily responsible for water and wastewater utilities. It also carries out housing stock management, district heating, ensuring cleanliness and order, green areas, roads and municipal transport.

The socialist system of government in Poland left the water and wastewater sector in a poor shape. The primary goal of the central planning system was development of industry and little priority was given to improving the level of service provided to citizens or protecting the environment. The quality of water delivered through the central water system was generally adequate but high water losses, energy inefficiency, and pressure problems characterized the water and wastewater systems. Wastewater treatment was inadequate or non-existent, even in the largest cities. In 1997 over 60% of wastewater discharged was not biologically treated, 18% had no treatment at all.

Most utilities use non-uniform volume tariffs, whereby billing is based on consumption during the preceding year. The tariffs are set according to a cost-based formula, which includes only expenditures for operating and maintenance of infrastructure. Under the current legal framework it is normally impossible to include capital investment costs and prices per cubic meter for water and wastewater service in Poland have been much lower than in Western Europe.

Water resources

Poland is one of the poorest countries in Europe with regard to the availability of water resources. Currently, groundwater constitutes the main source of water for municipal supply, providing about 60% of the total volume of water abstracted. Poland experienced periods of drought throughout most of the 1980s and into the early 1990s, which highlighted their water resource problems.

Most of Poland's water resources have been heavily polluted from untreated or insufficiently treated domestic municipal and industrial wastewater discharge and agricultural sources. Groundwater resources have become progressively more polluted as untreated wastewater, drainage from waste dumps, and agricultural chemicals seep into the groundwater table. The quality of groundwater is generally higher than that of surface waters, although a certain percentage of these waters (some 17%) are significantly polluted.

Urban water and wastewater utilities

In urban areas, almost all residents are connected to central water supply systems. Coverage for wastewater collection lags behind that for water supply and much of the wastewater collected is not adequately treated or not treated at all prior to disposal. The construction of municipal wastewater treatment plants is a priority in the National Environment Policy.

In 1990, as a part of the sweeping political transformation in Poland, responsibility for municipal water and wastewater utilities was transferred from the central government to local government. Municipalities had to decide how best to organize and manage the utilities, plan and implement investment projects, raise resources for funding those projects, and regulate prices and service.

Approximately 300 water and wastewater utilities serve cities and towns in Poland. In most of the larger municipalities they are organized as commercial code companies (78%), in others they are managed as in-house budgetary enterprises (12%). Where a single water and wastewater utility serves multiple municipalities, municipal associations are often formed. The State retains ownership of some 6% of the utilities.

Utilities organized as commercial code companies - either as joint stock or limited liability companies - have legal identity independent of the municipality and may enter into contracts and borrow funds for investment. These firms can recover depreciation and profit in prices and can reserve funds for investment. Most municipalities retain ownership of the utilities but there has been a trend towards commercialization, creating greater possibilities for water and wastewater utilities to become financially viable.

Rural water and wastewater systems

Approximately 60% of Poland's 1,613 rural municipalities have water systems and some also have wastewater systems. Polish law allows for a special form of water and wastewater utility, the water company "spolka wodna", which are granted special tax privileges. This form is most commonly used in rural areas but it is not uncommon to find water and wastewater services provided by multifunctional units, which also provide other municipal services such as transport, solid waste, town cleaning, road maintenance, and housing.

Central water supply in rural areas is much less extensive and wastewater collection systems are almost non-existent. The national government placed a priority on extending coverage in rural areas following droughts in the 1980s and early 1990s. With World Bank assistance the water network has significantly increased in recent years. There is an increasing demand for extension of wastewater networks to comply with European standards, which require wastewater collection systems in villages with population of more than 2000.

Investment Funding

The European Union has estimated that the Polish water and wastewater sector will need to attract huge amounts of investment in order to achieve European standards. The sources for financing municipal services infrastructure in Poland include the National and Regional Funds for Environmental Protection, commercial banks, leasing, investment funds and foreign donor assistance. Due to technological, legal and financial barriers, the level of foreign investment in the water and wastewater sector has been a very small share of the total investment in the municipal services.

The European Union has introduced a new fund for development of ecological and transport infrastructure in Poland and other countries applying for membership. In Poland up to EUR380 million may be spent prior to accession, this will be administered through the National Fund for Environmental Protection and Water Resources.

Since responsibility for water and wastewater utilities was transferred to the local authorities, funding for investment projects is no longer provided from the central budget. Most utilities in Poland have not yet achieved financial self-sufficiency and, therefore, are unable to finance major investment projects from their own resources. In many cases local municipalities have other priorities for budgetary funds, insufficient funds or debt capacity, and major water and wastewater investment projects have been deferred to future years.

The primary source of funding for major water and wastewater investment projects over the past decade has been the National and Regional Funds for Environmental Protection and Water Management (NFOSiGW and WFOS). These funds are partly derived from the fees for using the environment and fines imposed for violation of legal environmental protection standards, consistent with the "Polluter Pays Principle". NFOS and WFOS funding for water and wastewater projects are typically granted to the municipality, not directly to the utility.

Foreign donors have provided assistance in the sector, primarily in the form of technical assistance for consulting and technology transfer. World Bank has provided loans to water and wastewater utilities and grants and co-financing for extending service in rural areas. The European Bank for Reconstruction and Development is providing funds in support of privatization initiatives.

The water and wastewater sector has not received significant amounts of foreign private capital. Thus far there are only two public-private-partnerships involving a foreign partner operating in the sector. Saur Neptun Gdansk is a joint venture firm, which operates the water and wastewater utility providing service to the city of Gdansk and several adjacent municipalities. In the other case International Water has a 21% stake in AQUA SA operating in Bielsko-Biala. Other cities in Poland are in the process of evaluating privatization options (Poznan, now at an advanced stage, and Szczecin). The European Bank for Reconstruction and Development has been supporting these efforts.

Polish private participation in the sector has also been limited although there are several examples of public-private-partnerships with Polish private companies. Aquarius is a Polish company operating under a management contract to provide service in the small municipality of Piaseczno, under a similar agreement to the one in Gdansk.

Regulation Framework

Economic Regulation

There is no central regulatory body responsible for reviewing prices, appropriateness of investments, and levels of service. Responsibility for regulating the water and wastewater utilities rests with local governments. The municipality appoints the director of the water and wastewater utility, and elects most of the Supervisory Board members when the utility is a commercial code company. Decisions on water pricing are commonly based on short-term political criteria and do not reflect the economic costs of investing in and providing the services.

The Office for Protection of Competition and Consumers and the Anti-monopoly Courts may get involved in reviewing water and wastewater prices if customers complain or if there is reason to believe the monopolistic provider may be taking unfair advantage of its position on the market. Occasionally, the administrative or civil courts can review disputes between utilities and the municipality or between the utility and its customers.

In recognition of the need for greater stability and investor confidence in the sector, UMiRM has developed legislation to improve the system of pricing and economic regulation. At the same time, the Office for Protection of Competition and Consumers is working to remove barriers to competition in the market and to prevent monopolistic practices.

In 1997, UMiRM initiated the process of reform to the system of pricing and economic regulation for the water and wastewater sector in order to attract investment to the sector. First, changes were made to the ordinance on water supply and wastewater disposal to allow for greater recovery of investment-related costs and to allow for differentiation in prices for different classes of customers based on the cost of providing service.

In order to implement more extensive reforms, UMiRM convened the Standards Board for Pricing, Service Availability and Economic Regulation of the Water and Wastewater Sector. Members of the board include representatives of the various ministries and agencies involved in regulating the sector and representatives from industry and municipal associations. The United States Agency for International Development has provided technical assistance to UMiRM and the Standards Board in this effort.

The Standards Board was assigned the task of developing a set of industry standards for calculating prices, developing service standards, and providing effective economic regulation of the sector. Further, the board was to identify changes needed in legislation in order that standards could be put into practice by utilities and municipalities and to work on disseminating the standards.

The Standards Board has developed the following standards:

- Determining revenue requirements
- Allocating costs to different classes of customers
- Designing tariffs
- Developing service standards
- Informing the public about changes in prices and levels of service
- Justifying requests for changes in tariffs
- Accounting guidelines
- Depreciation guidelines
- Developing service availability policies and related utility regulations
- Financial planning methodologies

Standard 1: Determining Revenue Requirements

In order to provide proper water and wastewater service to customers, each utility company should achieve a sufficient level of revenues for proper operation and maintenance, sustainability, and development of facilities as well as financial stability of the utility.

The standard is designed to enable utilities and their owners to attract investment from different sources, including the private sector and capital markets, and to recover related costs in utility revenues. The proposed standard shows how both capital and operating expenditures may be recovered in prices, given different forms of ownership and operation of the utility.

Standard 2: Allocation of Costs to Customers

Allocating costs is the second step in calculating prices after revenue requirements have been determined. The basic premise underlying this standard is that allocation of costs to customer classes should be fair, i.e. based on an objective technical and economic analysis. In addition, the methodologies should be practically applicable and cost-effective for utilities.

The standard prescribes technical and economic analytical methodologies and provides criteria for deciding which allocation method is appropriate.

Standard 3: Designing Tariffs

The final step in calculating prices is to design tariffs so that they generate required revenues and each group of customers pays its fair share. The way tariffs are structured can influence the behavior of utility customers and, therefore, can help the community and the utility achieve certain goals. Certain tariff structures do a better job of recovering costs from customers in a way that truly reflects the demands they place on the system. In addition, well-designed tariff structures can provide more financial stability to utilities.

The proposed standard sets out criteria for deciding which tariff structure is appropriate and showing how certain types of tariffs may be calculated.

Standard 4: The Development of Service Standards

The fourth standard defines guidelines for developing and reviewing service standards (or performance measures) for water and wastewater services. The underlying premise is that it is appropriate for economic regulators to review service standards for monopolistic providers of water and wastewater utilities in conjunction with the review of tariff changes and utility financial plans. Service standards should have a significant impact on the level of prices approved by the regulatory body. Many service and technical standards are specified by law. Local governments responsible for providing water and wastewater services should ensure monitoring and compliance with service standards.

The standard specifies areas where it is possible to identify and monitor technical and customer service requirements. It contains guidelines regarding provisions to be included in agreements between the utility and the local government, and between the utility and its customers. Finally, it identifies the responsibilities of various parties in developing service standards and measuring and monitoring them.

Standard 5: Guidelines for Public Information

The fifth standard sets out guidelines for disseminating information about changes in tariffs and service standards. The standard provides guidance to utilities in developing and implementing an effective information policy.

Each citizen has the right to be informed about activities related to public services. Providing information properly and in a timely manner helps to enhance the credibility of the local government and the utility service provider, thereby helping to overcome obstacles to the introduction of change. When customers understand the reasons for change and know what to expect, the level of social acceptance necessary for utility development increases.

Standard 6: Information Requirements for Tariff Reviews

The economic regulator responsible for approving tariffs needs to review certain basic information, and this information should be presented by utilities in a consistent and transparent manner. The standard identifies the minimum information that should be required and includes model schedules, which should be included in the information package supporting the application for tariff change.

Standard 7: Accounting Guidelines for Water and Wastewater Utilities

Accounting records must be maintained so that they not only enable the company to comply with government reporting requirements, but also provide sufficient evidence of costs and investments to support price setting and financial planning. Reporting should facilitate decision-making and review of regulatory compliance, but should not place an unjustified burden on the utility.

Standard 8: Depreciation Guidelines

The guidelines are for water and wastewater utilities to use in calculating depreciation for pricing purposes. The basic premise underlying this standard is that depreciation expense included in prices should be sufficient to provide for replacement of existing assets or to repay principal on loans taken to finance utility investments. Further, depreciation expense for pricing purposes will not necessarily be the same as depreciation expense allowed for tax purposes.

Standard 9: Regulations on Service Availability

These guidelines are based on the principle that information about requirements for obtaining utility service should be well documented and readily available to interested parties. The availability of such information will ensure equitable treatment of all parties and will enhance utility, community, and economic development. The actual content of a particular utility's regulations will vary depending on decisions made by the local government and on local conditions and priorities for utility and community expansion and development.

Standard 10: Financial Planning Methodologies

Financial planning, incorporating prudent forward projections, is necessary in order to ensure that the utility will have adequate resources to meet its obligations to provide service to customers in the future. The financial plan is the mechanism by which utilities can determine an overall tariff policy and the need for external financing.

The standards, which were formally approved in January 2000, promote the adoption of international practices in Polish water and wastewater utilities and municipalities. They are designed to allow utilities to become financially viable, to attract capital, to promote efficiency in operations and improvement of service to customers, to provide for more consistent and predictable economic regulation, and to improve transparency and accountability.

A new act governing municipal water supply and wastewater disposal has been drafted, which incorporates the principles and major directives outlined in the standards. Throughout

1999 and 2000, members of the Standards Board have been gaining support and acceptance for the proposed legislation. In October 2000 the draft was accepted by the Council of Ministers and is currently being discussed in the Parliament. In addition, since most of what is contained in the standards can be adopted voluntarily before the proposed legislation is adopted, the Standards Board is promoting their earlier implementation by municipalities and water and wastewater utilities throughout Poland.

The objective of the new act is to achieve four general goals:

- Provide an uninterrupted supply of water with suitable quality, reliable discharge and treatment of sewage,
- Achieve the environmental conservation requirements more rapidly,
- Protect the interests of customers, and
- Improve the economic effectiveness of utilities and institutions in the sector.

The draft act contains a series of chapters:

- (i) General regulations specifying the objective and scope of the act, defining and putting in order basic terminology as well as assigning competencies to individual organs of government administration.
- (ii) The principles of water supply and sewage discharge dedicated to the principles and legal conditions of provision and cessation of services.
- (iii) The principle of issuing permits for performing collective supply of water and discharge of sewage. In general, the project assumes that the municipalities issue permits for performing collective supply of water and discharge of sewage. The application for issuing a permit is supplemented with regulations for water supply and sewage discharge specifying, among others, mutual rights and duties of the parties, minimum level of the services provided, and standards as well as information on the method of settlement and making complaints.
- (iv) The principles of setting tariffs for water supply and sewage in accordance with the plans for development and upgrading of water and sewerage facilities. The procedures for setting tariffs will be specified in a suitable executive resolution to the act.
- (v) Approval of tariffs and the principles of settlements for supply of water and discharge of sewage. The bill places approval of tariffs with the boards of the municipalities. Hence, the bill does not forecast, at the current stage of arrangements, transferring the tariff policy to a special regulation office
- (vi) Fines and punishment regulations
- (vii) Changes in the regulations in force, temporary, and final regulations.

The new act provides, among others, that the tariffs will be set by water companies based on 'essential proceeds', which in particular shall include:

- costs connected with providing with the services in the preceding year, including planned changes in these costs,
- changes in economic conditions and in the quantity and conditions of the services to be provided, and
- costs resulting from planned capital investment, based on long term plans for development and modernization of water and wastewater facilities, which water companies will be obliged to prepare.

The outcome of this approach will be to reinforce and provide discipline to a regulatory framework in which the local municipalities continue to take on the regulatory role in their areas of jurisdiction. This will include granting concessions and approving tariffs. This

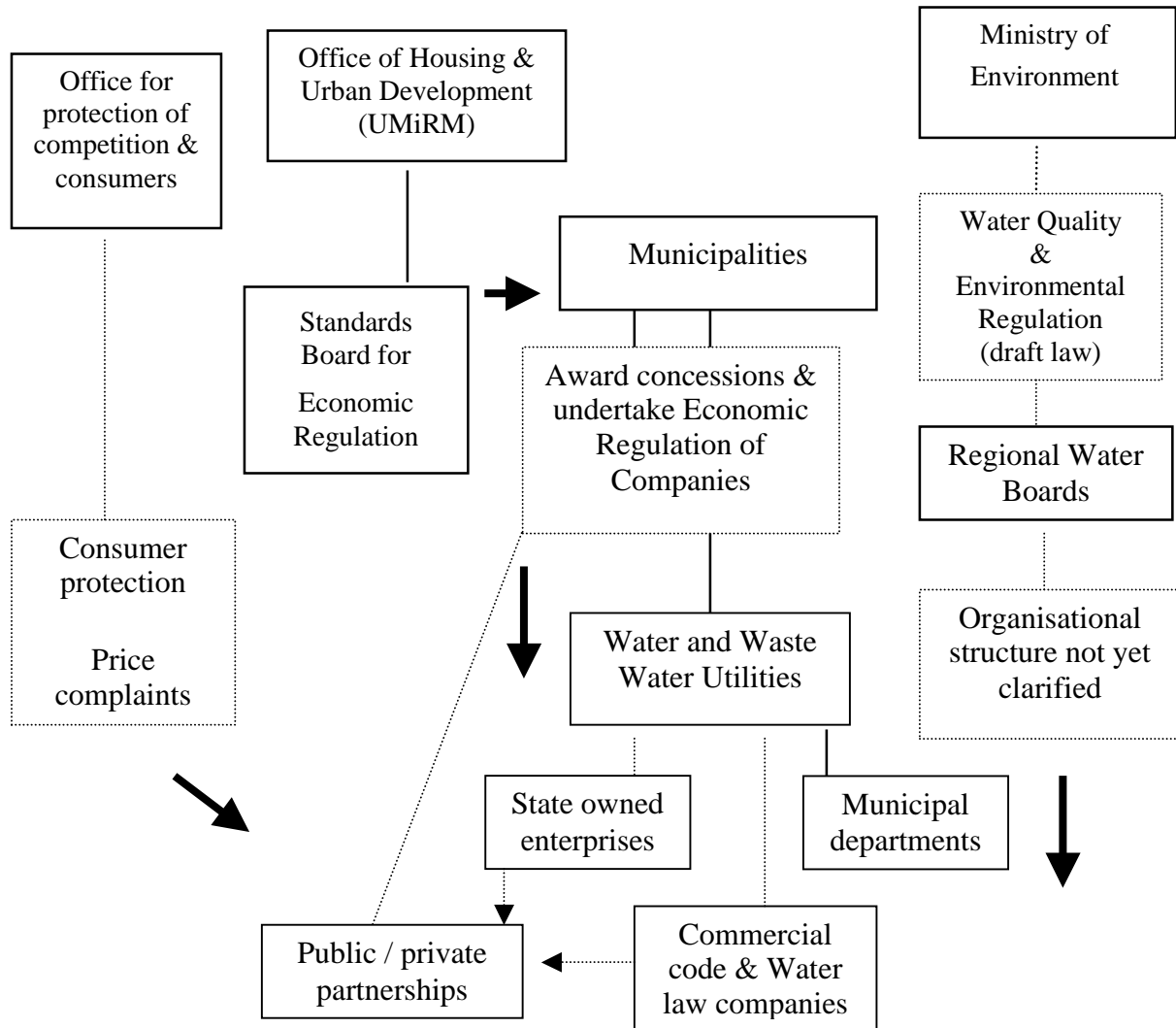
approach should lead to adherence to the basic principles set out in the standards and to a consistency of approach across the country. The test will be whether the municipalities, with their affinity to the political process, can give confidence to external investors that they will receive a sufficiently objective and independent framework within which to operate.

Environmental regulation

The government of Poland has implemented a number of changes aimed at improving water supply and wastewater disposal. Environmental funds were created to finance projects aimed at improving the environment. Improvement of water quality has been a priority of the funds.

The Ministry of Environment is working to synchronize Polish environmental laws with European directives. There will be a new Water Law, which will cover administration of water resource management as well as the requirements for water and wastewater quality. In addition, secondary legislation will be amended. The new legislation was drafted in 1999 and has been before Parliament but some aspects have been contentious and there is no clear date for its enactment. The organizational arrangements for implementing water quality and environmental regulation have been a matter of debate and have yet to be clarified, but it seems that new Regional Water Boards will implement environmental controls within their areas of jurisdiction.

Polish Regulation Framework for Water & Sanitation Services Year 2001 - in transition



Legend:



South Africa Case Study – Key Points

South Africa is a multi-party independent democracy with a population of 43 million people. It is a wealthy state but has a very unequal distribution of income with half of the population accounting for 10% of consumption.

The country established a new constitution in 1996 following the ending of apartheid and this heralded a series of social and institutional reforms. **The improvement of water availability and service to all members of the community is viewed as a national priority.**

The Department of Water Affairs and Forestry (DWAFF) oversees water policy and performance including both environmental and quality issues and water service provision. Water and sanitation services are provided by the local Water Service Authorities (WSAs) either directly through municipal departments or through joint ventures and concessions. Private participation is in its infancy but is growing.

The National Water Act (1998) and the Water Services Act (1997) have established new bases for water management. **The need to cover the full economic costs of the services is recognized, so is the need to provide affordable services for the poorer members of the community.** Means to achieve this include the use of a lifeline tariff (free water for the first 6,000 liters per family per month is under consideration), a steeply rising progressive block tariff to favor lower volume users, cross subsidization (e.g. from urban areas to the rural poor) and Government subsidies (e.g. for first time service provision).

Economic regulation is administered by the WSAs under the guidance and regulations of DWAFF. The local authorities thus take responsibility for both water service provision, through water service providers (often their own department) and for its regulation. Inevitably they are subject to a range of political pressures and aspirations, concerning the provision and pricing of the services.

Economic regulation is at an early stage and many observers fear that there is a lack of the necessary expertise available to local authorities. The City of Johannesburg has tried to overcome this by setting up a multi-service regulation unit covering gas and electricity as well as water and sanitation services. **Despite DWAFF guidance, a lack of consistency of regulation across the country is likely to be a significant issue.** The possibility of a single national economic regulator is still under consideration by the Government.

Environmental and water quality regulation is delegated by DWAFF to the water boards and to new catchment agencies that are being set up.

Background

South Africa is a multi-party independent democracy with a population of 43 million people. South Africa's nominal GDP is estimated at US\$138 billion, similar in size to Portugal, Thailand, and Indonesia, larger than Malaysia and Chile. South Africa's GDP per capita is US\$3,160 but in terms of income distribution it is one of the most unequal large countries in the world. In the late 1990s, the wealthiest 2.4 million South Africans accounted for more than 40% of all consumption, while the poorest 21 million accounted for fewer than 10%.

South Africa had its first multi-racial election in 1994 and the constitution of the country was revised and replaced with the new Constitution of South Africa in 1996. Many aspects of the legal and regulatory frameworks are evolving and changing to better facilitate changes within the provision of water and sanitation services. The national Reconstruction and Development Program (RDP), which acts as the primary political mandate for policy transformation, states:

Water is a natural resource and should be made available in a sustainable manner to all South Africans... the fundamental principle of our water resources policy is the right of access to clean water - water security for all... establish a national water and sanitation program which aims to provide all households with a clean, safe water supply.... adequate sanitation facility per site, and a refuse removal system to all urban households.

The RDP's approach is to ensure that essential service needs are met by mobilizing additional resources through partnerships, more forcefully tapping capital markets, and through large increases in government subsidies when required.

Water and Sanitation Services Sector

South Africa suffers from the unfortunate combination of low levels of rainfall and a large population. For every South African, there are only 1,200 cubic meters of renewable water resources. Since the population continues to grow at close to 2% annually, this figure is expected to fall to under 1,000 within the next decade that is considered to be the boundary between water-stressed and water-poor countries. Issues of water availability are compounded by the inequality of income distribution. Eighteen million people in South Africa do not have a basic water supply and 27 million people (more than half of the South African population) have no sanitation services. The government considers water conservation policies to be urgent and is seeking to make the full cost of managing water catchment areas self-financing.

The institutional arrangements for water supply and wastewater services in South Africa are complicated. Government departments, notably the Department of Water Affairs and Forestry (DWAF), provide direction and advice; there are bodies, such as the water boards with specific catchment responsibilities and there are the local authorities that are primarily responsible for providing services to the community. Since 1994, water policy has been undergoing a process of change that has included the restructuring of DWAF through a review of water policy and legislation.

There are nine provinces in the country each with its own provincial government. Local authorities comprise three categories. There are six metropolitan councils that provide a full range of services to the main urban areas. There are 41 district councils and 284 local councils that comprise a lower tier within the districts. The metropolitan and local councils are responsible for the actual provision of water and sanitation services to the inhabitants, including the distribution systems. Although they must own the infrastructure, they can contract out the operation of their services. Recently, the Government has signified its intention to allocate to the 41 district councils the jurisdiction for water services (water and wastewater) that is currently allocated to the local councils. This will significantly reduce the

number of councils responsible for the services and should allow some material benefits of scale to be achieved.

Local authorities are typically structured into a technical services department (responsible for the operation and maintenance of water services, roads, gas, parks, solid waste disposal, etc.) that is controlled by the city engineer, and a finance department (responsible for tariff setting, treasury, billing, and revenue collection), controlled by the city treasurer. They both report to a town clerk or chief executive. In one case, Durban Metropolitan Council, the water, wastewater and solid waste functions (technical services and finance) have been corporatized into a single entity, which is 100% owned by the council. Private sector operations in the water sector are a recent development, with only three relatively small Public-Private Partnerships (PPPs) in water and sanitation being concluded since 1998.

All local authorities ultimately report to the Ministry of Provincial and Local Government (MPLG) through the relevant provincial department. The Johannesburg Metropolitan Council, for instance, reports to the MEC for Local Government and Development Planning in the Gauteng Province, who in turn reports to the MPLG. Should a metropolitan, district or local council fail to perform its obligations to provide water and sanitation services (or any other service), the relevant MEC in the provincial government will assume responsibility. The provincial departments, however, do not have any capability to deliver water services.

The local authorities receive their bulk water supplies from the water boards, which extract the water from catchment areas and sell it on to them. There are 15 boards covering the entire country. The most important water boards are Umgeni Water and Rand Water, serving the industrialized areas around Durban and Johannesburg, respectively. Not all areas in South Africa are covered by water boards. In some instances the local authorities are responsible for water production and bulk supply, in addition to water distribution, treatment, and discharge.

The water boards report to DWAF. The minister at DWAF has the power to dismiss old water boards and create new ones, and to designate special water services committees to temporarily replace a local authority if he considers it incapable of providing acceptable service to its customers. Although local authorities have representation on the board of water boards DWAF approves the bulk water tariffs charged by water boards to local authorities. DWAF also plays an important role in the financing and operation of raw water reservoir (dam) and transfer schemes.

DWAF sets the policy, guidelines, and regulations on water matters including water services. It also sets standards for drinking water and monitors them throughout the country in the same capacity as the National Drinking Water Inspectorate in the UK. DWAF also acts as the environmental regulator on water matters including abstraction and discharge permits and water quality in river courses, etc. It is the intention of DWAF to devolve responsibility for the environmental management of water related matters to Catchment Management Agencies, which will fund their activities from raw water abstraction charges. The process of establishing these agencies is still in its infancy.

The Water Law

Two important new water laws, known as the National Water Act and the Water Services Act, have recently been placed on the statute books. The National Water Act of 1998 replaced a 1956 Water Act. It was designed to protect, use, develop, manage, and control South Africa's water resources. Its two fundamental duties are to set up a licensing system for the use of water and to prevent the pollution of water. Its core objectives include:

- meeting the basic human needs of present and future generation,
- promoting equitable access to water,
- redressing the results of past racial and gender discrimination,
- promoting the efficient, sustainable and beneficial use of water in the public interest,

- facilitating social and economic development,
- providing for growing demand for water use,
- protecting aquatic and associated ecosystems and their biological diversity,
- reducing and preventing pollution and degradation of water resources,
- meeting international obligations,
- promoting dam safety, and
- managing floods and droughts.

The National Water Act obliges the Water Minister to consider measures necessary to support the establishment of tariffs by water service authorities, and in particular to make allowance for lifeline and progressive block tariffs.

The Water Services Act, passed in 1997, is concerned with the provision of water services. It transfers the responsibility for the provision and management of existing water supply and sanitation from national to local government. The Water Service Authority (WSA) - which is the responsible local authority - takes ownership of the infrastructure and establishes the institutional framework for operations. There are seven core governance functions that WSAs must perform:

- Representation, including understanding its constituency's interests and translating these into services,
- Planning, including drafting a water services plan for its area,
- Regulation, including making by-laws and setting tariffs,
- Conduit for funding from provincial and national government,
- Ensuring water services provision – a function that can be contracted out to water service providers, sanitation promotion agents, and implementing agents,
- Monitoring and evaluation of water service providers (WSPs), and
- Dispute resolution between WSPs and customers.

The Water Services Act recognizes that a WSA may enter into a written agreement with a WSP. Water Service Authorities can enter into various types of municipal service partnerships, including:

- Public-public (WSA and a public sector entity, e.g. Water Board, another Council)
- Public-private (WSA and a private entity)
- Public-NGO (WSA and a non-profit organization)
- Public-CBO (WSA and a community organization).

Various enactments influence the form that these arrangements can take but essentially they must be set up in a fair, equitable, transparent, competitive, and cost effective manner. Under section 19(5) of the National Water Act, there is the possibility of joint ventures, opening the way to the involvement of the private sector in water delivery. In June 2000 DWAF drafted regulations dealing with contracts between water service authorities and water service providers. They prescribe matters that must be regulated by a contract between a water service authority and a water service provider. The minister may also prescribe compulsory provisions to be included in such a contract. The aim of these regulations is to encourage efficient, affordable, economic, and sustainable access to water services for all consumers

Regulation Framework

The regulatory function in South Africa is evolving over time. Under the 1996 Constitution of South Africa jurisdiction and hence regulation is vested in the third tier of government, namely the metropolitan, district and local councils. Unless local authorities agree to allocate the regulatory responsibility to another body, it seems that the national Government is unable to prescribe to local government what mechanism they should use to regulate any water service operations contracts with operators.

The Water Services Act provides the main regulatory framework for the water service sector. There is no independent national regulator of water services. The local authorities undertake the economic regulation of water and wastewater services including the enforcement of concession contracts with private water service operators. In order to provide guidance and consistency for the process, the legislature has established a system whereby DWAF, and other responsible ministries, can prescribe standards through regulations. They include:

- compulsory national quality standards for water and sanitation services,
- requirements for service delivery agreements, and
- monitoring compliance with the above.

DWAF also undertakes a monitoring role. Local authorities are required by the Water Services Act to submit water development plans to DWAF for comment and approval, and water boards have to submit business plans. Although several of these plans have been submitted, observers comment that the process of approval and enforcement does not seem to be in place.

Local authorities have yet to set up regulation or contract units. Private sector management of water services is a new development in South Africa and local authorities do not have an established track record in setting up, monitoring, or carrying out audits of the performance of water service operators. There is currently no well-established process of transparent and accountable reporting. Local government has also lost considerable skills over the past 10 years and the available capability is limited and regulatory experience is lacking.

Some expertise exists in larger authorities and the Greater Johannesburg Metropolitan Council (GJMC) has decided to set up a separate contract unit within the council. This unit will administer the gas utility, electricity generation, which has been privatized, and the water services, which are going out on a management contract. GJMC intends to have a multi-utility contract administration unit consisting of a small professional team supported by administrative staff. GJMC intends to use private sector expertise to augment its regulatory capability, and it is expected that the Council will go out to tender in 2001 to seek technical assistance and advice for the formation of this multi-utility contract administration unit.

It is too early to tell whether these new regulatory arrangements are going to be successful, but initial indications are that the councils are on a steep learning curve, and it will be some time before they have developed adequate regulatory capability and experience. Since each local council is to be responsible for regulating its own contracts with water service providers, the impact and effectiveness of the regulatory process across the country is likely to be variable.

At the moment it is doubtful whether commercial regulation is being carried out effectively, either by DWAF for whom it is not its direct function (its role is limited to promulgating regulations, policy, and guidelines), or by the local authorities for which this is a relatively new and specialist activity. DWAF often issues guidelines to local authorities rather than regulations. One reason for this is the markedly different capabilities of local authorities to comply with them. The application of these guidelines is often not taken seriously by the local authorities. It may be preferable for DWAF to indicate stricter regulations in metropolitan areas, where pollution threats are greatest.

The opinion of some observers is that there are too many bodies responsible for economic regulation, with the effect that none are actually in a position to do it properly. The six metropolitan local authorities have the resources and in time will probably develop this capability. It is considered doubtful, even after the re-assignment of the water service authority functions from local to district authorities (i.e. a reduction from 284 to 41), that the district councils will all have the resources or be able to develop an effective regulatory capability.

A debate on whether or not South Africa should have a national independent regulatory body such as Ofwat is currently taking place. A comprehensive review of economic regulation is being undertaken by DWAF and the possibility of a single regulator is one of the options under consideration. A number of operators appear to be playing lip service to the need for a properly regulated market and are arguing that South Africa cannot afford an expensive independent regulator of the type that exists in England and Wales. There are also marked regional differences in South Africa and there are doubts whether a national regulator would be able to sufficiently appraise itself of the conditions prevailing in all of the district and metropolitan areas. A director from DWAF made the following statement on the issue in January 2001:

We in South Africa plan a comprehensive policy review process as the white paper on water supply and sanitation was already done in 1994. This review will include all aspects including the regulator role, function, and structures. We will certainly learn from other countries but will most probably not adopt an Ofwat model just like that. What will also be considered is what will be regulated by the municipalities and what will be the role of national Government as national regulator.

The framework of economic regulation is under close scrutiny in South Africa and we can expect to see the process continue to evolve over the next few years.

Tariff Setting and Water Services Affordability

The practicality of affording major improvements and extensions to water and sanitation infrastructure while retaining affordable services for the poorer sectors of the community is a critical issue in South Africa.

The power to determine tariffs vests in the local authorities. In their capacity as WSAs they control the setting and adjustment of tariffs by the WSP and have powers to review and adjust prices within a water services agreement. The tariffs for municipal water services are subject to standards determined by DWAF. In setting out draft regulations for this purpose the minister stated:

The South African Government operates in the context of limited resources and large service backlogs. Given these constraints, it is important that the water services sector becomes financially autonomous, in order to ensure the long-term sustainability of water service provision. In order to achieve financial autonomy, it is essential that the full financial cost of supplying water be recovered from water users, including capital.

The Minister of Water Affairs has powers to intervene in established tariffs for concession contracts, and in using these powers he must take into account the effect that this will have on the return of the water service operator. Bulk water charges (i.e. the water supplied by water boards) also require the approval of DWAF. The Department of Finance must approve local authorities' overall budgets and borrowing allocations and consequently he can also influence annual tariff increases. The Department of Provincial and Local Government, under whose direction all local government falls, is also the line ministry responsible for local government competencies.

There are many influences affecting the setting of water tariffs. There is a conflict for those concerned between the stated need to recoup the full costs of service provision, required to improve and extend the water and wastewater services, and the need to ensure access to those services for the extensive poorer sectors of the community.

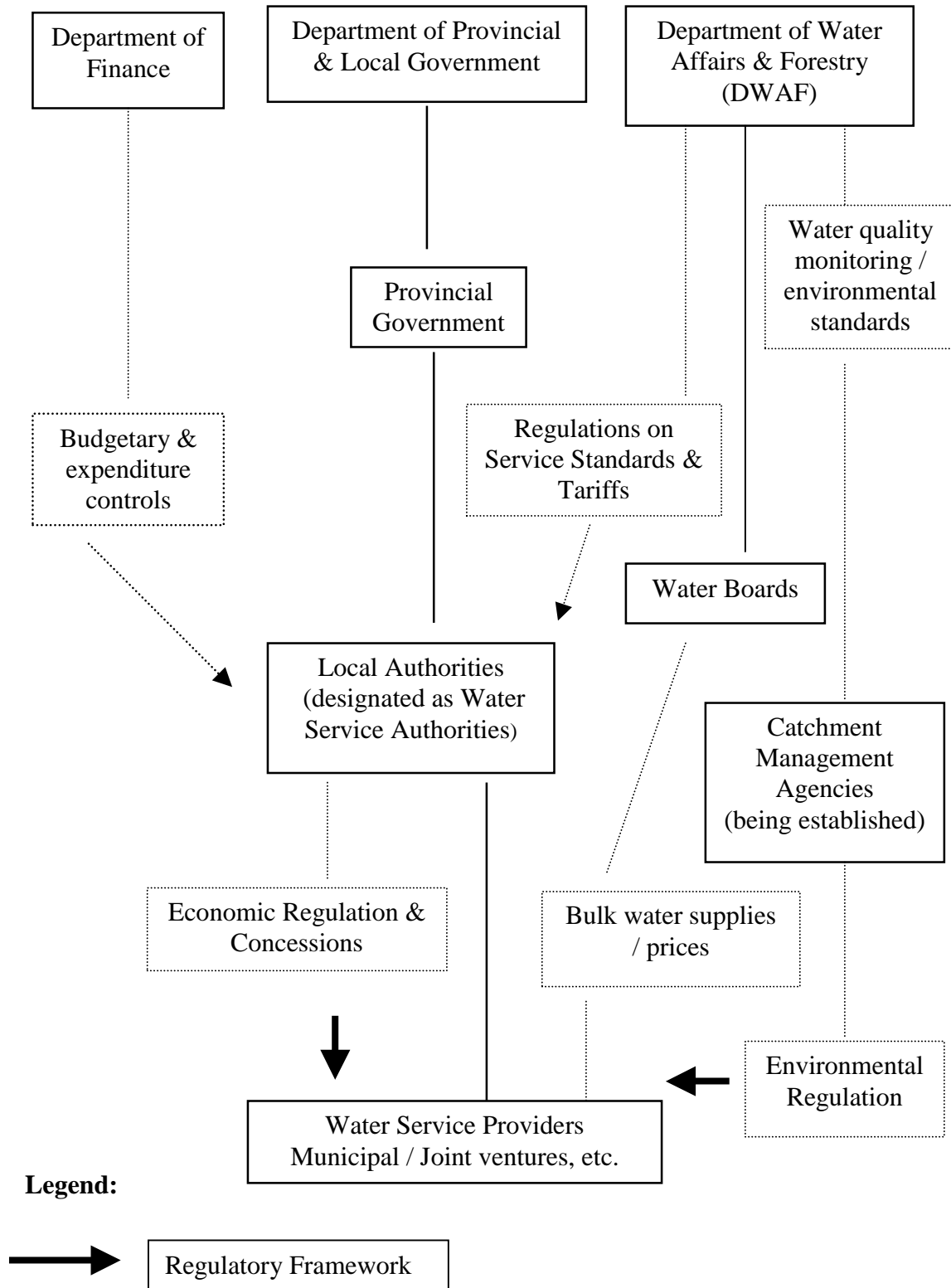
The specific issue of affordability was given emphasis in the Regional Reconstruction and Redevelopment Program. The RDP specifies the need for tariff restructuring, cross-subsidies, and lifeline services to the poor, with respect to both water (including sanitation) and electricity. To ensure that every person has an adequate water supply, the national tariff structure must include the following:

- a lifeline tariff to ensure that all South Africans are able to afford water services sufficient for health and hygiene requirements,
- in urban areas, a progressive block tariff to ensure that the long-term costs of supplying large-volume users are met and that there is a cross-subsidy to promote affordability for the poor, and
- in rural areas, a tariff that covers operating and maintenance costs of services, and recovery of capital costs from users on the basis of a cross-subsidy from urban areas in cases of limited rural affordability.

Most councils now use variable service charges for domestic, institutional, and commercial usage and a rising block tariff within the domestic charges to subsidize poorer customers. In some instances unmetered customers are effectively subsidized where the actual consumption is greater than the assumed consumption. Wastewater charges are increasingly being linked to water consumption and, therefore, subsidies (explicit or effective) to the poor take place through this increasingly popular mechanism. However, in some authorities the ability to cross subsidize is limited by the limited number of commercial or generally affluent customers.

It is current government policy to provide capital subsidies for new water schemes to cover the cost of providing 250 liters of water/capita/day at least 200 meters from the place of residence and a ventilated improved pit latrine. All capital costs above this minimum standard and all O&M costs associated with the service provision have to be recovered in the water and wastewater customer charges. The Government is now seriously considering providing the first 6,000 liters per household/month free. The cost of this water could then be provided either by direct transfer from national to local government or from a steeper rising block tariff, or a combination of both.

South African Regulation Framework for Water and Sanitation Services Year 2001 – In transition



US (New Jersey) Case Study – Key Points

The United States (US) is a federal republic containing 50 states. It has a large diverse and steadily growing population of 281 million persons and it is the fourth largest country in terms of land area in the world. The US is the world's wealthiest country, a reflection on its rich natural resources and highly developed industrial and technical base. The State of New Jersey lies on the eastern seaboard adjacent to New York.

Water and wastewater operations are highly fragmented, with a total of some 55,000 service providers. A large number of these are small, municipally-owned supply and distribution systems. It is estimated that the 5% largest networks serve 76% of the US population. Municipal control is the norm in the US but there are a large number of private companies who are separately regulated.

Regulation of services in the public interest is a long established and respected process. State governments have primacy in the control of utility operations, including price controls. The states regulate investor-owned water utility companies through Public Utility Commissions (PUCs), which determine revenue requirements and tariff structures.

Economic regulation of private companies is based on a 'cost to serve basis', and is concerned to ensure that the water utilities do not abuse their monopoly position and charge a fair price to consumers. It also ensures that the companies are able to make a "fair" rate of return on their expenditure and are in a position to maintain a safe, adequate, and proper service.

The New Jersey Board of Public Utilities (BPU) regulates all investor-owned utilities in the state including telecommunications, electricity, gas, water, and wastewater. It consists of three commissioners who are appointed by the state governor for terms of six years each. The commission is funded by a levy on the utility companies. It publishes reports on its activities and is transparent and accountable in its decisions and processes.

The general perception in the US is that the regulatory environment has been effective in serving the public interest and in providing safe and adequate services. However, there is a lack of incentive under the rate of return based approach for companies to increase efficiency. This has led to a cost plus culture and in order to ensure reasonable rates the regulatory process has become resource consuming and intrusive.

Water and wastewater utilities are also subject to strict environmental regulation which is overseen by the Federal Environmental Protection Agency and its state counterparts.

Background

The United States is a federal republic containing 50 states. It has a large diverse and steadily growing population of 281 million persons and occupies a land area of 9.5 million sq km, making it the fourth largest country in the world in terms of land area. The US is the world's wealthiest country, a reflection on its rich natural resources and its highly developed industrial and technical base. The state of New Jersey lies on the eastern seaboard adjacent to New York. It is one of the smallest states in land area but has one of the largest state populations (8.4 million) making it a highly urbanized area.

There are many federal laws affecting water supply in the US. Legislative influence is particularly strong in the areas of water resource management and drinking water quality. Federal laws are enforced by a number of agencies, the most prominent being the Environmental Protection Agency (EPA). These federal agencies usually have state-based counterparts. Representation of utility companies is via a plethora of associations, which advise on the application of federal standards, carry out service benchmarking, and administer training and certification programs. They include the American Water Works Association, National Association of Water Companies, National Institute for Water Resources, National Association of Regulatory Utility Commissioners, the American Water Resources Association, and the Water Quality Association.

While the federal government plays a large role in water matters, the states have primacy over the federal government in terms of planning, management, and regulation matters. States have the authority to create, allocate, and regulate water rights within their boundaries, and in some cases state standards (e.g. in water quality) exceed federal levels.

Regulation of services in the public interest is a long established and respected process in the US. State governments have primacy in the control of utility operations, including price controls. The states regulate investor-owned water utility companies through state public utility commissions (PUCs). The PUCs determine service revenue requirements and tariff structures. Companies must apply to PUCs to request increases in their rates and overall revenue requirements. Such applications are often evaluated using formal judicial processes with hearings and rules of evidence and procedure. The utilities must demonstrate that price increases are justified by an increase in their costs. Municipal water systems have their own control including pricing, and need only to justify their rates and expenditure to the local municipal and state finance board.

Water and Sanitation Services Sector

In the US, water and wastewater operations are highly fragmented, with a total of some 55,000 service providers. A large number of these are small, municipally owned supply and distribution systems. It is estimated that 95% of the systems serve communities of less than 3,300 persons. Conversely the 5% largest networks serve 76% of the US population.

Municipal control is the norm in the US, with 85% of U.S. drinking water and 95% of U.S. wastewater supplied by the municipal sector. Most services are provided by publicly-owned municipal water and wastewater systems serving individual towns, and these agencies dominate the provision of services to the major urban areas. Municipalities also account for the provision of wastewater services for which, traditionally, substantial government subsidies have been received.

Competition is encouraged at the franchise level, although not at the individual customer level. A local municipality can put out to tender the operation of its assets, or sell them completely to a private utility company. In addition there exist bulk supply agreements with inter-connections between networks on the clean water side, and disposal agreements on the wastewater side. Large industrial users can often source their water from a number of

different sources (on-site well and treatment, network connections) and increasingly they are looking to water re-use schemes to reduce their wastewater disposal costs. This fits with a recent drive to keep water within the local watershed, rather than disposal into rivers and loss from the locality.

Privately-owned companies serve water to around 15% of the US population. Most private water companies are investor-owned, though there are some mutually owned by customers or landowners within the service territory. The largest metropolitan systems are still generally under municipal control, and there are very few privately owned systems serving a population of more than one million people. Most private utilities in the water sector are water only companies, or less commonly water and wastewater. There are also a few privately-owned companies managing combined water and electricity operations, although this is rare. In general the US wastewater market is much less developed than the water market and is historically dominated by municipal control. There are only around 10 investor owned water utilities generating annual revenues in excess of US\$100 million.

Performance comparisons of private and public water utilities in the US have found that they provide comparable levels of service, but that the municipal systems generally have a lower net cost of capital and lower real water bills. In smaller municipal systems the ability to provide high levels of customer service (call centers, etc.) and improve facilities to meet new regulatory requirements is constrained by economies of scale and access to large quantities of capital funding. Consequently, many municipal water supply systems face serious problems associated with capital deterioration, deferred maintenance, unreliable water supply, and under-pricing of services. The cost of investment in facilities that is required (estimated at US\$138 billion) is driving a trend of consolidation through acquisition of assets and long-term operating contracts with private utility companies. Fuelling this growth in private participation has been the ability of these companies, through the use of fixed-price contracts and performance guarantees, to fully comply with environmental regulations while realizing substantial cost savings. Cost reductions in the order of 30% plus have been achieved. The US is generally regarded as providing excellent opportunities for private investment, both from local water companies and from the large international multi-utility companies.

The situation in New Jersey is comparable with the national picture. There are some 550 community water and wastewater systems, mostly small and municipal. There are three investor owned utilities present with revenues above US\$100 million, including the European utility RWE (TWI - E'town Corporation).

Regulation Framework

The overriding concern of US economic regulation of privately-owned utilities is to ensure an essential service is provided to consumers at a fair price and in order to achieve this the regulatory system exerts great influence over US water and wastewater utilities.

Privately-owned utility companies, defined as 'a business affected with public interest', are regulated to ensure that their essential services are provided to a safe, adequate, and proper standard. Furthermore, since the services are "essential", such utilities are subject to regulation from a price perspective, not least since the fixed nature of utility connection leads to monopolistic providers which are not subject to the normal laws of competition that would otherwise determine price. Thus, the explicit objective of regulation is to provide the means to substitute for market forces in delivering a quality product at reasonable rates, and also to ensure that social welfare objectives associated with the availability of essential services to all members of the community are met.

Regulation in the water industry in the US has changed little in the last 90 years. Following the principles outlined above there are two separate categories of regulator that have jurisdiction over water utilities; those from a product perspective, and those from an economic perspective.

Regulation of supply is largely performed under the Safe Drinking Water Act. This seeks to ensure that water systems, both treatment and distribution are maintained so as to provide a safe, adequate and proper service. This covers not only end user water quality standards, but also standards of distribution and treatment. Regulation from an environmental perspective also falls into this category, with the overall aim to safeguard supply and manage the entire drainage basin. This regulation applies to all systems, whether municipal, investor or mutually owned.

Economic regulation of investor-owned companies is based on a 'cost to serve basis', and is concerned to ensure that such water utilities do not abuse their monopoly position and charge a fair price to consumers. They must also ensure that the companies are able to make a fair rate of return on their expenditure and have sufficient capital to be able to maintain a safe, adequate, and proper service.

The New Jersey Board of Public Utilities

The Public Utility Regulatory Law came into effect in 1911. The New Jersey Board of Public Utility Commissioners (PUC) was the first agency in state government with direct powers to order changes, and as such, was the pioneer for the new philosophy that then moved across the country, that government should work affirmatively to serve the public interest. This was part of an ambitious legislative program which included electoral reforms, municipal government reforms, and a worker's compensation law. The name of the PUC changed to the Board of Public Utilities (BPU) in 1977 and it became an autonomous agency within the new state energy department.

The New Jersey BPU regulates all investor-owned utilities in the state including telecommunications, electricity, gas, water and wastewater. The Division of Water and Wastewater is responsible for ensuring that the 61 water and 21 wastewater utilities currently under the Board's jurisdiction provide safe, adequate, and proper service at the most reasonable rates possible. In addition the commission regulates the business activities of utility companies such as acquisitions, privatisations, and long-term operating contracts.

The New Jersey BPU consists of three commissioners who are appointed by the State Governor for staggered terms of six years each. The commission is funded by a levy on the utility companies. It publishes reports about all its activities and is designed to be transparent and accountable in its decisions and processes.

The powers of the New Jersey BPU are:

- *Tariffs* – The commission can determine, under law, the reasonableness of the rates charged. They can investigate either on the basis of filed complaints or under their own initiative
- *Service standards* – The commission can adopt rules setting up standards to ensure adequacy, safety, uniformity, etc. As in the case of tariffs it may also approve proposed changes or check on existing practices
- *Service areas* – The commission can specify the boundaries and other service conditions within in which a utility proposes, or may be required, to serve. This may include approval of any substantial service expansion or curtailment of existing services
- *Accounting* – The commission oversees the accounts of utilities and ensures that a uniform system of accounts is in place
- *Security* – Plans for such issues may be examined and they are subject to commission approval before they are granted
- *Property* – The proposed sale, purchase, or substantial alteration of utility property may be subject to commission scrutiny to ensure that the utility can render adequate service to the public, and to determine during a rate review whether proceeds from a property sale (in total or in part) need to be passed back to the customer.

- *Corporate relations* – Any consolidation or merger that might result in the change of corporate control are subject to approval to ensure the continuation of responsible management and adequate service to the public. This also covers the transactions between regulated utilities and the companies with which they may be affiliated.
- *Procedures* – The commission can determine its own proper procedures for exercising its powers in the best interest of public service.
- *Special responsibilities* – the water and wastewater utility has special obligations associated with the environment and public safety (e.g. public health). Thus a number of other regulators such as the EPA oversee the utility.

Tariffs

Economic regulation as overseen by the BPU is on a cost to serve and rate of return basis. Given the high capital nature of the utility business, customer charges are based upon the levels of capital assets necessary to deliver that service. A rate of return for the utility is set by the regulator, and is judged such that, a fair price is paid by the consumer for the service, whilst recognizing the need for the utility to make a fair return for investors, such that it might expect to receive in a comparable business in the open market. This rate of return is commonly in the region of 10%.

The cycle for determining tariff levels (known in the US as rates) revolves around a test period, usually a year, over which the utility is monitored. This leads to the determination by the Board of the change in rates that is necessary. The utility can request to be evaluated for a change in its tariff levels at whatever period it chooses. This is prompted by a need to increase the revenue requirement, commonly caused either by a need to fund major capital investment, or by the rate of return falling below that determined by the Board. The Board may also ask to review the utility's rates if it feels that an adjustment may be necessary. The interval between rate cases varies considerably. Historically large water utilities in New Jersey have filed for rate increases approximately every two years. However, there are companies in New Jersey, which have not been reviewed for 12 years.

In order to ensure that a utility's rates (tariff levels) are reasonable, the BPU will apply the following tests:

- *Cost of Service.* Generally the most important test, this is the operating expenses of the utility plus an allowed (not guaranteed) profit. This can be viewed as a measure of a reasonable rate from the utility's point of view and it generally establishes a minimum level.
- *Value of Service.* This is the perception of the consumer about the worth of the service and its importance from a public safety standpoint (e.g. sanitation, health). This will tend to establish a maximum level.
- *Quality of Service.* This represents a view from the regulators and the courts that the utility's obligation to provide adequate service is just as important as its right to charge a reasonable rate. Thus complaints received about the utility's service can be considered as relevant to the review.
- *Comparison of Rates.* Tariffs levied by similar utilities in the same or different states can sometimes be considered as a test for reasonable rates, although the unique nature of each system, geography, and demography make this difficult in practice
- *Competitive Service.* This is not often used due to the difficulty of establishing a competitive source of water or wastewater to be a source. However, it could apply to a situation where there is an option for a local independent well (borehole) source versus a company network.
- *Economic Conditions.* As with all companies, utilities are subject to inflation and the general economic conditions, and this can be taken into account.

- *History of the Company.* For example, a company that has been conservatively managed and has shown regard for the public interest is much more likely to propose reasonable rates than a company with the opposite history. However, previous rates are not necessarily a good measure since changes in operating and financial conditions can vary as circumstances change.

The customers are represented in the tariff determination process by the rate payer advocate whose mandate is to represent the consumer interest. The rate payer advocate is an independent body affiliated to the BPU and is funded by a levy on the utility companies.

The general perception in the US is that the regulatory environment has been effective in serving the public interest and in providing safe and adequate supply and collection systems. However, there is a lack of incentive under this rate of return based approach for companies to increase efficiency. This has led to a cost plus culture, and thus in order to ensure reasonable rates, the regulatory process has become increasingly resource consuming and intrusive.

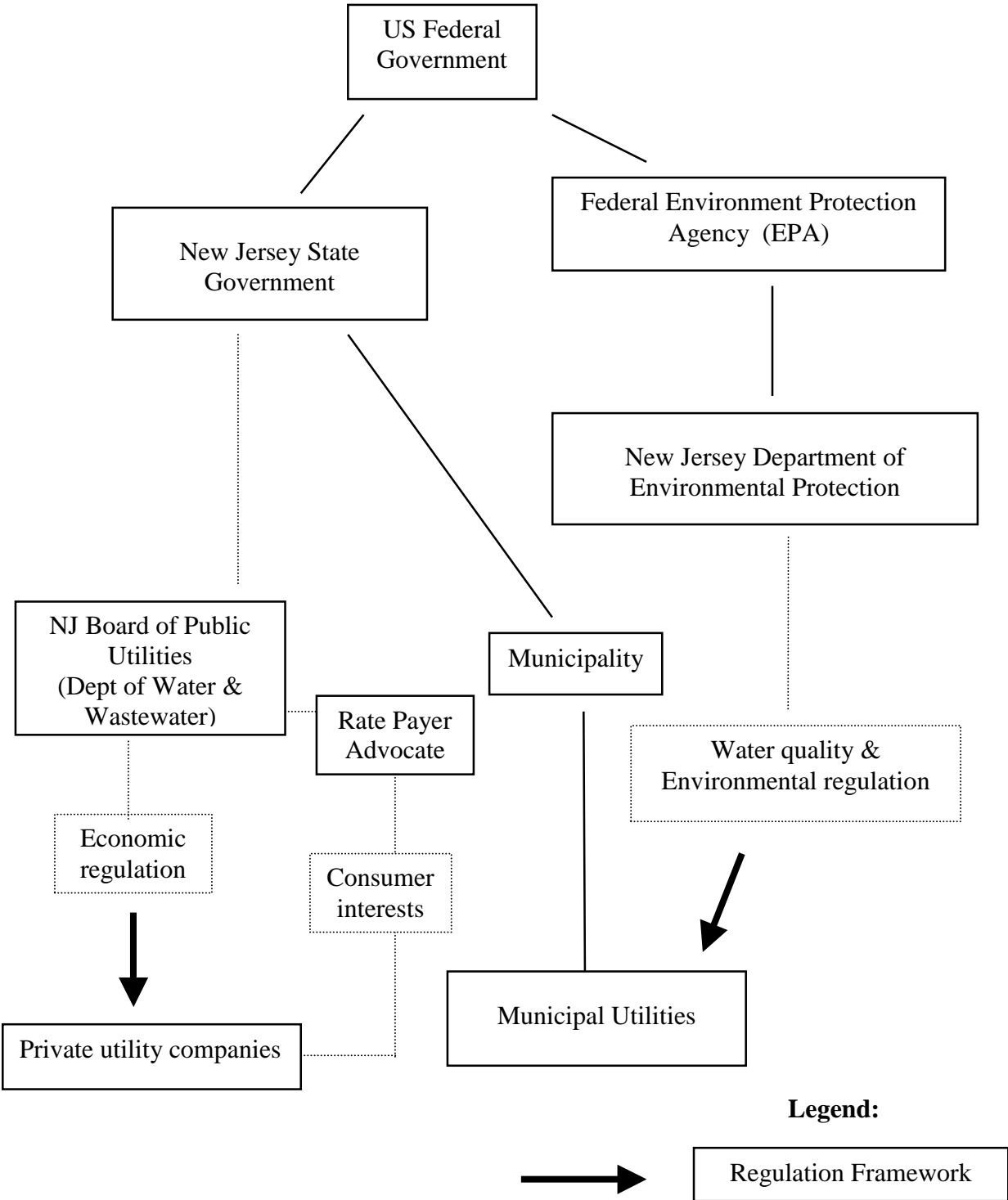
The trend towards consolidation within the water and wastewater industry and the increasing involvement of large international companies will necessitate a shift in the emphasis of economic regulation in order to facilitate business development, while maintaining the high customer standards which the current system has ensured.

Environmental Regulation

The special nature of the interaction of the water and wastewater utility with its environment, and the public safety associated with drinking water standards means that water and wastewater utilities are also subject to strict environmental regulation. The main national body is the Federal Environmental Protection Agency. In New Jersey is the NJ Department of Environmental Protection, which is a department of the national agency. Its water department (NJ Water Supply Administration) responsibilities cover the following areas:

- To ensure that drinking water supply systems meet the federal and New Jersey Drinking Water Standards,
- To ensure that surface and ground water diversions do not exceed the sustainable yield of available water resources,
- To protect the ground water resources of the state through proper well drilling activities,
- To help protect the surface and ground water resources of the state through development and implementation of New Jersey's source water assessment plan; watershed planning and management strategies,
- To administer the Drinking Water State Revolving Fund and other funds to finance the costs of drinking water infrastructure improvements needed to achieve and maintain compliance with the Safe Water Drinking Act, and to implement other drinking water initiatives,
- To ensure the proper construction, operation and management of drinking water supply systems,
- To help identify water supply needs and issues and develop plans for their resolution, and
- To ensure the proper response to water supply drought emergencies.

New Jersey State (US) Regulation Framework for Water & Sanitation Services - Year 2001



Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

Asian Country Report Summaries

**Bangladesh
People's Republic of China
India
Nepal
Philippines
Sri Lanka
Thailand
Viet Nam**

Summary of Stakeholders Surveys

BANGLADESH COUNTRY REPORT SUMMARY¹

Introduction

Bangladesh is one of the most densely populated countries of the world having an area of 147,570 sq km and 120 million population as per 1991 census. Its economy is agriculture based and 80% of the population live in rural areas. About 44% of the population live below the poverty line. The present per capita income of the country is US\$370 per annum. Administratively, the country is divided into 6 divisions, 64 districts, 460 upazilas (sub-districts) and 4,450 unions that are the bases of the lowest tier of democratically elected local government Institutions.

Water and sanitation are generally considered as a social good and as such these services are being provided to the consumers at subsidized prices. These facilities are also treated as political tools sometimes. Government agencies, autonomous bodies, and local government institutions like municipalities and city corporations are engaged in the water supply and sanitation sector. They mainly function as service providers and to some extent as regulatory bodies also.

The apex body of these organizations is the Ministry of Local Government, Rural Development and Cooperatives (MLGRDC), which controls and oversees the activities of the organizations mainly in respect of financial management and setting tariff structures and thus performs the function of a regulatory body.

There are no privately managed water and sewerage systems in Bangladesh and consequently there is no comprehensive regulation for controlling such a system. In the existing situation of supplying water by public service providers, the services are controlled by government regulations.

In the future, if private entrepreneurs are to operate in the water supply and sanitation sector, a well-equipped regulatory body must be in place to look after the interests of both service providers and consumers so that a balance is maintained between level of services provided and tariff imposed for the same. The regulatory body will ensure that the policy framed for the sector is properly implemented and that the consumers are provided with quality service at fair cost.

Water Supply and Sanitation Sector

The Department of Public Health Engineering (DPHE) is a government agency responsible for water supply and sanitation for both urban and rural areas of the whole country except the capital city, Dhaka, Narayanganj, and the port city, Chittagong. To cope with the growing population of the three cities, two autonomous organizations named Water Supply and Sewerage Authority (WASA) were created for Dhaka and Chittagong in 1963.

Bangladesh became independent in 1971 and at that time piped water supply systems existed in limited areas of 40 municipal towns. Now, out of 223 municipalities, piped water supply systems have been developed in 101 of them. In Dhaka City water supply coverage is only 65% and in other urban areas water supply coverage is around 50%. Sanitation coverage in Dhaka City is around 72% of which 30% may be assigned to water-borne sewerage. There is no water-borne sewerage system in any other urban area and sanitation coverage in other towns is about 50%.

Bangladesh has achieved tremendous success in water supply in rural areas. The people get safe drinking water through hand pump mounted tube wells. The service coverage is considered to be the highest in South Asia. Bangladesh, being an alluvial delta of the Bay of

¹ Summarized from the Bangladesh Country Report prepared by Mr. Amin Uddin Ahmad, Domestic Consultant

Bengal and given a good geological formation with water bearing strata, installation of hand pump tube wells in this region is comparatively very cheap and technically suitable.

Though 97% of the population have access to safe drinking water, living within 150 meters distance of a hand pump tube well, the reduction of incidence of water borne diseases has not been as high as expected due to the use of grossly contaminated alternate sources of water and lack of hygienic practices. Recently, the arsenic contamination in groundwater has emerged as a great concern for the country.

The commendable success in rural water supply systems has not been matched by the coverage in rural sanitation. The sanitation program for rural areas was first started in 1962 with the assistance of the World Health Organization (WHO). According to this program low-cost sanitary latrines were made and supplied by DPHE free of cost to the people. At present the government, through DPHE, is supplying sanitary latrine units at subsidized prices to the rural people through 900 production centers located throughout the country.

Regulatory Offices

Three major regulatory bodies are functioning as far as water and sanitation is concerned. These are (i) Ministry of Local Government, Rural Development and Cooperatives, Ministry of Environment and Forest, Ministry of Water Resources, (ii) WASAs in Dhaka, Narayanganj and Chittagong, and (iii) pourashavas and city corporations.

The regulations concerning environment particularly water and wastewater quality standard have been framed and monitored by the Ministry of Environment and Forest under Environment Protection Act of 1997. The Department of Environment headed by the Director General under the Ministry of Environment and Forest is also a regulatory body responsible for enforcing the Environment Conservancy rules.

WASAs are framing and imposing regulations with regard to tariffs, service quality, and performances. Pourashava regulations are framed by the MLGRDC concerning tariffs, service quality, performance, etc. However, pourashavas are implementing the regulations.

Major Constraints Affecting the Delivery of Services

In Bangladesh the urban water supply system is characterized by insufficient revenue collection, which results in poor operation and maintenance, that in turn earns lack of confidence of the consumers in the supply system. The following major constraints that affect the delivery of water supply and sanitation services have been identified.

- *Poor tariff structure:* Most of the municipalities of Bangladesh cannot meet even the operation and maintenance (O&M) cost of the supply system. One of the reasons is that the tariff structure is poorly designed or not updated for a long time. The municipal authorities are afraid of being unpopular by raising tariff rate. As a result insufficient funds are generated which cannot even meet the required operation and maintenance cost of the system.
- *Huge unaccounted for water:* Proper operation and routine maintenance cannot be carried out for want of sufficient funds. This results in wastage and leakage from different points of the system. Unauthorized connection is also an issue of unaccounted for water. Wastage and leakage together with huge number of unauthorized connections contribute to reduction of revenue generation, which in turn leads to poor O&M of the systems.
- *Lack of authorities:* Despite government's commitment to strengthen local government institutions like municipalities, the latter is suffering from lack of authorities in many respects. Many municipal authorities realized that the existing tariff structure should be revised and updated in order to make water supply and sanitation (WSS) sustainable, but present laws and authority do not allow them to revise tariff levels according to their need. They also need permission from government to create posts or to appoint anybody, although municipalities are bearing the cost for it. A tendency to control the local

government institutions in every matter frustrates pourashavas and lead them to dependency on central government. Since they suffer from lack of resources, government provides them grants for development, retaining mechanisms to control and regulate them. Eventually, the local government institutions including municipalities become more and more dependent on government support.

- *Lack of commitment:* Lack of commitment of the local municipal leaders towards development of sustainable WSS system has also been observed. It has further been observed that tariff rates are not normally increased in case of being unpopular. Revenue income from water supply is sometimes spent for other works, and existing laws are not enforced for nonpayment of bills or for irregular connections.

All the factors discussed above are linked with each other. Inadequate tariff leads to low revenue earning, low revenue means sufficient resource is not available to address proper operation and maintenance, which in turn leads to poor management causing wastage and leakage. Poor management generates lack of confidence, which discourages existing consumers to pay water bills and to take new connections. Unaccounted for water and less number of connections (under utilization of water supply capacities) again contribute to less revenue income. In Bangladesh all these factors form a vicious cycle where the 'sustainability' issue is critical.

Policies and Strategies

The Government in 1998 framed a national policy for water supply and sanitation. The broad objectives of the policy are to improve the standard of public health and to ensure an improved environment. The policy approach included the following aspects:

- In the near future water tariffs shall be determined on the basis of the cost of water production, operation and maintenance, administration, and depreciation.
- Water Supply and Sewerage Authorities (WASAs) shall be responsible for sustainable water supply in the metropolitan areas. In other urban areas the pourashavas, (municipalities) with the help of DPHE, shall be responsible for the service. They shall be empowered to set tariffs, by-laws, appointment of staffs, etc., according to their needs and in accordance with guidelines laid down by the government.
- WASAs and the pourashavas shall improve their operational efficiency including financial management. In the near future billing and collection targets will be 90% and 80%, respectively. They will take actions to prevent the wastage of water. In addition they will take necessary steps to increase public awareness to prevent misuse of water. Pourashavas will take appropriate measures to reduce unaccounted for water from 50% to 30%. Dhaka WASA and Chittagong WASA will also lower their unaccounted for water from the present levels.
- Private sector participation will be promoted through BOO/BOT and other arrangements. For this purpose, opportunities will be created for involving the private sector in billing and collection. A guideline on private sector participation in the sector will be prepared by the government.
- The sanitation system shall have to be self-sufficient and self-sustaining. Sanitary latrines in every household will be promoted. Public and community latrines will be set-up by the city corporation/pourashava and leased out to the private sector for maintenance.

In the water supply and sanitation sector, the local government division will be responsible for overall planning, identification of investment projects, and coordination of activities of agencies under it including public and local government bodies, private sector, and community-based organizations. But each of the organizations will be responsible for its own activities. The relevant WASA will be responsible for water supply and sanitation in Dhaka and Chittagong city areas. Involvement of the private sector in these activities will be explored, examined, and encouraged.

The government is dominating the sector by its activities in policy framing, regulation making, planning, designing, implementing, and monitoring. The main reason for government dominance is the resource. Since local government institutions are lacking in resources and the private sector is not encouraged to invest for big projects, government alone is investing as far as possible to meet the demands of the sector. In addition, the government has to support the pourashavas and even the two big WASAs in implementing their water and sanitation projects. The natural consequence is government direct control in all matters of the sectoral activities from policy framing and planning to implementing, monitoring, and evaluation.

Conclusions and Recommendations

Based on the foregoing sections, the following conclusions are drawn up:

- A regulatory body with a comprehensive regulation for protection of rights of service providers and beneficiaries is absent.
- Service providers can hardly perform work of regulatory body.
- Poor tariff structure is a hindrance to financial sustainability.
- For quality and sustainable service, an efficient and transparent management of WSS utilities is essential.

To address the constraint and improve the management for sustainable WSS utilities, the following recommendations are put forward:

- An independent regulatory body other than WSS providers with adequate authority should be established.
- The body should be accountable to the Parliamentary Standing Committee and not to the Local Government Division of the MLGRDC.
- It should be financed by the public fund.
- A comprehensive regulation should be developed for regulation of privatized WSS utilities. A rigorous review of the anticipated situation is needed, and experts conversant with the system along with local experts should be deployed for development of regulation.

The objectives of regulation, basing on the existing scenario of the sector, as identified by the workshop, are:

- Ensure rights, privileges and participation of beneficiaries.
- Ensure interest of service providers.
- Ensure quality services.
- Ensure proper management of sustainable water and sanitation systems.
- Set and establish rational tariff policy and structure.

PEOPLE’S REPUBLIC OF CHINA COUNTRY REPORT SUMMARY²

Introduction

Similar to other DMCs, the water supply and sewerage sector in the People’s Republic of China (PRC) has been characterized over the last two decades by a lack of autonomy in water utilities regarding staffing and financial management. This is primarily because water has been regarded as a social rather than an economic good. While treated as a social good, the funding source is from government, and investment and maintenance decisions often have political influence.

In PRC, before it opened its door to the outside world and undertook economic reform, urban water supply and sewerage services were provided as municipal public works, which were constructed, managed, and run by the agencies or the departments directly affiliated with government. The main financial sources for such public works were from the central government, local municipal government, and bank loans. The operating costs partially came from user’s bills and were subsidized by the local government when it had insufficient funds to operate. Because water tariff standards were formulated by government from a social welfare point of view, such losses have to be borne by government, which is known as ‘loss allowed by policy’.

Water Supply and Sanitation Sector

Water supply and drainage in PRC is classified as an industrial sector that is connected with the whole national economy - an important sector, which should be controlled by the state-owned economy. There are five ministries responsible for the water supply and drainage sector. At the central governmental level, these are: the Ministry of Construction, the Ministry of Water Resources, the Ministry of Health, the State Planning and Development Committee, and the State Environmental Protection Administration. These responsibilities are further represented at the provincial level and at the local level in the municipalities.

At central government level, the Urban Water Management Division in the Ministry of Construction is responsible for urban water supply planning and policymaking. This division has three units in charge of water supply, drainage, and water saving, respectively. If there is a problem, the unit will report to Department Director or even to the Minister if the matter is very important. They coordinate with the other departments according to the issues under consideration.

At the provincial level, the regulatory offices are usually located as sub-divisions under the leadership of provincial construction bureaus, having 3 to 5 staffs, with similar duties and management methods as their higher counterparts. They act as accesses or bridges doing jobs between central government and local departments.

At the municipal level, organizational changes are occurring. Many cities have established urban water authorities or urban water management committees instead of the old bureaus concerned with public utilities and municipal engineering departments. Water supply is initiated with natural monopoly structures, hence, its service providers are mostly the public utilities, raw water suppliers, municipal drainage companies, wastewater treatment plants, etc.

- The potable water company is usually owned by the state. Almost every city has its own potable water company, which supply 56% of the domestic water supply;

² Summarized from the People’s Republic of China Country Report prepared by Mr. Shao Yisheng, Domestic Consultant

- At least half of all urban residents or some enterprises rely on individual facilities; some of them also supply water to adjacent residents. They account for 44% of urban water supply;
- The raw water company is also controlled by the state. These companies are responsible for drawing water from water sources and transporting them to a storage place or selling them to a potable water company, mostly surface water.
- Either the municipal water drainage division or company is responsible for drainage facilities construction and maintenance, which can commonly be found in every city. They provide the services for both domestic and industrial wastewater discharges.
- The sewage disposal plant is in charge of collecting and treating city sewage, discharging the treated sewage to the river or other acceptable places. There are 307 sewage disposal plants with capacity of 1,292 m³/d in 123 cities in PRC, of which 205 plants are capable of biological treatment.

Private Service Providers

There are relatively few private service providers in PRC. These can be classified into three types: joint ventures with foreign companies, domestic private companies using BOT to provide drainage services, and domestic private capital providing drainage services through listed stock company.

Since 1994, some foreign water companies have cooperated with Chinese companies to provide water services for Chinese cities. So far, there are about 20 joint venture projects. This cooperation has advanced the water market in PRC by introducing updated technologies and management experience. However, it has also presented some problems, as reported in recent news, with a fixed higher return of 15% -18% rate of return being used by the foreign companies. With these rates, the Chinese partners often suffer losses because the rate could not be covered by the current water tariffs. Fortunately, this situation is changing with new cooperations looking at controlling operating costs.

Water Supply

In recent years, due to the large increase in water tariffs, operational cost recovery has not been a big problem for most water enterprises. Even in cities with good economies but short of water resources, the construction costs can also be paid off. Investors and financial organizations are looking at this market.

With present water quality and service standards, shortage of construction funds is not a major problem at the moment. But, with the raising of water quality standards, the investment requirements for water resources and treatment will increase. Investment demand for upgrading water-distributing networks will also sharply increase. In this case, water tariff increases will be needed. If they are not forthcoming, lack of funding will become a major constraint for sector project implementation. Furthermore, current policy does not allow collective ownership and private business to be involved in the operation of water supply networks, which is another constraint to project implementation.

Sewerage and Sanitation

In contrast with the water tariff, both the drainage discharge fees and sewage treatment fees are relatively low at present. The funds for construction of treatment facilities come from the government budget or from bank loans. Discharge fees cannot cover the operating costs, and certainly not capital cost recovery or bank loan repayment. Therefore, it is not attractive for social funds from government budget to be invested in such construction because the investment may not be repaid or recovered. Besides, the separation of water supply operation from drainage has become an obstacle to collecting social funds, especially private investment, for joint water projects construction.

Major Constraints Affecting the Delivery of Services

There are three major constraints affecting the delivery of water supply and sanitation services.

- *Low tariffs.* However water tariff and sewage discharge fees are calculated, there are many constraints in their implementation, mainly because of the inability of some groups to pay. These groups include laid-off workers, poor profit enterprises, and especially the county village residents. Also, people have gotten used to low tariffs and are reluctant or resistant to paying more.

Across the whole country, the current water tariff and sewage discharge fees are much too low to recover costs. This leads to poor service quality because water enterprises lack funds for operations, and local governmental departments have their own heavy financial burdens to subsidize operations. In addition, low tariffs encourage unreasonably high consumption and wastage.

- *Lack of funds.* Lack of funds has held back water development in PRC for a long time. There are about 13,000 km of water supply pipelines that are over 50 years old and in need of replacement. Furthermore, with the drinking water standards rising but the water resources worsening in quality, most facilities for water purification need urgent rehabilitation.

It is estimated that projected urban growth will require massive investment requirements in the sector for the first half of this century.

- *Lack of efficient regulation.* Affected by the insufficient regulatory and operational mechanisms, the water sector in PRC is usually short of profit and finances. Overlap of duties is a big problem in government organizations, which cause many time-consuming jobs. The issue of Urban Water Supply Regulation took ten years to implement; Urban Water Tariff Management took five years; Urban Water Drainage Regulation has gone through many years of discussion but was not issued until recently. This overlap or duty encroachment exhausts a lot of time and energy, leading to waste of resources, economic loss, and environmental degradation.

Although many water enterprises have been separated from government operations, many relationships connected with rights and common interests still exist. As a result, enterprises are still not very effective in their management, and sector supervision mechanisms are not well formed between service providers and consumers. Both the government organizations and the enterprises need to improve their management, efficiency, and service quality.

Policies and Strategies

Since PRC's economic reform and opening, especially when the government decided to turn the social planning economy to a market oriented one, there have been lots of changes in making policies and strategies for water planning and management which is briefly explained in the following paragraphs.

The government has strengthened sector supervision and management of water supply quality. The rapid growth of population and industry will create more and more demand for domestic water supply and industrial wastewater treatment. Although the government has made great efforts to improve the water environment, the quality of water resources has become rather poor.

In accordance with the principle of separating government from enterprise operations and establishing a modern management system, most municipal water departments have been undergoing reforms to become independent enterprises running their own water supply, drainage, and wastewater treatment systems.

The PRC government is advocating that the water industry, which for a long time has been a monopoly public service, should introduce market mechanisms to help it improve its

performance. Enterprises will be allowed to enter the construction and management of water supply facilities and wastewater treatment plants by way of build-operate-transfer (BOT) or rehabilitate-operate-transfer. Since 1994, about 20 water supply or treatment projects in many cities have been constructed or managed by joint ventures, involving several foreign companies. Some domestic individual enterprises are also involved in this.

Tariff Policy

The PRC government also wants to develop a tariff adjustment and control management mechanism in an open, fair and justified way in order to protect the legal rights for both service providers and consumers. The National Guideline for Urban Water Tariffs issued in 1998 states that the water supply tariff should be determined on the basis of cost recovery, and that the water supply enterprises should have reasonable profits.

The national guidelines, which were jointly issued by the State Planning and Development Committee and the Ministry of Construction, state that the principle of tariff setting is based on cost recovery, reasonable profits, water efficiency, and equity. The aim is to recover total cost, allowing enterprises reasonable profits, i.e. net profits of up to 8% - 10% on average.

According to the use, there are five tariff types, i.e. domestic, industrial, institutional, commercial, and special water uses. The urban water tariff method is increasing block for domestic and a two-part tariff system for the non-domestic uses.

The primary procedure of urban water tariff adjustment is processed in such a way that the enterprise submits an application to the local governmental price agency. The price agency has to hold public hearings, inviting representatives from People's Congress, People's Political Consultant Congress, and users for opinions, and finally put into effect after the approval of local government.

At present there are no wastewater tariffs, but there are initiatives in progress to establish wastewater charges across the country using similar principles to those adopted for water supply.

Conclusions and Recommendations

These conclusions and recommendations are suggested after analyzing and observing the management systems of the water supply and drainage sectors in PRC.

- A big change is taking place in the water supply and drainage sector, as the PRC government is positive on carrying out economic and institutional reforms. The current policies and strategies are open and encouraging, various types of ownership could be involved in either the service providers or in project investment.
- Though the water supply and drainage sectors have been much improved, there are still some constraints affecting the sustainable development of the water industry, of which the main three constraints are the low water tariff, shortage of funding, and inefficient management.
- The current management system in the water supply and drainage sectors needs to be improved such as water tariff, billing method, service quality, and performance standards in order to satisfy the reasonable demand of water enterprises and consumers.
- Following the market mechanism and various ownerships entering PRC's water supply and drainage sector, government has to take the necessary measures to meet this situation. There is a need to set up an organization/regulatory body independently from government, taking responsibilities for policy implementation, service supervision, guaranteeing both providers and consumers' interests.

INDIA COUNTRY REPORT SUMMARY³

Introduction

India has six mega cities (four million plus population) and up to 40 metropolitan cities. By 2021, it is expected to have 70 cities with a million plus population, 500 large towns and 4,430 medium and small towns with a total of approximately 550 million people living in urban areas. New urban areas will have to be developed to accommodate such population growth and to provide them with basic infrastructure services.

Traditionally the provision of urban infrastructure has been seen as a primary role of the government. These basic services have been generally considered as social goods to be provided by the government at free or nominal cost. The administered pricing system has been totally unrelated to the cost of the service. The funds have been provided through the government's budgetary system not only for capital investment but also to cover operations and maintenance costs as well.

Water Supply and Sanitation Sector

An assessment of Urban Water Supply and Sanitation in India is made difficult by the very weak information base. Coverage of 85% and 50% exist for the provision of safe water supply and hygienic sanitation facilities, respectively. The figures conceal the fact that water supply is unreliable, intermittent, and inequitable in most urban areas with no easy access to the urban poor. There are indicators that water quality is often poor, with consequent health impacts. Although many schemes are designed for a 24-hour supply using 150 to 200 liters per capita per day, consumers experience regular shortages, with only a few hours supply on average per day.

The poor are particularly badly served by public water supply and sanitation systems. While the services are frequently subsidized, they are ineffective and tend to perpetuate the inequitable treatment of the poor and disadvantaged members of society. The very limited services available to them means that they frequently have to find other means of getting water and have high associated monetary and time costs. This results in higher costs per liter of water for the poor as compared to the middle income and wealthy – even more so when related to their disposable income.

The resources required in achieving 100% coverage with safe drinking water and 75% for sanitation are massive and call for investments of very high magnitude. Many higher income groups have responded to the situation by partially self-supplying.

Almost all the water supply and sanitation utilities and municipal agencies are faced with problems of performance. They include inadequate training of personnel, inability to mobilize internal and external resources, inadequate project preparation, poor coordination, institutional weakness, and technology shortcomings. The difficulty is often due to a combination of issues and the whole problem is compounded by low concern for cost recovery leading to non-sustainable services.

Institutional Arrangements

The 74th Constitution Amendment Act, 1992 provides a framework and devolves upon the municipal corporations the responsibility of providing water supply and sanitation facilities in the urban areas of the country. The Ministry of Urban Development & Poverty Alleviation's role is to formulate broad policies and programs, fix water quality norms, issue technical guidelines, develop human resources, provide technical assistance, and to act as a facilitator in attracting funding for this vital sector.

³ Summarized from the India Country Report prepared by Dr. S. R. Shukla, Domestic Consultant

The state governments and urban local bodies are primarily responsible for planning, designing, implementation, operation and maintenance of water supply and sanitation systems on a sustainable basis. They deliver this responsibility through their own departments, state level boards and corporations, statutory and non-statutory bodies at the city level, and urban local bodies.

The private sector is needed to assist the government in the development and provision of infrastructure to contribute to the growth of the economy. Depending on which option is used, private sector participation can deliver many important benefits for the development and management of urban infrastructure projects. Private sector participation could help to:

- Bring technical and managerial expertise to the sector,
- Improve operating efficiency,
- Result in large-scale injections of capital and greater efficiency in its use,
- Reduce the need for subsidies, and
- Increase responsiveness to consumer needs and preferences.

Regulation

When privatization emerged as a panacea for ill-managed public water utilities in the 1990s, it was realized that some form of regulation was needed. However, the regulation by contract that developed is not working well. It is far better to have a regulatory body established before any privatization contract is awarded, because such a body can assist in the negotiations, making administration on the contract better for both sides. At the same time, regulation and some form of benchmarking of utility performance is needed, regardless of privatization. Thus, one country may have the private sector, a water authority, and local authorities, each operating water supply and sewerage systems, and each in need of some common form of regulation.

Financing Practices

Urban infrastructure development has been funded through government resources, supplemented with funds from multi-national and bi-lateral programs. As these funds were passed on to the states and ultimately to the local projects as part of the budgetary system, the concept of commercialization could not be introduced. The funds were made available partly as grants and partly as softer loans, but the recovery of costs from the beneficiaries could not be achieved effectively.

Disconnecting domestic consumers for failure to pay is extremely unusual, although this sanction is occasionally used with commercial customers. The low priority accorded to collections has a significant impact on the revenue base of water entities. While there is abundant evidence that most domestic consumers, from virtually all levels in society, are willing and able to pay much higher than the official prices for water, only the presence of large commercial and industrial users (who are metered and pay a high tariff rate) keep many of the water utilities in funds.

Major Constraints Affecting the Delivery of Services

In spite of the perceived and felt need of improved water supply and sanitation systems that would be reliable and self-sustainable, evolution of such systems remains a task to fulfill in view of certain factors. Some of such factors, which are of concern, are listed below:

- Inadequate financial resources with local bodies
- Absence of a linkage between costs of production and price of consumption
- Absence of qualified personnel and poor staff strength for maintenance activities
- Need for regular maintenance of the systems
- Inability to reduce system losses and leakages

- Inflated project costs due to high administrative and supervision charges
- Lack of paying culture
- Lack of transparency
- Lack of reliable and authentic Information

Policies and Strategies

India's urban water supply and sanitation sector faces many problems and is currently trapped in a vicious circle of circumstances. Notably:

- Many urban water supply and sanitation providers are not financially viable and are unable to maintain services without extensive subsidies;
- Existing urban water supply and sanitation services fall short of full coverage of the population, and are often of low quality due to insufficient funding of operation and maintenance. Sanitation services, in particular, are generally inadequate and access to acceptable urban water supply and sanitation services are extremely limited for those in poor communities; and
- Environmental degradation - the resource as it is currently used is increasingly insufficient and over-exploited.

These problems are well understood in India. The traditional response to them has been to centralize control at the state level, concentrate scarce skills and provide technical assistance to the cities. There is general agreement in India that this response has not worked well. This is because most urban water supply and sanitation managers lack the necessary management skills, autonomy, and accountability for their performance. The urban water supply and sanitation providers tend to lack clear objectives for management, lack transparency and accountability to consumers, and have been subject to a history of extensive political involvement at the detailed operational level.

In recent years, a fundamental policy change has started to emerge for the sector in India, as in other parts of the world, towards delegation of responsibility and accountability to local levels, balanced against a national and state policy framework. This commencement is a positive change in India with its huge diversity of local priorities and situations. The developing consensus for financial reform is even more advanced than that for institutional reform. This decade has seen capital markets develop and expand across most sectors of the Indian economy, and financial reform in the urban water supply and sanitation sector is a logical extension of this trend.

Cost Recovery

A National Policy towards Full Cost Recovery in respect of urban water supply and sanitation sector was adopted in 1993. However, full and realistic cost recovery still remains to be implemented in India. The absence of full cost recovery is not only related to an absence of willingness to pay but partly to a lack of willingness to collect.

The present state of affairs has to change and the cost of services including production, distribution, debt servicing, and operation and maintenance, has to be recovered from the beneficiaries. The financial institutions are able to meet only part of the total requirement of funds to cover the backlog of services and to meet the needs of the growing urban population. The principles of full cost recovery are intended to bring a major change in the investment pattern in the infrastructure sector.

Conclusions and Recommendations

The country has failed to evolve institutional arrangements that promote consumer responsiveness, operational efficiency, and an enabling climate for improvement and

investment. These shortfalls, in addition to funding constraints, contribute to the poor sector performance and keep the sector operating in a vicious circle.

Improvement in urban water supply and waste services will require major institutional reforms. The report makes the following recommendations:

- Establish state level water supply and sanitation regulatory bodies. Mandate to provide efficient water and sanitation services to the people at affordable costs.
- Devolve service responsibilities to municipal authorities. Mandate key good practices such as accounting separation, long-term plans, and consumer consultation.
- Reform the state service providers; separate policy and regulatory functions from operations; disaggregate operations into functional areas; and commercialize private entities.
- Rationalize tariff structures and tariff-setting procedures through legislative changes and a system of incentives and sanctions.
- Reform financing systems to enable direct financial market access for local authorities and enterprises, and new forms of financial intermediation, supported by leveraging local resources.
- Create a comparative competition facility to collect and share performance data of Indian and foreign urban water supply and sanitation agencies/utilities to enable assessment of agency performance and provide benchmarks for improvement.
- Implement local innovations that include involving the private sector in a variety of ways; develop new approaches to serving and involving disadvantaged groups; reform tariffs; increase efficiency, improve technical and operational practices, and access new sources of finance.
- Demand-led capacity building; provide technical assistance, in response to municipal and utility requests.

The report recognizes the need for an effective implementation plan to achieve the necessary changes. It proposes a program of institutional reforms, including the establishment of state regulatory bodies; and financial restructuring to promote financial viability through tariff reforms and efficiency gains and to increase the capital available to finance viable entities in the sector.

Regulation Framework

In order to achieve substantial and far reaching reforms in the water sector within the states in the country, it is proposed to establish independent State Regulatory Bodies. The primary objective of these regulatory bodies would be to determine the tariffs or range of tariffs for water and wastewater, to protect consumers from likely abuse by the new city/regional water supply corporations which will have monopoly power in licensed areas, to create the environment for attraction of viable investments in the water supply corporations, and to promote economic efficiency in the sector. It will also regulate all the existing urban local bodies in order to create incentives for restructuring at the local level. Its establishment will act as catalyst for reforms by removing arbitrariness in setting service standards, tariffs and in promoting new sector investments. It will also help bring in transparency, accountability, and customer orientation among sector institutions.

NEPAL COUNTRY REPORT SUMMARY⁴

Introduction

The water supply and sanitation sector is currently going through a very interesting phase in the country. The emphasis in the past has been more on quantitative aspects without adequate attention being given to the quality of service provided. It is for this reason that the government has already initiated actions towards bringing about the necessary sector reforms. This has become even more pertinent with the new strides being taken to mobilize private sector participation in the development of the sector. The focus will be on the establishment of a sound regulatory system to ensure that the desired results are achieved in the most cost-effective manner.

Water Supply and Sanitation Sector

Despite the high priority accorded to investment in the sector since the early 1980s, the service level in terms of quality, quantity and reliability of water supplies has not been satisfactory. Though substantial coverage in the water supply sub-sector has been achieved, from 11% to 66%, over the same period, coverage in the sanitation sub-sector has been relatively low (25%). Sustainability of the completed water supply and sanitation facilities particularly in rural areas is one of the major problems.

As water is still largely perceived as a social good, the government plays a dominant role in the development of water supply sector in the country. It is only recently that international and national NGOs have started to play a substantial role in the development of the sector. The private sector role is still very insignificant.

The two ministries that are connected directly with the development of the sector are the Ministry of Physical Planning and Works (MPPW) and the Ministry of Local Development (MLD). The MPPW oversees the following agencies:

- Department of Water Supply and Sewerage, the largest service provider in the country. It is responsible for planning, implementing, and monitoring its own programs. As the lead agency for the sector, it is responsible for defining service levels, setting design standards, providing guidelines on water quality standards, and maintaining database on coverage.
- Nepal Water Supply Corporation (NWSC), a semi-autonomous corporation with the mandate for the development and operation of water supply and wastewater utilities of major cities and towns on a commercially viable basis.
- Rural Water Supply and Sanitation Fund Development Board allocates resources to support organizations and communities for the implementation of demand-driven water supply and sanitation schemes.
- Melamchi Water Supply and Development Board, established in 1998 to overcome the acute water shortage problem of the Kathmandu valley.
- Private Sector Participation High-Level Committee, formed in 1997 to create an enabling environment for private sector participation in the management of the Kathmandu Valley urban water supply and sanitation services.

The MLD is responsible for local governance through institutional, technical, and financial support to 75 district development committees, 56 municipalities and 4,200 village development committees.

There are a number of NGOs in the country, both national and international, which have been quite active in providing water and sanitation services, especially in the rural areas.

⁴ Summarized from the Nepal Country Report prepared by Mr. Rattan Kumar Siddhi, Domestic Consultant

Most of them are involved in overall community development in which water supplies, hygiene, health education, and sanitation form important components.

Large-scale private service providers do not exist in the country. There are instances where individuals or trusts have been set up for providing water supply to religious places and for social institutions. In the Kathmandu Valley, due to the scarcity of water available from the NWSC system, there exists a flourishing business in water vending through water tankers. There are also a number of small companies providing tanker service catering to such needs.

There is no proper regulatory system for the water supply and sanitation sector. The government has statutory powers to safeguard consumer interests, but their enforcement has not been effective because the government itself is the major service provider. The government agencies that monitor drinking water quality, environmental and effluent standards have not enforced in an effective manner.

Major Constraints Affecting the Delivery of Services

- *Low Level of Authority Delegation to Local Institutions.* Local institutions such as the municipalities do not have adequate control over the sector resources allocated by the central government. Such resources are largely under the control of the government employees, who are not accountable to the local institutions. With some exceptions, the government agencies execute the development projects with minimal local consultation.
- *Lack of Autonomy to Sector Institutions.* The NWSC, created to operate the urban water utilities as a commercial entity, is not independent to fix tariffs and charges for its services. The government has to give consent and is always reluctant to approve such increases because politicians consider this to be an unpopular move. The General Manager of the NWSC is also a government nominee and as a result is not accountable to the Board.
- *Inadequacy of Institutional Development.* Adequate efforts have not been made to strengthen the local institutions to take up their service responsibilities and little attention is paid to develop the capacities of the community to operate and maintain the facilities.
- *Insufficient Mobilization of Private and Non-Government Sector.* The potential of the private sector, NGO and communities is not adequately developed and utilized.
- *Low Cost Recovery in Urban Sub-Sector.* The government is reluctant to enforce, mainly for political considerations, its stated full cost recovery policy in the urban sub-sector. For this reason the tariffs are highly subsidized, to an estimated 60%. The revenue earned is barely enough to meet operating and routine maintenance expenditures.
- *Low Beneficiary Contribution in Rural Sub-Sector.* Mostly, the community contribution to government-supported projects is nominal, much below the community capacity.
- *Low Level of Community Participation in Rural Sub-Sector.* Because of the low community participation during scheme implementation, community ownership of completed facilities is not adequately developed. As a result many service facilities deteriorate rapidly post implementation.
- *Inadequate User/Municipality Representation in the NWSC Board.* The municipalities and the consumers served by the NWSC are not adequately represented in its Board. As a result it is not accountable to the consumers it serves.
- *Hand Over of Completed Rural Schemes.* Reportedly, the unsatisfactory progress in the handing over of rural schemes to local water users committees is because of the unavailability of adequate funds. Some of the larger town water supply systems have been handed over to the NWSC.
- *Absence of Sector Development Plans.* Regulations require the local bodies to prepare water supply and sanitation development plans, mobilize and allocate resources, and execute their plans and programs. They are severely constrained by the absence of comprehensive sector development plans. This leads to ad hoc investment decisions.

- *Capacity Building of Sector Institutions.* Poor technical and administrative management has contributed to poor design and appraisal of schemes, poor construction quality, delay in project implementation, and inefficient and ineffective utilization of sector resources.
- *Inefficient Resource Mobilization.* The local institutions tend to depend on the central government, which in turn depends on foreign aid and grants. The government focus is more on securing international funds rather than the effective and efficient use of the available funds.
- *Absence of a Regulatory Mechanism.* Water quality standards, effluent quality standards, and other service quality standards have not as yet been truly monitored and enforced. Additionally, tariffs are not rationally fixed and sector performance is not systematically regulated.
- *Perception of Water as a Social Good.* Most people in Nepal consider water as a social good rather than an economic one and expect the government to provide water services free of cost. Such perception inhibits private sector participation in the development and delivery of water services.
- *Lack of Sector Co-ordination.* The roles and responsibilities of the various government agencies and providers overlap in the provision of water supply and sanitation services to urban areas.

Policies and Strategies

The National Water Supply Sector Policy was approved in April 1998. The guiding policies and strategies for the water and sanitation sector were clearly spelt out in the Ninth Plan (1997-2000). They are to:

- increase water supply coverage from 61% to 100% by 2002,
- accelerate decentralized administration through effective devolution,
- mobilize effective community participation at the local level,
- enhance the capacity of local organizations,
- ensure demand management and reduction in unaccounted for water, and
- attain financial viability through sound cost recovery mechanisms.

Recently initiatives have been taken to involve the private sector in the development and operation and maintenance of water utilities. Preparations are under way to lease contract the NWSC-managed water utilities of Kathmandu Valley to a private operator and it is anticipated that more public-private-partnerships will follow. As a result, legislation has been amended with the following objectives:

- To transfer NWSC-operated water supply and sewerage utilities to private sector operators and give them necessary powers,
- To authorize the private operators to take responsibility for the public assets without ownership transfer and operate them,
- To make provisions for special facilities to be provided to the private operator, and
- To establish an autonomous Regulatory Board.

Conclusions and Recommendations

There is an urgent need to establish a regulatory body to address the problems in the sector.

The objectives of regulation should be to:

- ensure consumers receive proper service,
- ensure that tariff policies of the government are strictly implemented,
- ensure that service providers operate efficiently,
- work as an independent and autonomous body,
- protect consumer's rights and interest with special consideration to the needs of low-income groups,

- control the monopoly power of the service provider, and
- minimize political interference.

The role and functions of the regulatory body would need to encompass:

- tariff regulation within fixed principles/policies of the government
- service quality regulation, both setting and monitoring
- regulation of other service standards
- protection of rights and interests of consumers
- dispute resolution between consumer and service provider
- penalizing/checking for non-compliance or violation of specific provisions
- conducting public awareness/education campaigns and consultations
- monitoring the activities of service providers
- regulating/checking the monopoly of service providers
- ensuring coverage as specified in the contract and in new areas as agreed
- ensuring autonomy of utilities
- monitoring water abstraction to ensure consumptive use of ground and surface water
- providing advice to government
- advising on necessary legal framework

A single regulatory body having jurisdiction over both public and private water utilities is recommended. Initially, the body should be for the Kathmandu Valley urban water supply and sanitation services to be gradually expanded to a national level body. The body should comprise of 3 to 5 professional members. It should be fully transparent in its functioning, accountable and responsive to consumer needs. Complete autonomy can only be achieved if the regulatory body is established by legislation. The mode of selection/appointment of the members is equally crucial for ensuring independence and to resist any sort of political interference.

PHILIPPINES COUNTRY REPORT SUMMARY⁵

Introduction

The Philippine water supply, sanitation and sewerage sector has been governed by a mixed set of legislation and institutional arrangements that have been tested, modified and put in place over a span of the last 50 years. Overall, the 'rules' have been constantly changing and adapting. This is evidenced by numerous amendments and policy clarifications. At the same time, this absence of a stable framework has led to many deficiencies and unaddressed policy gaps. Regulation is one of these deficiencies.

Water Supply and Sanitation Sector

The following government agencies are involved in the water and sanitation sector. The National Economic Development Authority ensures that all agency programs are consistent with national priorities in the Medium Term Public Investment Program. The National Water Resources Board coordinates the overall policy framework for water resources development and management. It was created to guide an orderly and scientific development of all water resources consistent with the principles of optimum utilization, conservation, and protection to meet present and future needs. The Department of Environment and Natural Resources formulates and enforces policies and guidelines for environmental protection and pollution control. It is responsible for watershed protection and assists in water resources management.

The Department of Finance is responsible for the generation and management of the financial resources of the government. The Department of Budget and Management plans the budget allocations for the government agencies, including capital and operating expenditures. It also ensures that budget releases conform with approved plans and programs.

The Local Water Utilities Administration (LWUA) is a specialized lending institution mandated to promote and oversee the development of local water districts based on financial viability of projects. The provision of wastewater disposal systems in communities outside metropolitan Manila are largely coordinated through LWUA. Its assistance to water districts principally comes in the form of capital development loans, management advice, engineering support, and human resources development. LWUA also exercises regulatory powers over the water districts on tariff and performance issues.

The Metropolitan Waterworks and Sewerage System (MWSS) operate and maintain water and sewerage services in metropolitan Manila as an autonomous government owned and controlled corporation. As of 1997, MWSS provided service to seven million people, or about 10% of the country's population. In 1997, the government privatized MWSS by awarding two major private concession contracts.

Numerous other agencies conduct responsibilities for the provision of rural services, including the Department of Public Works and Highways and the District Engineering Offices. In addition, many non-government agencies and community-based organizations have been implementing successful water and sanitation programs and small-scale entrepreneurs have stepped in where there are serious service deficiencies and unmet customer demand.

There are various forms of ownership and management of water. They can be grouped in four basic modes:

- In Metropolitan Manila, the Metropolitan Waterworks and Sewerage System is mandated through its charter to provide the services. In 1997, MWSS signed 25-year concession contracts transferring operational and capital development responsibilities to the private sector.

⁵ Summarized from the Philippines Country Report prepared by Mr. Wilfrido C. Barreiro, Domestic Consultant

- Local government units (LGUs) either at the municipal or provincial levels are generally responsible for direct service provision in other provincial urban centers.
- Since 1972, LGU's had an option to form and transfer responsibilities to water districts to operate, maintain and improve the water facilities.
- In other rural areas and some sub-areas within urban areas, services are self-provided.

Options for private sector participation under any of the modes is possible. In fact, the Government has adopted a policy of promoting private sector participation, either through a full transfer of responsibility (concessions and joint ventures) or other modalities (BOT, lease and management contracts, etc.). There are also water vendors operating and providing tanker services to water-scarce areas and retailers of bottled water or reprocessed water ('purified water'). They supply within franchised service areas where there is unmet consumer demand.

In general, sector performance over the last 20 years has been stagnant. Coverage figures, for example, have been hovering in the 75% to 80% range since the mid-1980s. However, 95% of the urban water systems provide intermittent supply, the typical number of hours when water is available in urban areas is 16 hours daily. Ninety percent of urban water supplies are disinfected. Only 79% of the rural water supply facilities are functioning. Capital investments for water supply and wastewater infrastructure have been in the range of 9% to 12% of total public investment.

Major Constraints affecting the Delivery of Services

- *'Contractualization' of tariff decisions; loss of the affordability link.* With the rising trend towards private sector participation, decisions about tariff structures, methodology for tariff adjustment, and related issues have been put in the concession agreements and beyond the reach of consumers. This is an unfortunate side effect. Debates about the level of tariff adjustment, for example, have been reduced to what is allowed (or not) by the agreement, with little or no consideration of affordability levels and consumer views.
- *Trend toward 'regulation by contract'.* Unless a serious initiative to establish the regulatory mechanism is put in place the trend towards regulation by contract with all its pitfalls and imperfections will continue. The incentive for organizing contract-based regulatory arrangement is with the parties involved in the contract itself.
- *Availability of capital financing for sector projects.* The shortage of sufficient domestic equity capital or long-term credit for infrastructure investment, especially in water supply and sewerage services, indicates that the bulk of such financial resources must be secured from foreign sources.

Potential private investors would seek a clear regulatory mechanism, in addition to performance guarantees from the government. It also remains to be seen whether foreign investors would be willing to commit substantial funds to private water supply distribution ventures in which they may only hold a 40% share at most, without taking a controlling stake in the management of the operations. This question is of particular concern, as the major opportunity for efficiency gains in the water supply sector exists in distribution, billing, and collecting revenues. Effective regulation is needed regardless of whether the government pursues a policy of promoting private sector investment or not.

- *The purpose of public hearings: to inform or to agree?* There is no consensus on the purpose of public hearings for rate adjustments. While it is clearly a legal requirement, its objective – whether to merely inform or to seek agreement – is largely ambiguous. There has not been a clear trend or pronouncement from regulatory authorities (or the court system) on this issue.

- *Affordability vs. minimum O&M costs.* The rate debate boils down to an affordability issue. This suggests more serious consideration of the affordability issue and consumer inputs during the project preparation stage. The problem is that during the planning stages, it is not in anyone's "interest" that the project is cut back and thus there is really no incentive to reduce the scale and costs of the project. There is an argument for regulatory interventions even during the project development stage. Many continue to argue for putting teeth into regulatory mechanisms.
- *Price increase constraints.* Price increases are presently constrained to 60% of current charges.

Policies and Strategies

One of the recent institutional innovations promoted in the sector is the participation of the private sector in financing, ownership, and operations of water and wastewater facilities. This innovation has brought to light the need for reviewing existing regulatory arrangements, particularly in privatization modes, which involve the transfer of responsibilities from existing government structures to the private sector through BOT contracts, concession contracts, and leases.

The BOT Law of 1994 recognizes 'the indispensable role of the private sector as the main engine for national growth and development, and provides the most appropriate incentives to mobilize private resources, for the purpose of financing the construction, operation and maintenance of infrastructure and development projects normally financed and undertaken by the Government. Such incentives, aside from financial incentives as provided by law, shall include providing a climate of minimum government regulations and procedures and specific government undertakings in support of the private sector.'

Almost all development projects, including water supply treatment and distribution, sewerage, and drainage may be implemented through BOT and similar schemes.

In many cases, BOT proposals are insufficient to respond to the actual needs of the water utilities, for example, in situations where the distribution system accounts for high losses and non-revenue water. Broader concession contracts where the proponents also take a responsibility and risk in the distribution of the water are likely to be more appropriate in these cases.

The privatizations in Metro Manila, in the Clark Economic Zone, and in the Subic Bay Freeport follow the concession model. In the absence of a national regulatory framework, the 'regulatory' arrangements have been built into their respective concession agreements. Such 'soft' regulatory arrangements are littered with conflict-of-interest situations where the regulator is part of the joint venture operating the system (the Subic case) or the regulator is the other party to the contract (the MWSS case). The establishment of a national regulatory institution requires legislative action. The government has yet to come to grips with this issue.

Conclusions and Recommendations

The basic principles which ought to govern the sector processes are: (i) establishment of an enabling environment, (ii) transparency, and (iii) public awareness.

The following issues were raised in the one-day workshop of stakeholders:

- Charging an adequate tariff and effective control of operating costs are important for achieving financial viability. Capital financing is principally sourced from equity and loans.
- Water supply and sewerage are capital-intensive undertakings. The tariff is a key factor in any utility's ability to attract needed capital financing. There was a consensus that cost recovery through user charges should include capital expenses.

- When the tariff is artificially low, potential lender and creditor confidence is weakened, thus affecting any utility's ability to borrow. Lack of lender confidence is dependent on the 'bank-ability' of the project and the operator's reputation. This translates to the viability of operations. There is a need for automatic tariff adjustment mechanisms to recover losses.
- The creation of the MWSS-Regulatory Office was an attempt to quickly respond to the need for a regulatory mechanism so that the privatization process would not be derailed. Consequently, many of the regulatory provisions in the concession contract were not thought out. The transparency of the privatization intentions and process (the 'spirit') was questioned.
- There is a clear need for regulatory innovations to allow more flexibility in the face of external abnormalities, e.g., El Niño drought, foreign exchange depreciation. Wider acceptance of the principle that water is an economic good that needs to be priced efficiently has to be vigorously promoted. Service objectives have to be reviewed and prioritized.
- In the rural sector, willingness and capacity to pay are much more complex. The 'water is free' mentality is still fairly prevalent.

The following consensus was reached in the workshop:

- Regulatory systems are designed to:
 - Ensure compliance with standards of acceptable service as established in the contract between customers and the utility;
 - Protect the consumer from possible monopolistic behavior of the service provider; and
 - Create a business environment which promotes commercial viability and is attractive to the private sector.
- The regulatory authority should have:
 - Political independence - members of the regulatory board should be appointed for a fixed period of time and only be removed for abuse of authority or illegal activities.
 - Transparency - all the proceedings of the body should be a matter of public record.
 - Access to legal recourse, whenever this may become necessary.

SRI LANKA COUNTRY REPORT SUMMARY⁶

Introduction

Increasing the provision of safe drinking water and sanitation services throughout the country is a priority of the Government of Sri Lanka. The National Water Supply and Drainage Board (NWSDB) identified the need to create a regulatory body in its Corporate Plan (1999-2005) to ensure the quality and reliability of service, establish reasonable tariffs for water and sewerage, and safeguard the stakeholders interests.

Under the Policy Reform Program, the Design of a Regulatory Body for Water Supply and Sanitation Sector in Sri Lanka has been finalized and the Development of Sewerage Tariff has been completed. The Draft Statute for the Proposed Regulatory Body has been submitted for the review of the Consultative Committee.

Water Supply and Sanitation Sector

Water consumption has risen continuously in the last decade from 87 million cubic meters in 1990 to 203 million in 1999. The most remarkable increase has been in the Greater Colombo Area, which accounts for nearly 25% of the increase. The number of connections from the piped water systems more than doubled increasing from 187,780 household connections in 1990 to 492,736 in 1999. Forty-five percent of the investment came from donor funding. While there have been significant improvements in providing access to water in both urban and rural areas, much remains to be done to meet the government's goal of providing safe drinking water to all by 2010 and to improve the quality of service provided to consumers.

There is a little sewerage and treatment capacity in Sri Lanka. Currently the systems serve approximately 625,000 people or about 20% of the population in the greater Colombo Area. There are no major sewerage facilities available in the rest of the country, even in large towns which depend on on-site sanitation using septic tank and soakage systems or uncontrolled discharge of raw sewage into the nearby waterways. Municipal sewerage systems are now being planned for Kandy and Nuwara Eliya with Japanese assistance.

Institutions

The principal government entities responsible for the provision and regulation of water supply and sanitation services are the Ministry of Urban Development, Construction and Public Utilities (MUDCPU), the National Water Supply and Drainage Board, and local governments. Under the institutional framework there is overlapping jurisdiction between NWSDB and the local governments.

The MUDCPU is the parent ministry of the water supply and sanitation sector and is responsible for sector policy, planning, budgetary approval, and financial control. The ministry also has regulatory responsibility in relation to the agreement of tariffs. It plays an important role as coordinator of activities in the sector and provides links with central and local government stakeholders.

Both the national government and local authorities provide water supply and sanitation services in Sri Lanka. The primary responsibility for water supply and sanitation services lies with NWSDB. It has the responsibility to develop and operate water supply and sewerage schemes; distribute water for public, domestic, and industrial purposes; and to provide bulk water supplies to local authorities, other institutions, and organizations.

The local government bodies also have statutory responsibilities for water supply and sanitation within their administrative limits, but they can be required to transfer these

⁶ Summarized from the Sri Lanka Country Report prepared by Mr. W. Jayasiri de Silva, Domestic Consultant

schemes to NWSDB. A few local governments have opted to operate their own water supply schemes, while others have transferred control of water schemes to NWSDB that operates the systems on their behalf.

There are currently 712 urban and rural water supply schemes operating in Sri Lanka out of which NWSDB operates 284 schemes, municipal councils 3 schemes, and urban councils 5 schemes. Pradeshiya Sabhas often manage the rural schemes with support from the community groups and with some technical assistance from NWSDB.

There are only two institutions currently involved in the on-going provision of sewerage services, the Colombo Municipal Council (Colombo Municipal Council) and the NWSDB, the latter on a very limited basis in a few industrial estates, several housing areas, and other special situations.

The provision of water supply and sanitation services in Sri Lanka is entirely dependent on the public sector. There is no independent regulatory body for the water supply and sanitation sector in Sri Lanka except for the self-regulatory measures adopted by the service providers. Steps are being taken to create one under the on-going Policy Reform Program funded by ADB.

Major Constraints affecting the Delivery of Services

Tariffs

The tariff is a powerful and versatile management tool capable of promoting revenue sufficiency, economic efficiency, equity and fairness, income redistribution, and resource conservation. It requires public and political acceptability, simplicity, transparency, and ease of implementation. The tariff should assure the short-term financial viability and the long-term sustainability of the service provider.

Property tax remains the major source of revenues to recover costs of operation and maintenance of the CMC sewerage system. While substantial revenues are collected they go into a general fund to be dispensed on a basis of perceived priorities across a broad spectrum of services for which the city assumes responsibility. At present there is no mechanism to earmark a part of the property tax for sewerage purposes with the result that there is no opportunity for responsible financial planning for cost recovery.

If the properly designed tariffs and subsequent revisions are not implemented at the correct time, they act as major constraints.

Institutional

Under the current institutional framework, there is an overlapping jurisdiction between the service providers. The local authorities have statutory responsibility to provide water supply and sanitation facilities within their respective areas. The provincial councils also can exercise these powers in their provinces. NWSDB can develop and operate water supply and sewerage systems under its area of authority. If not sorted out properly, this overlapping may act as a constraint in providing services.

Another constraint in the present institutional structure is the inability to handle private sector participation.

Autonomy

There is lack of autonomy to decide on certain matters such as tariffs, staff recruitment, and procurement.

Funding

The funds needed for investment in the water sector to the year 2005 show a projected shortfall of some 50% due to the constraints placed by the capacity for public borrowing.

Water Rights

There is no system for the allocation of water among competitive users. Many of the large water users are government agencies which are not required to consider other users. This creates conflicts among users, particularly in periods of drought when water resources are not sufficient for liberal use.

Policies and Strategies

The policies pertaining to the sector are spelled out in the following documents:

- *Presidential Task Force on Housing and Urban Development*

Sets objectives for potable water supply and sewerage services and for facilitating investment in them. It includes encouragement for private sector involvement, independent regulation, and full cost recovery through tariffs.

- *Urban Water Policy (Draft)*

The financial resource priorities shall be based on cost recovery but retaining a lifeline tariff up to 10 cubic meters per month. Cross subsidies between user groups to be progressively phased out.

- *National Policy for Rural Water Supply and Sanitation Sector*

The principles of the policy are based on the premise that water is a basic human need which calls for equitable allocation of resources, that it should be recognized as an economic good, and that the provision of water and sanitation services should be people centered and demand driven. The policy has identified the need for regulation to ensure efficiency, reliability, and quality of supplies and services.

- *National Policy on Private Sector Participation in Water Supply and Sanitation*

The private sector is invited to enter into partnership with the government to operate, maintain and expand water systems. The policy sets targets for improved water supply coverage and standards. An independent regulator will be established to protect the interests of the consumers.

- *NWSDB Corporate Plan*

Sets out policies and strategies for the water supply and sanitation sector in its corporate plan 1999 – 2005. The policies include:

- Commitment to total customer satisfaction,
- Satisfactory coverage of water supply and sewerage facilities,
- Quality in service and products,
- Reduced operational cost, improved efficiency and maintenance of affordable tariff, and
- Capital investment through funding other than conventional means.

A series of detailed technical, institutional, and financial strategies are set out to achieve these goals. They include reference to the need for a regulatory authority to ensure that the service provided is at the agreed standard and reliability, the charges levied for water and sewerage facilities are reasonable, a service commensurate with the charges levied is provided, recognition of customer interests, the interests of employees of NWSDB and other stakeholders. With fair, objective, and intelligent regulation all stakeholders in the sector will benefit. The responsibilities of the regulator should cover the three main areas of economic regulation, performance regulation, and quality regulation.

Conclusions and Recommendations

Legislation to set up a regulatory body for the water and sanitation sectors is well advanced. It embraces the following objectives:

- Promote universal access to water and sanitation services.

- Promote the financial viability of the sector through full cost recovery.
- Promote the efficient provision of water supply and wastewater services.
- Promote water supply and wastewater services that meet appropriate standards of quality.
- Protect the rights of consumers and service providers.
- Encourage competition in the sector where feasible.
- Promote public and private sector investment.
- Promote efficient use of water resources and demand management.

The proposed regulatory body shall be termed as The Water Supply and Sanitation Regulatory Commission of Sri Lanka. The commission shall consist of three full-time members. The regulatory body shall be independent from the service providers it regulates and from political influences. Its decisions should be guided by the technical, economical, and financial criteria and should not be subjected to short-term political interference.

The regulator shall have the following functions in relation to the water services and sanitation sector and service providers.

- Advise the government on policy relating to water services and sanitation with a view to improving services and promoting efficiency.
- License service providers.
- Approve contracts of private sector service providers.
- Review and approve tariff and other charges.
- Prescribe and monitor service quality and performance indicators.
- Promote consumer rights and obligations.
- Facilitate public education, consultation and awareness.
- Undertake dispute resolution, and
- Conduct or commission surveys and research studies.

This report supports those proposals and adds the following recommendations:

The regulatory body should be a small, streamlined organization. It should make extensive use of outsourcing for activities such as water and wastewater quality monitoring, legal matters, financial management, information collection and data analysis, public awareness, etc. to curtail the recurrent costs.

Regulation imposes costs on society. It is important to adopt regulatory approaches that are cost effective. It is always better to regulate outputs rather than dictate inputs and methodologies. The service provider should be allowed to use its own technological and operational methods to achieve the desired outcome.

The government should develop and implement a plan for building consensus among the affected government entities and educate the public and NWSDB employees about the purpose and process for creating a regulatory commission. The creation of the regulatory commission shall be accelerated in light of the on-going process to attract private sector participation in several areas in the country.

To establish the regulatory body and build the institutional capacity to effectively carry out its functions will take a few years. To reduce the time for the commission to be fully operational after the act is passed, it may be desirable to create an interim regulator or a shadow regulator. The interim regulator would be responsible for setting up the structure of the commission and launching the process to develop the principal regulations and operating guidelines.

THAILAND COUNTRY REPORT SUMMARY⁷

Introduction

The water sector in Thailand is fragmented, having in the order of 14 main agencies under six different ministries responsible for policy setting, planning, and operation of water and wastewater services.

Water supply in Thailand is principally the responsibility of the Metropolitan Waterworks Authority (MWA) and the Provincial Waterworks Authority (PWA). The MWA is responsible for water supply in Bangkok and the adjoining provinces of Nonthaburi and Samutprakan. The PWA provides water in the remaining 73 provinces. Some 141 municipalities own and operate independent water supply systems in urban areas under the supervision of the Public Works Department.

Wastewater services are not as advanced or extensive compared to water supply. Earlier, the Public Works Department implemented community wastewater systems throughout the country but since 1992 the Pollution Control Department (PCD) has been responsible for the planning and construction of wastewater facilities except in Bangkok. The operation and maintenance of wastewater facilities is the responsibility of either local government authorities (municipalities) or the Wastewater Management Authority (WMA).

Water Supply and Sanitation Sector

In 1999, the total population of Thailand was 54.2 million people. The total amount of water supply in the service area of the MWA was recorded at 856 million cu m with a total number of 1.4 million connections (approximately 4.5 million people), and the total water sale for the PWA was 414 million cu m with the total number of 1.6 million connections (approximately 6.3 million people). There are no formal published performance standards and level of service against which to judge the performance of water utilities.

Thailand's under investment in environmental infrastructure is clearly evident in the municipal wastewater management sector. Only a small proportion of total urban wastewater generated in the country presently receives any treatment. Currently, only 29 municipal wastewater treatment plants with a combined treatment capacity of 430,000 cu m/day have been constructed in 25 municipalities. This total capacity is sufficient to provide service to a population of approximately 2.25 million or 10% of the total urban population. Furthermore, virtually all of these systems are experiencing operating problems affecting the efficiency of treatment.

Institutions

- The Metropolitan Waterworks Authority was established as a state enterprise in 1967 to combine four separate waterworks in the Bangkok area. It has the full range of powers to invest, construct, manage, regulate, and charge for the services.
- The Provincial Waterworks Authority. The mandate of the PWA covers the supply of water for all regions of Thailand other than Bangkok, which falls under the MWA. The PWA's objectives include promoting the efficient use of resources and facilitation of private investment in, and operation of, water systems on a commercial and sustainable basis,
- The Wastewater Management Authority. The primary role of the WMA is to act as a catalyst in bringing together public and private sector funds for the purpose of developing and implementing wastewater collection and treatment systems in designated wastewater management areas.

⁷ Summarized from the Thailand Country Report prepared by Mr. Damrus Trairattanapa, Domestic Consultant

Tariff Regulation

Water supply and wastewater services have normally been undertaken by the government because of its responsibility for the general well-being of the whole population. The government has implicitly, or explicitly, chosen the level of service that it will provide and has decided how much consumers will be charged. Often, tariff levels for water has been kept low so that the charge is affordable by the poorer strata of the community, and the government has subsidized the service.

Both the MWA and PWA, with Cabinet approval, are empowered to set tariffs and other charges for the retail price of water. The MWA's tariff is a unique rate for its service area. In certain exceptions, the PWA's tariffs may be set at other than the national rate. As structured, PWA will continue to determine tariffs and the rate which will be paid for the contracted supply of treated water in case of privatization projects. It may be necessary for PWA in the near future to establish regional tariffs if full recovery of costs for the local systems, including depreciation, plus the cost of treated water to PWA, exceeds the standard tariffs. The recommended structure also leaves the PWA free to manage cross subsidization between systems, or government subsidization of special classes of water users.

Local government agencies have the authority to implement wastewater tariffs but only 4 of the 25 operating wastewater treatment plants have done so. The limited application of tariffs is attributable to a number of factors including lack of commitment, weak sense of ownership, low willingness to pay, and politicization of the process.

Major Constraints affecting the Delivery of Services

Water utilities have their own social, economic, and financial characteristics that create special considerations as:

- Water is viewed as a public resource to be share; as a consequence it may be difficult for the government to accept concepts of commercial exploitation and cost recovery and allocation according to market forces,
- It is common for the price of water to be subsidized to achieve social objectives; ignoring the full cost of water will under value the resource, cause misallocation among users, and make investment decisions difficult,
- Demand management is difficult; an increase in tariff can result in a decline in volume sold and consequently total revenue,
- Investment tend to be capital intensive, lumpy and irreversible, creating a high opportunity cost of capital in a business that has limited growth potential and prospects for diversification, and
- Water utilities operate in a monopoly environment; a regulatory framework is required to balance public and private goals.

There are two key elements for the state enterprises to encounter with regard to the implementation of water supply and sanitation services.

Outside factors

- The political interference by appointing close relationship persons who lack knowledge and experience to be senior executives.
- The stringent acts and regulations of many government agencies that supervise and control the state enterprise's policy and operation cause difficulties for the latter to get approval from these agencies.
- Water tariff and budget are controlled by the government that limits sector investment in public services.

Inside factors

- Lack of clear-cut policy and planning both in the short-term and long-term so that sector implementation does not correspond with the strategic plan and operation plan.
- The organization structure limits the recruitment of highly experienced personnel since the number of staffs and salaries are limited.
- High organization expenses due to over staffing.
- Lack of incentives to work due to unsuitable regulation for promotion and wages.
- Lack of marketing challenge due to monopolistic nature of business.
- Lack of research and development in order to increase organizational efficiency.

Policies and Strategies

To date, private sector participation in Thailand's water supply sector has been limited while in the wastewater sector it has been insignificant. However, the government's policy is aimed at substantially increasing the role of the private sector in the provision of water supply and wastewater management services and both the MWA and the PWA are developing and implementing private sector participation strategies.

A well-developed regulatory and institutional framework is a critical condition for attracting private sector investment in the water and wastewater sector in Thailand. The government's strategic policy document called Master Plan for the State Enterprise Sector Reform proposes complete separation of policy regulatory and operating functions between the relevant ministries and water operators, and proposes an independent water regulatory body to take over the regulatory functions from both the ministries and water operators.

Conclusions and Recommendations

It is proposed that the Office of National Water Management (ONWM) be established to be responsible for reviewing, approving or modifying water and wastewater tariff levels and structures. It would also be given defined powers and independence in terms of monitoring and enforcing the contractual obligations entered into by water corporations and related enterprises in Thailand including conditions of performance in relation to customer service, investor obligations, quality requirements, and other designated responsibilities. The ONWM would also liaise with line agencies responsible for health, environment, and other functions of government that have important water dimensions.

The ONWM will have a policy arm and a regulatory arm. The policy arm is an agency dealing with the policy process and must reflect political judgements and processes. The regulation process, while being created out of the policies of the government, has an obligation to enforce and arbitrate on contractual performance and tariff issues in terms of the agreed principles of regulation laid down by government. It is thus desirable that the ONWM has quasi-judicial independence, both to give the private investors confidence in neutral administration of the agreed rules and signed contracts, and to assure customers and investors alike that water decisions will become less political and more reflective of customer needs and private investors capacities to invest.

The Master Plan proposes complete separation of policy, regulatory, and operating functions between the relevant ministries and water operators, and the creation of an independent water regulatory authority to take over the regulatory functions from both the ministries and water operators. It also points out that clear definition and separation of roles and activities will ensure that regulators operate to protect consumers and to promote competition and efficiency.

The main objectives in establishing an independent regulatory body are to:

- Reduce the financial burden on government resources.
- Introduce a transparent and vigorous regulatory system.

- Attract new investment and commercial expertise into the water sector.
- Apply tariff structures that facilitate cost recovery on investment and maintenance.
- Improve quality and availability of services.
- Environmental sustainability of water resources and infrastructure.

The general responsibilities of the regulatory body would include:

- Advise the government on general policies, targets, and strategies.
- Set general policies on tariff determinations and service provision.
- Provide policy on customer service standards and water operator standards.
- Approve the license fee and the fee for the water business operation.

It is fundamental to the efficient working of the proposed regulatory structure that the regulatory body will have cabinet level endorsement, and that contracts under its ambit will not be subject to independent ministerial intervention. The focus needs to be more on necessary and sufficient conditions for obtaining improved levels of water supply and wastewater investment, under the most efficient structures possible. The regulator should work closely with the government on issues that could affect regulatory aspects, such as the need to provide for increasing water demands or improvements to the environment.

The regulator will work on an annual cycle covering:

- Technical performance as specified in the private sector agreement;
- Planning to short, medium, and long term horizons;
- Financial performance (not all aspects will be renewed annually);
- Tariff levels; and
- Reporting.

VIET NAM COUNTRY REPORT SUMMARY⁸

Introduction

Viet Nam has a population of 78 million people. The country is divided into 61 provinces and cities under a central administration. The total number of urban centers is more than 600, accounting for 23% of the country's population. The remaining 77% are living in the rural areas.

For the last ten years more than US\$1 billion has been invested into urban water supply and sewerage nationwide, resulting in great positive changes. Throughout the country there are 192 water supply facilities providing 2.7 million m³/day serving more than 60% of urban population at the standard of 60-80 liters/capita/day. At present, 34% of the rural population are covered with the clean water supply services. Wastewater projects have been started in big cities. In Hanoi, there is a US\$200 million wastewater treatment project, of which the Phase 1 is underway.

There still exist huge difficulties, shortcomings and challenges. The water supply rate is low, on average 50-60 liters/capita/day in some urban areas. The quality of supplied water is not good enough. Non-revenue water rate in the urban areas is very high which varies from 40% to 50%, even up to 60% in some localities. The infrastructure for urban sewerage and drainage are still poor in size, out-dated in technology, and deteriorated.

The Government of Viet Nam has issued a number of important policies and regulations to further develop the water sector, tackling a number of issues. They include the problems related to institutional and regulatory systems, bureaucracy, and subsidy mechanisms.

Water Supply and Sanitation Sector

The organizational structure in the sector reflects Viet Nam's centrally planned economy. A number of government agencies are involved in the water and sanitation sector. The Ministry of Construction (MOC) is the line ministry responsible for urban water supply, drainage, and sanitation. It sets regulations, plans, designs and constructs water supply and sanitation facilities, and supervises project implementation through its design and construction companies.

At the local level the administration is under the People's Committees (PCs) that are elected every four years. PCs are elected for provinces, districts, towns, and even for smaller administrative areas. The Provincial PC is the highest local authority in water supply. It determines water supply policies, plans budgets and tariffs, sets targets for production and distribution, and decides upon subsidies and local investments.

The water supply systems are operated by the Water Supply Companies (WSCs) that are state-owned enterprises reporting to central government. Autonomy of local water supply companies is commonly limited. The companies are under the control of the People's Committees and the central ministries. Self-financing is not possible as the water price is too low and they rely on financial subsidies from provincial authorities. The WSC Director General decides all operational issues. There is neither command mechanism nor clear occupation description. Emphasis is placed on production; operation and maintenance of distribution networks are considered less important.

The responsibility for sewerage belongs to the Sewerage or Urban Construction and Management companies which report to the People's Committee for daily operating activities. Sewerage companies operate on contracts placed by city authorities, which set out responsibilities and targets to be fulfilled and budget to be spent. If receipts and expenditures are not in balance, support by the cities will be considered.

⁸ Summarized from the Viet Nam Country Report prepared by Mrs. Pham Thi Thu Huong, Domestic Consultant

Private Service Providers

In accordance with legislation, a part of a water utility can be separated and privatized. The water utility assigns its personnel into the joint stock company's management. The superior management entity is still the city's People's Committee. Nevertheless, this will be the privatization model: to improve the capacity of management, operation, maintenance, and investment for renovating and developing water supply and drainage sewer systems.

Major constraints affecting the Delivery of Services

Finance

Water tariffs are subject to approval by the local authorities, whose decision is usually based on the affordability by the local population rather than on the related costs of services that should be properly recovered, and the necessary accumulation of capital for the expansion of the company's capacity. Usually it is lower than required.

The state budget plays a very important role in the water companies' finance, especially for new investment. The major part of investment capital for water companies come from foreign financial assistance in the form of grant aid or soft loans. Counterpart funds from the government are not always made available in time causing lots of difficulties for project implementation and completion.

In several district towns, residents can use only 50% of the design capacity or lower, and socio-economic effectiveness is low. Therefore, during water supply project preparation it is necessary to investigate and survey carefully the demands of the water consumption and payment capacity, and to consider the capital return before making the investment decision.

Material and equipment

A large number of water systems were constructed many years ago with obsolete technologies and equipment. After many years of operation without proper maintenance and repair they are working with low efficiency, at the rate of no more than 70% of design capacity. Consumption of energy and chemicals, thus, is unreasonably high.

Locally manufactured equipment frequently fails to meet international standards. In a large number of water facilities, especially in the projects using foreign grants or loans, equipment is imported from a variety of manufacturers. As a result, it is difficult to purchase and to maintain a sufficient quantity of spare parts. The matter becomes more acute in the aforesaid conditions, when financial resources are limited.

Personnel

The productivity of personnel is measured by the population served per water supply company employee. In general, productivity is low; the average number of people served per employee is below 700. This is partly due to low labor costs and labor-intensive technologies. On the other hand, many state-owned companies have maintained excessive personnel in the payroll for social policy reasons.

Staffing levels of the most efficient water supply utilities in the region are only about 10% of the average staffing level of the Vietnamese water utilities. On average 15% of the personnel in water utilities have technical education (engineers and technicians). The personnel of water utilities are not well balanced. Distribution functions are weaker than production functions. In districts, district towns, and communes there is shortage of managers, operators, maintenance workers, pipeline installation workers, and accountants for the central water supply system.

Consultancy services are new kind of services in Viet Nam (in the former centrally planned economy these services did not exist). Vietnamese consultants may be rather good in technical issues, but not so well trained in other aspects of their assignments such as

economic, social, and legal aspects. Consultancy services are much needed but they are still not sufficiently provided.

Management

At the central level a number of agencies are involved in the management of the water supply and sanitation sector, such as the Ministry of Construction, the Ministry of Planning and Investment, the Ministry of Science, Technology and Environment, the Ministry of Health, and the Ministry of Finance.

The interrelation among those central agencies and between them and the local authorities are not clear. It causes bureaucratic and cumbersome mechanisms with lots of overlaps and gaps in management that reduces efficiency in delivering water supply and sanitation services. The weak management of operation and maintenance for districts, district towns, and rural areas also poses a great challenge.

Undefined responsibilities cause a large part of the sector inefficiency. The duties, rights and responsibilities of institutions, as well as of individuals in these organisations, remain unclear. Mismanagement covers a wide spectrum of managerial practices. They include weak and inconsistent enforcement of regulations and decisions, lack of monitoring, deficient and untimely reporting, biased personnel management, biased decision-making, etc.

Policies and Strategies

At present, more than 40% of the urban population in Viet Nam have no access to clean water supply and 90% of urban centers do not have proper sewerage systems. Only 45% of district towns and 10% of small towns have piped water.

The overall objectives set in the National Orientation of Urban Water Supply Development to the year 2020 for urban water supply and sewerage are to direct the development of urban water supply in a sustainable and stable way, in close link with environmental protection. The Orientation also provides for the improvement of the quality of water supply services, facilitating water supply companies in becoming self-financing with adequate accomplishment of all public obligations and implementation of social policies

These policy positions are supported by a number of objectives covering service delivery, institutional and capacity development. To bring these objectives into effect the following measures are emphasized:

- Water resource strategy, including their protection against pollution.
- Organizational structure reform of the sector from central to local level, and on the capacity strengthening of water supply and sewerage companies.
- Renovate financial policies, including tariff fee policies to cover all related costs.
- Integrated technical measures for water supply and sewerage and modernize the local manufacture of equipment, spare parts, and materials.
- Training and human resources development through developing and strengthening of specialized training institutions and universities.

Financial autonomy of water supply enterprises is a very important issue. In the National Orientation of Urban Water Supply Development to the year 2020, it is envisaged to develop water supply companies into self-financing ones. Water supply companies must be able to generate enough incomes through their business activities to cover their incurred costs, including enough to obtain necessary loans to expand their water supply system capacity. The immediate objectives are in 3 to 5 years most of water supply companies shall become self-financing enough.

Conclusions and Recommendations

Water supply institutions and finance need to be renovated and placed on a commercial basis.

Create conditions in the framework policies for water supply and sewerage companies so that they can renovate their business practices and service approaches. Sewerage and drainage companies should be able to rely on their own financing capacity for survival. For water supply companies, they should be able to rely on their own financing capacity for survival and development investment.

Legislation is a necessary tool to ensure that obligations and interests of both water consumers and water service producers are respected. Reforms must be provided for in legal documents and the enforcement of these laws must be subject to a severe and fair inspection and dealing of executive power agencies.

Community involvement is of important significance in the improvement of service efficiency. Full information of water projects given to communities is a necessary condition to mobilize their participation. Community involvement can be summarized in the widely cited phrase "people know, people discuss, people inspect".

As specified in the National Orientation of Urban Water Supply Development to the year 2020, designate a Regulatory Body with coordinating responsibility for all matters relating to improving quality and availability of water and sanitation services. The MOC's activities at present are much too wide. It is simultaneously the sector planning agency, a design consulting organization, a contractor in the construction sector, a pipe manufacturer, etc. It should be reorganized, in order to discharge its key functions - planning and regulation of the sector's development - more effectively.

Framework policies should include:

- Reduce the interest rates on some re-loan projects.
- Exempt or reduce some levies to lower the input costs.
- Approve the water tariff to fit in the economic and social conditions in each province and city; encourage the companies to reduce the production costs.
- Reduce the water price to the poor and the welfare-benefited households, with subsidies from the provincial budgets.
- Renovate the policies on the investment and development from the current budgeting system into a credit scheme for better investment and effectiveness.
- For management and maintenance costs, promulgate benchmarks for future planning purposes.
- Apart from regular training in secondary schools, universities, it is recommended to extend the on-site training so that the information and new technology could be updated for staff of Water Utility Enterprises.
- Establish a National Center of water supply and sewerage to do research and technology transfer, re-train the engineers and managers working in the sector.
- Community education and public awareness are very important, which should include explanation of the nature and the necessity of the service so that the communities will be ready to pay for the service of water supply and sewerage.
- Review the private sector models in the water supply and sanitation services to work out policies for development and measures to align the business.

SUMMARY OF STAKEHOLDERS SURVEY

Introduction

Each domestic consultant in the eight countries where country reports on regulatory systems were prepared was asked to ascertain the views of stakeholders on the implementation of sector projects. They used a questionnaire (See Attachment 1) which also served as guide in the discussions in the one-day workshop held in each country. A total of 202 stakeholders from the eight countries participated in answering the questions although the Philippines (20) and Sri Lanka (22) participants answered the questions in the form of consensus during the workshops. The Philippine participants did not answer all the questions during the workshop discussions. The summary of the stakeholders' views follow in the sections below.

Constraints of Sector

The major constraints in the sector are institutional (69%), tariff (63%), funding (52%), service standards (43%), autonomy (40%), and coverage (28%). Other specific constraints cited include inadequate water resources and water rights constraints, inadequate management and professional capacities of staff, lack of financial viability and commercial orientation of water utilities, political interference, lack of vision and master planning approach, lack of accountability and public awareness, and inadequate attention to quality control.

Need for Regulatory Body

All the respondents were unanimous that there is a need for a regulatory body. They said that a regulatory body could address the major constraints enumerated above. The stakeholders also believe that such a body can make service providers to be more efficient; it can help develop institutional capacities; it can resolve problems of water rights and water resources through better allocation. They also said that a regulatory body could provide a legal framework, equitable distribution, and promote consumer responsiveness in the delivery of services.

Objectives of Regulation

About 88% of the respondents answered that a regulatory body should see to it that consumers receive proper service. Respondents included seeing to it that tariff policies are implemented (68%), that service providers operate efficiently (63%), and that service providers make reasonable profit (54%). Other objectives mentioned are: promote competition and control of monopoly, promote efficiency and reduce non-revenue water, service to the poor, minimize political interference, ensure fair price especially for the poor, encourage participation, and promote demand management.

Roles and Functions of Regulatory Body

Stakeholders said that the major roles/functions of a regulatory body include regulation of service quality (81%), regulation of performance standards (79%), tariff regulation (71%), protection of customer rights (68%), public awareness/ education (51%), and dispute resolution (47%). Other functions mentioned include: ensuring service to the poor, cost recovery, monitoring of services and compliance, negotiating with private operators, public advocacy, and publishing annual report.

Organization/Composition

Most of the respondents (74%) agreed that a single regulatory body should cover both public and private water utilities although some (16%) disagreed. About 43% of the respondents said the regulatory body should be at the state level, 29% said it should be at the national level, and 23% said it should be at the regional level.

On the number of regulators, more than half said there should be three regulators. Respondents in one country said one regulator would be enough. Others said it could have as many as 10 to 15 regulators. The three expertise needed that were cited by most of the respondents were engineering, legal, finance and accounting. Other expertise mentioned prominently were: water supply, economics, management, and sociology. Some added that consumers should be represented in the regulatory body.

Funding and Budget

More than half (54%) of the respondents said funding for the regulatory body should come from government funds. About a similar number said funds should come from fee added to water and sewerage charges. Other specific sources mentioned are license fees, government grants from local or state governments, property tax, and water fund.

Independence

About 88% of the respondents opted for a regulatory body created by legislation; only 8% said its creation should be by contract. About 41% of the respondents opted to have the regulators elected from different stakeholders group; 38% said a government minister should appoint the regulators. Other suggestions include appointment by parliament, selection by professional bodies, or by selection by a high power committee.

Attachment 1

**Regulatory Systems for Water and Sanitation Utilities
Questionnaire for Stakeholders**

Note to Questionnaire Respondent: This set of questions is intended to be answered by different stakeholders¹ of water supply and sanitation services especially those that have been privatized. A consultant will assist you in completing the questionnaire. Respondents will be invited to a one-day workshop to share their views with other stakeholders on aspects of regulation that will help improve the delivery of water and sanitation services in your country or city. Please answer the questions briefly (check as many answers that are applicable) within the context of your country or city.

Constraints of Sector: *What are the major constraints in the sector?*

Tariff Institutional Autonomy Funding Service standards Coverage
Others (pls. specify) _____

Need for Regulatory Body: *Is there a need for a regulatory body to address these constraints?* Yes No
If Yes, which constraints? _____

Objectives of Regulation: *What should be the objectives of regulation?*

Consumers receive proper service Service provider makes reasonable profit
Tariff policies are implemented Service providers operate efficiently
Others (pls. specify) _____

Role and Functions of Regulatory Body: *What should be the role and functions of the regulatory body?*

Tariff regulation
Regulation of service quality Regulation of performance standards
Protection of customer rights & obligation Public awareness/education, consultation
Dispute resolution Others (pls specify) _____

Organization/Composition: *In your case, should a single regulatory body cover all forms of water utilities (public, private) in its area of jurisdiction (national, regional, state)?* Yes No

Should a regulatory body be a national, regional or state authority?
National Regional State Other (pls specify) _____

How many regulators should there be in a regulatory body? (Pls state a number) _____

What expertise should be represented among these regulators? _____

Funding and Budget: *Where should funds for operating the regulatory body come from?*

Government budget Fee added to water or sewerage charges
Other methods (pls specify) _____

Independence: *How should a regulatory body be created?* Legislation Contract

How should regulators be selected?

Appointed by government minister Elected from different stakeholder groups
Other methods (pls specify) _____

Remarks: *(Please comment on other regulatory issues that you feel are important and should be discussed. These can be discussed in the forthcoming one-day workshop. You may use the back page of this questionnaire if you need more space.)*

¹ Stakeholders are: Government officials involved in regulation, water supply and/or sewerage utility management and staff, industrial and domestic water consumers/users, non-government organizations representing consumer groups, professional bodies such as institution of engineers, private sector contractors, funding agencies, and media.

APPENDIX 1: FORUM PROGRAM

Regional Forum on Regulatory Systems and Networking
of Water Utilities and Regulatory Bodies

Asian Development Bank
Manila, Philippines
26 - 28 March 2001

Monday, 26 March

08:00 - 08:30 **Registration of Participants**

08:30 - 09:15 **Opening Program**

Addresses

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Director, AWD, ADB

Ranjith Wirasinha
Executive Secretary, WSSCC (1991 – 2000)

Regulatory Bodies, Public Awareness and Transparency

Arthur C. McIntosh
Senior Project Engineer, AWWU, ADB

09:15 - 09:45 **Coffee Break and Group Photo**

09:45 - 11:00 **Overview of Regulatory Systems**

- *Presentation - William Stanley, Consultant, TWI*
- *Discussion*

11:00 - 11:45 **Country Reports**

- *Nepal - Mr. D. B. Shrestha, Joint Secretary, MPPW*
- *Sri Lanka - Mr. A. S. Gunasekera, Secretary, MUDCPU*
- *Discussion*

11:45 – 12:00 **Workshop Arrangements**

12:00 - 13:30 **Lunch Break**

13:30 - 14:15 **Country Reports**

- *Bangladesh - Dr. K. A. Haq, Managing Director, DWASA*
- *India – Mr. Vinod Kapur, Project Director, RUIDP*
- *Discussion*

- 14:15 - 15:00 **Contractor/Consultants' Experiences**
- *Lyonnaise des Eaux - Yves Bories, President, Ondeo (Phil)*
 - *Katalyst 21 - Keith Stallard and Chris Pollett, Directors*
 - *Discussion*
- 15:00 - 15:15 **Coffee Break**
- 15:15 - 16:00 **Country Reports**
- *Thailand - Mr. P. Hongvanishkul, Section Chief, PWA*
 - *Philippines - Mr. Hector Dayrit, Executive Director, NWRB, Mr. Rex Tantiongco, Chief Regulator, MWSS-RO, and Mr. Loreto Limcolioc, President, PAWD*
 - *Discussion*
- 16:00 - 16:45 **Country Reports**
- *Vietnam - Ms. Pham Thi Huong, WSS Consultant, MOC*
 - *P. R. China - Ms. Han Wei, Vice Director, BWGC*
 - *Discussion*
- 16:45 - 17:00 **Public-Private Community Partnership for Urban Services for the Poor**
- *Richard Franceys - Lead Consultant, RETA 5926*

Tuesday, 27 March

- 08:30 - 09:15 **Country Experiences**
- *Australia - Peter Harford, CEO, Yarra Valley Water Ltd.*
 - *England – Brian Allum, Manager, Thames Water Int'l*
 - *Discussion*
- 09:15 - 10:00 **Country Experiences**
- *Japan - Osamu Ikeda, President, NJS E&M*
 - *Philippines - Angel Efren Agustin, Deputy Administrator, MWSS-RO*
 - *Discussion*
- 10:00 - 10:15 **Coffee Break**
- 10:15 -11:00 **ESA / Other Experiences**
- *World Bank – Jan Janssens, Lead WSS Specialist*
 - *Halcrow – Colin Schoon, Principal Consultant*
 - *Discussion*
- 11:00 - 12:15 **Country Experiences - Cost Recovery, Tariff Revision and Accountability**
- *Hong Kong, Singapore, Malaysia, Maldives, Korea and Indonesia*
- 12:15 - 13:45 **Lunch Break**

-
- 13:45 - 15:15 **Group Discussions – Session 1**
- *Subgroup Discussions*
 - *Plenary Presentation/Discussion*

15:15 – 15:30 **Coffee Break**

- 15:30 – 17:00 **Group Discussions – Session 2**
- *Subgroup Discussions*
 - *Plenary Presentation/Discussion*

Wednesday, 28 March

- 08:30 - 09:00 **Review**
- *Synthesis of Group Presentation/Discussions*

- 09:00 - 10:00 **Group Discussion – Session 3**
- *Subgroup Discussions*

10:00 - 10:15 **Coffee Break**

- 10:15 - 11:15 • *Plenary Presentation/Discussion*

- 11:15 - 11:30 **Closing Session (Regulatory Systems Program)**
- *Closing Statement - Arjun Thapan, Manager, AWWU*

11:30 - 13:00 **Lunch Break**

Note: This part of the program is specific to the establishment of networks among water utilities and regulatory bodies among the DMCs in the Asian and Pacific Region.

- 14:00 - 15:15 **Water Utilities Networks in the Region**
- *South Asia Water Utilities Partnership - Mr. Dinesh Pyakural, Interim Managing Director*
 - *Pacific Water Association - Mr. David Parish, Executive Director*

15:15 - 15:30 **Coffee Break**

- 15:30 - 16:00 **Action Plan and Closing**
- *Discussion of WUP-SA Plans and Commitments of Support*
 - *Closing Statement - Arthur C. McIntosh, AWWU*

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