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# CASE STUDIES OF BANKABLE WATER AND SEWERAGE UTILITIES

VOLUME I: OVERVIEW REPORT



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## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



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## ACRONYMS AND ABBREVIATIONS

ACUACAR	Cartagena Waterworks
BOT	Build-Operate-Transfer
CRISIL	Credit Rating Information Services of India, Ltd.
DBL	Design, Build, and Lease
EGAT	USAID Pillar Bureau for Economic Growth, Agriculture, and Trade
GTE	Government Trading Enterprises
IDAMC	Internally Delegated Area Management Contract
IFC	International Finance Corporation
MWCI	Manila Water Company, Inc.
MWSS	Manila Water Works and Sewerage System
NWSC	National Water and Sanitation Corporation
O&M	Operations and Maintenance
OPDM	The Municipality of Tlalnepantla, Mexico's Water Utility, <i>Organismo Publico Descentralizado para la prestacion de los servicios de agua potable, alcantarillado y saneamiento del Municipio de Tlalnepantla</i>
SAR	South African Rand
USAID	United States Agency for International Development
WSS	Water Supply and Sewerage



## **EXECUTIVE SUMMARY**

Many municipal water and sewerage utilities in developing and transition countries face an enormous challenge in obtaining financing for their critical rehabilitation projects and investments in vital water and waste water capacity. Even though financing is potentially available from external private and public sources, many utilities do not meet the requisite conditions demanded by capital markets, i.e., they are not “bankable.” This report provides case studies of eight municipal water and sewerage utilities that have successfully made the transformation from unbankable to bankable conditions.

The term “bankable utility” generally describes a public or private utility that can demonstrate to external lenders that it is capable of repaying its debt. This typically means that the utility can meet capital market norms of 1) full cost recovery (including recovery of variable costs, such as operations and maintenance, and depreciation and debt service); 2) good governance (external to the utility in terms of the regulatory regime and internal to the utility in terms of its governance structure and practice); and 3) sound business performance (historical and projected as demonstrated in a solid business plan).

Meeting these norms is a significant undertaking, especially for utilities in poor communities. Transformation to bankable conditions can require utilities, municipalities, and regulatory authorities to execute governance and management reforms that are controversial and politically difficult. Nevertheless, as shown in the eight case studies provided in this report, there are a number of excellent examples of water and sewerage utilities in the developing world that have taken on the challenge of reform and have succeeded in moving from unbankable to bankable conditions.

Such change has generally been achieved by implementing one or more of the following general strategies: 1) corporatization; 2) execution of performance agreements; and/or 3) execution of some form of private sector participation strategy. The case studies in this report illustrate these strategies and provide lessons drawn from their practical application. In some cases, reforms at the utility level were combined with support provided to localities by provincial or national governments and donors to offset conditions beyond the local utility’s control. These include, for example, grants or subsidies to meet cost recovery shortfalls due to the inability of a large segment of the customer base to pay tariffs reflecting full cost recovery, or credit enhancements, such as loan guarantees, to catalyze the entry of viable municipalities and utilities into capital markets.

The utilities selected for case study development were chosen to represent a range of transformation strategies. Other criteria guiding utility selection were: success in achieving transformation in a relatively short period of time (typically two to five years); geographic diversity; and a diversity in the size of communities served. Utilities selected for case study development using these criteria, arranged by region, are listed below.

### **AFRICA (SUB-SAHARAN)**

- South Africa: Borough of Dolphin Coast
- Uganda: National Water and Sanitation Corporation

### **ASIA & THE NEAR EAST**

- Egypt: Alexandria Water Company
- India: Municipality of Alandur Underground Sewerage Project
- Philippines: Metro Manila East Zone Concession

## EUROPE & EURASIA

- Hungary: Debrecen Water Works Company

## LATIN AMERICA & THE CARIBBEAN

- Colombia: Aguas de Cartagena
- Mexico: Municipality of Tlalnepantla de Baz

Each case study provides useful information about specific actions taken by the local government, utility managers, national governments, and the international community to facilitate transformation of the utilities to bankable conditions. Collectively, the case studies provide a number of findings that can be useful to United States Agency for International Development (USAID) missions and bureaus in planning water and sewerage utility assistance programs. Findings include the following.

- **Motivations for transformation:** In the majority of case studies, the drive for transformation was motivated by specific events or conditions that required utility and municipal managers and political leaders to take action, including political initiatives in response to public demand, financial crises, and the enactment of new laws.
- **Methods of transformation:** The methods of transformation varied widely across the case studies, ranging from management reforms within the utilities to fundamental restructuring of the utilities.
- **Key features of transformation:** There were a number of external and internal features common to at least half of the case studies:
  - FEATURES EXTERNAL TO THE UTILITY
    - Effective and transparent legal/regulatory framework;
    - Strong leadership and political will;
    - Coordinated technical assistance from the international community;
    - Financial assistance from public sources; and
    - Fiscal discipline imposed in financial agreements.
  - FEATURES INTERNAL TO THE UTILITY
    - Public outreach/participation;
    - Fair labor transition process;
    - Instilling a business culture within the organization;
    - Improved understanding of customer base;
    - Insulation of business decisions from the political process; and
    - Accessing external expertise and experience through contracting.

**Sustainability of the transformation:** The case studies yielded insights into relationships between the transformation processes that resulted in short-term success and the prospect of long-term sustainability. While the majority of utilities appear to be on the path to sustainability, issues not addressed in the transformation process cloud the long-term prospects for several of them.

The case studies provide a number of lessons that can be useful to USAID missions and bureaus in designing municipal water and sanitation assistance programs and activities:

- Take advantage of events that raise public demand for transformation;
- Seek out and support strong champions for transformation;
- Assure that the legal/regulatory framework is conducive to transformation;
- Incorporate public participation into assistance activities;
- Incorporate conditions into assistance packages that drive change;
- Consider labor implications of transformation;
- Identify possibilities for mobilizing both public and private resources; and
- Emphasize the application of sound business practices.



## INTRODUCTION

Many municipal water and sewerage (WSS) utilities in developing and transition countries face an enormous challenge in obtaining the capital they need to improve their existing service and invest in increased water and sewerage capacity. Even in localities where financing is potentially available from external private and public sources, many utilities are unable to take advantage of such financing since they do not meet the requisite conditions demanded by capital markets, i.e., they are not “bankable.” To address this challenge, utilities need to pursue innovative reforms that will put them on the path of transformation and lead to conditions required to access external capital.

The United States Agency for International Development (USAID) recognizes the critical role of the private sector in financing water and sewerage investments and the need for innovations at the local level to empower utilities to take maximum advantage of capital markets.<sup>1</sup> The Financial Sector Strategy prepared by the USAID Pillar Bureau for Economic Growth, Agriculture, and Trade (USAID/EGAT)<sup>2</sup> shares global concerns about infrastructure finance and identifies the water sector as an important target for financial sector focus. The strategy is intended to strengthen the effectiveness of USAID’s financial sector development programs around the world. For example, one of the initiatives being undertaken under this strategy is the development of a diagnostic tool and solutions package for municipal finance that includes the municipal water and wastewater sector.

This document is designed to focus specifically on the relationship between innovative financing models and improved water and wastewater service provision, using a case study approach. The series of case studies provided in this report were prepared in the spirit of collaboration between the EGAT Office of Natural Resource Management’s Water Team, the Office of Economic Growth, the Office of Development Credit, the Office of Energy and Information Technology, the Office of Poverty Reduction’s Urban Programs Team, the Bureau for Global Health, and others in support of this initiative<sup>3</sup>. The case studies focus on selected municipal and national water service providers in developing and transition economies that have taken major steps to becoming “bankable,” i.e., they have taken systematic action to change financial and operational conditions to move from a state of decapitalization and declining service standards toward one of improving operations and management cost recovery and improving service delivery.

The objective of each case study is to identify the most important actions taken by governmental bodies, management, and private operators involved in water service provision that have effected successful transformation. Particular attention is directed to lessons which can be learned in order to assist USAID missions and bureaus to identify specific priorities and sequences of actions most effective in encouraging the creation of bankable water and sewerage utilities. Lessons learned from individual case studies are evaluated and summarized in Volume I of this report, and are intended to contribute to USAID’s framework for the design of projects and programs assisting water service providers.

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<sup>1</sup> As stated by USAID Administrator Andrew S. Natsios on World Water Day 2005, "Innovative private sector financing for water and sanitation programs are key to both short- and long-term solutions. USAID is leveraging these public and private investments to guarantee that water, an essential building block for civilization, is available to all."

<sup>2</sup> Financial Sector Strategy, USAID/EGAT, December 16, 2003.

<sup>3</sup> "Integrated Water Resources Management: A Framework for Action in Freshwater and Coastal Systems," US Agency for International Development, Washington, DC, April 2002.

The case studies were selected to ensure a diversity of localities and conditions. Selection factors included consideration of alternative utility management structures, transformation strategies, regions represented, and sizes of populations served. The case studies include municipal departments, autonomous municipal service providers and public utilities, and utilities managed by the private sector under a variety of contractual arrangements. The final selection of these eight cases was made in collaboration with USAID.

This report is organized as follows:

Volume I provides the framework for the case studies and a summary of key findings.

- Section 1 introduces the concept of bankable WSS projects and alternative management and financial arrangements that can enable public utilities to access external capital, expertise, and experience to improve bankability.
- Section 2 summarizes lessons learned from the case studies and useful considerations in assistance program development, to enhance the capacity of municipalities and WSS utilities to develop bankable projects.
- Section 3 contains the bibliography.

Volume II is a compendium of the case studies:

- **Africa (Sub-Saharan)**
  - South Africa: Borough of Dolphin Coast
  - Uganda: National Water and Sanitation Corporation
- **Asia & the Near East**
  - Egypt: Alexandria Water Company
  - India: Municipality of Alandur Underground Sewerage Project
  - Philippines: Metro Manila East Zone Concession
- **Europe & Eurasia**
  - Hungary: Debrecen Water Works Company
- **Latin America & the Caribbean**
  - Colombia: Aguas de Cartagena
  - Mexico: Municipality of Tlalnepantla de Baz

## **I.0 THE CHALLENGE OF FOSTERING BANKABLE WATER AND SEWERAGE UTILITIES**

This chapter provides an overview of the challenges confronting municipalities in accessing capital markets for their water and sewerage investment needs and the options available to overcome these challenges. The discussion includes a summary of the barriers that impede the flow of external capital to water and sewerage projects in the developing world, changes needed by utilities to successfully overcome these barriers, and options available to municipalities and utilities to make needed changes.

### **I.1 BARRIERS TO PRIVATE INVESTMENT IN MUNICIPAL WATER AND SEWERAGE PROJECTS**

Clean water supplies and sound sewage and wastewater management systems are essential to public health and well-being. Yet in the developing world, two out of every ten people lack access to a safe water supply, and five out of ten have inadequate sanitation. Where service does exist, it is often characterized by poor and intermittent service, unsafe water, and inadequate sewage and wastewater treatment. Poor or absent WSS service provision presents an exceptional burden on the poor, both from an economic and a health perspective.

Many cities in developing and transition countries experience performance problems in the provision of WSS services, including low service coverage, high physical water losses, unreliable and variable drinking water quality, and inadequate wastewater treatment capacity. Utilities are often poorly managed, operate with tariffs well below cost-recovery levels, and have no means with which to plan for the capital investments needed to address current and future customer demands.

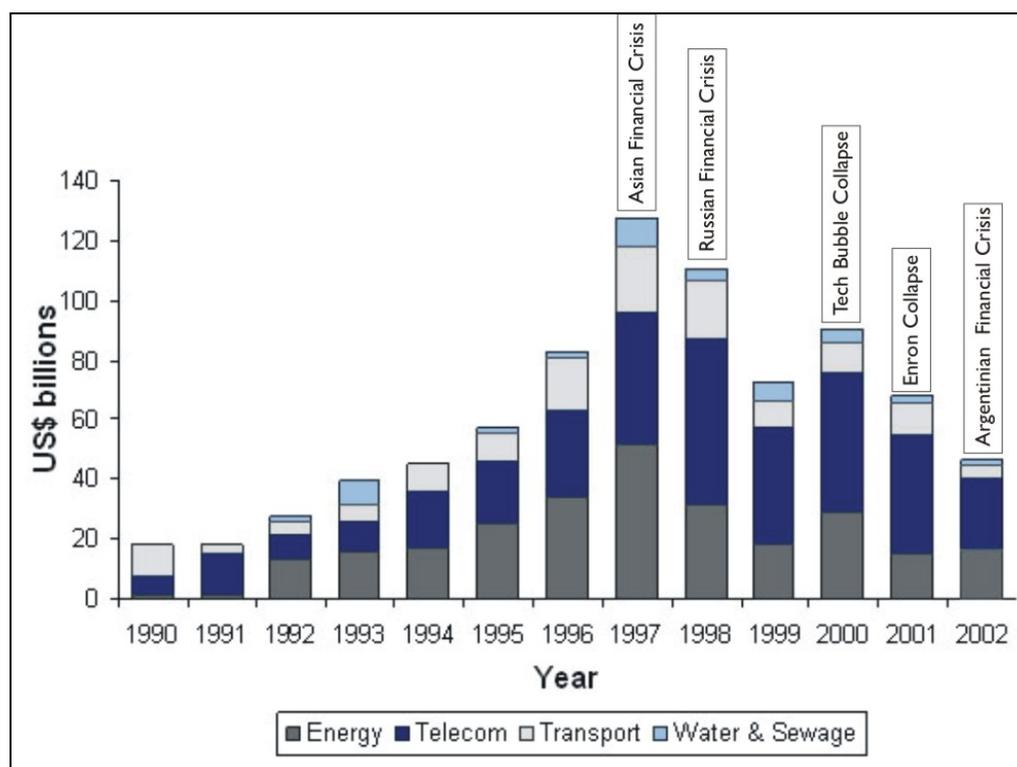
These challenges are compounded by a recent deterioration in the climate for private investment in the municipal water and sewerage sector. In the early 1990s, a number of international water companies seemed poised to play a key role in mobilizing capital for investments in the context of concessions and build-operate-transfer (BOT) types of arrangements (discussed in Section 1.3), but that is no longer the case. The financial crises of the 1990s in East Asia, Russia, and Latin America have made private sector participation and financing in water and sewerage projects even more challenging. In many cases, declining currency values were not offset by regulatory authorities approving corresponding rate increases needed to stabilize utility cash flow. As a result of heavy losses suffered in their international operations, private water companies have become more risk averse, and their interest in such arrangements has declined.

For much of the 1990s, the private sector played an important and growing role in providing developing country market infrastructure investments and services, although water and sewerage lagged other infrastructure sectors. Private sector participation in all infrastructure sectors in the developing world grew at an average annual compound rate of more than 32 percent, from US\$18.1 billion in 1990 to \$127.5 billion in 1997, the peak year for such investments (see Figure 1.1). The onset of economic crises, the poor financial performance of developing country projects, and the number of failed and renegotiated projects challenged both existing investments in emerging market infrastructure and the financial condition of many existing project sponsors. As a result, private sector participation declined from its peak of \$127.5 billion in 1997, to \$46.7 billion in 2002<sup>4</sup>.

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<sup>4</sup> "Financing Water Supply and Sanitation Investments: Utilizing Risk Mitigation Instruments to Bridge the Financing Gap," Aldo Baietti and Peter Raymond, World Bank, Water Supply and Sanitation Sector Board Discussion Paper Series, Paper No. 4, January 2005.

**FIGURE I.1 PRIVATE SECTOR PARTICIPATION IN INFRASTRUCTURE BY SECTOR, US\$ BILLIONS (1990–2002)**



Source: PPI Database, World Bank, cited in Baietti and Raymond, 2005.

At its peak in 1997, private participation in the WSS sector brought US\$9.4 billion in investments to developing and transition countries. However, by 2002, private participation in the WSS sector had fallen to \$1.9 billion. The World Bank has cited some reasons, shown in Table 1.1.

**TABLE I.1 BARRIERS TO PRIVATE SECTOR PARTICIPATION**

- Capital intensity with high up-front investments, combined with long payback periods and low sector returns
- Risk of political pressure on tariffs
- Weak or inconsistent regulation, lack of transparency, and perceived risk of regulatory capture
- Sub-sovereign risk: local government entities standing counter-party to bulk water sale agreements while having a poor collection record, sub-optimal financial condition, and weak credit
- Unaccounted for water, water loss, inadequate distribution networks in a state of disrepair, and the lack of investment funding to remedy the same threatening long-term project viability.
- Foreign exchange risk with mismatch between local currency revenues and foreign currency financing
- Forms of credit backstop (e.g., sovereign counter-guarantees for financial obligations of sub-national entities) being scaled back in the face of decentralization, ratings agency reviews, and downgrades
- Lack of local government access to bank and capital markets, due to absence of central government authorization and competition for scarce financial resources
- Aversion of private insurers/re-insurers to providing bond insurance and political risk insurance to sub-national entities in developing countries, due to lack of transparency, poor financial condition of reference entity, and absence of credit rating

Source: Baietti and Raymond, 2005

In summary, the prevalence and nature of private sector investment in municipal water and sewerage projects in the developing world have changed dramatically in recent years. The number of BOT projects and concessions has greatly diminished. The large international private operators are playing a much more limited role in direct project financing today. They prefer lower risk arrangements for engaging with municipal utilities, such as providing services through contract or structured lease arrangements (discussed in Section 1.3). Municipal water and sewerage utilities can not rely solely on private sector investment to finance their capital needs and must consider all options at their disposal.

## **I.2 INTRODUCTION TO THE CONCEPT OF BANKABLE WATER AND SEWERAGE UTILITIES**

Generally speaking, the terms “bankability” and “creditworthiness” are often used interchangeably. Both refer to the assurance of repayment that a borrower can provide to a prospective creditor. However, in the context of municipal utilities, the concept of bankability incorporates consideration of the creditor’s confidence in both the viability of the utility or municipal government as a creditworthy institution and the viability of the utility’s project to be financed as a reliable source of future revenue flow. For the purpose of this report, a “bankable WSS utility” is defined as one that is fully recovering its operations and maintenance (O& M) costs (including reasonable profit) and tax obligations, servicing its outstanding debt, and meeting capital norms for governance and business performance (i.e., sound management and financial practices)<sup>5</sup>.

The first two of these concepts, recovery of O&M and other variable costs and service of outstanding debt, are leading quantitative measures of financial health and overall performance. Full cost recovery implies that revenue is fully adequate to meet these costs, or<sup>6</sup>:

$$RR = O\&M + D + T + CC,$$

where: RR = Revenue requirement;

O&M = Operations and maintenance costs;

D = Depreciation;

T = Taxes; and

CC = Cost of capital.

Revenue to meet O&M and other variable costs, as well as to service outstanding debt service, typically is recovered through tariff charges. However, in poor communities where full cost recovery can not be achieved through tariffs alone, subsidies and other forms of transfer payments (e.g., from regional or national governments) are often needed to supplement tariff revenues. Even then, these payments are often insufficient to cover revenue gaps, resulting in poor operation and maintenance and a lack of capital to finance replacement of deteriorating infrastructure. Utilities that are dependent on such concessionary financial assistance to recover their total costs can be considered bankable by prospective lenders, provided that the utilities can demonstrate that these revenue streams have a strong likelihood of being sustained (e.g., by a well-established history of transfer payments made to the utility in fulfillment of social contracts to provide affordable services) and that they meet the norms of good governance and business practices.

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<sup>5</sup> “Making Water and Sanitation Utilities Bankable,” PowerPoint presentation, Dr. Allen Eisendrath, Deloitte Emerging Markets Group, March 15, 2004.

<sup>6</sup> See, for example, “Regional Assessment Survey and Workshop on Full Cost Recovery for Water Utilities in Southeast Asia: Sharing International Experience and Best Practices,” USAID/US-Asia Environmental Partnership and Organization for Economic Co-operation and Development, 2005.

This latter concept, meeting the norms of good governance and business practices, is more complex than the purely financial concept of “total cost recovery.” While there is no universally accepted set of conditions that would place a WSS utility in a category of bankability, the general process used by international credit rating agencies for evaluating projects for creditworthiness is instructive. For example, in evaluating water and sewer bond offerings in the United States, Fitch Rating Service uses a rating system that considers ten areas of utility operations, referred to by Fitch as the “10 Cs”:

1. Community characteristics of the service area
2. Customer base
3. Capacity
4. Compliance with environmental laws and regulations
5. Capital demands and debt policies
6. Coverage (including financial position)
7. Cash (balance sheet considerations)
8. Covenants (terms and conditions with creditors)
9. Charges (rates)
10. “Crew,” an informal term for management strength

The “10 C’s” are summarized in Table 1.2.

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<sup>7</sup> “Secure Credit on Tap: Municipal Water/Sewer Ratings Move Upwards,” Fitch IBCA, Revenue Special Report, June 7, 2000.

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**TABLE 1.2 FITCH'S "10 C'S" OF WATER/SEWER BOND ANALYSIS**

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**Community Characteristics**

---

- Economic diversity
  - Income and property wealth levels
  - Population growth
  - Potential for residential, commercial, or industrial sector volatility, including customer concentration
  - Typically a key determinant for rating placement in the 'A,' 'AA,' or 'AAA' categories
- 

**Customer Base**

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- Stability, growth, or decline?
  - Effect on the capital program, rates, and financial flexibility
  - Operating reliance on growth-sensitive fees derived from customer base growth
- 

**Capacity**

---

- Water supply sources
  - Treatment facilities
  - Collection, transmission, and distribution infrastructure
  - Management, technological, and personnel capacity
  - Regional demands on water supplies
- 

**Compliance with Environmental Laws and Regulations**

---

- Is the utility staying ahead, keeping up, or falling behind regulatory mandates?
  - Status of consent decrees or compliance litigation
  - What developing regulations could affect the utility?
  - How much will meeting the regulations costs in the five- to ten-year timeframe?
- 

**Capital Demands and Debt Policies**

---

- Costs of growth, regulations, and maintenance
  - Impact of costs on rates
  - Cost effects on financial flexibility
  - Pay-as-you-go versus debt funding sources
- 

**Coverage and Financial Performance**

---

- Goals for annual financial performance
  - Reasonableness of future budget assumptions
  - Payment enforcement and account delinquencies
  - Cause of past financial volatility, if any
  - Policies to limit transfers to general fund are preferable
- 

**Cash and Balance Sheet Considerations**

---

- The less stable the operating environment, the larger the needed financial cushion
  - Operating reserve levels
  - Repair and replacement reserve levels
  - Rate stabilization reserve levels
  - Debt service reserve levels
  - Unrestricted cash and investments
  - Reserves for variable-rate fluctuations if the utility incurs variable-rate debt
- 

**Covenants**

---

- Annual debt service coverage of 1.2 times (x) in rate covenants and/or additional bonds tests are typical
  - Does the system regularly exceed typical covenant requirements?
  - If so, does it show strong prospects of continuing this trend?
  - Level of minimum credit protection provided if utility is likely to test or breach covenants
- 

**Charges and Rate Affordability**

---

- Do political leaders and utility officials regularly raise rates when needed? Is review by an outside entity required?
  - Affordability of rates for residential, commercial, and industrial classes
  - Comparison of rates to those in nearby communities, and whether they affect the ability to raise rates when needed
- 

**"Crew" (Management)**

---

- Important for linking these credit features together
  - Are management and administrative practices institutionalized, recognized by political leaders and management officials, and able to withstand personnel changes?
  - Have management and administrative practices withstood prior periods of operating volatility, if any?
- 

Source: Fitch IBCA, June 7, 2000.

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While this framework was developed for rating water and sewerage bond issuances in the United States, it is nevertheless useful to illustrate the perspective of the financial community in assessing the creditworthiness of water and sewerage utilities in developing and transition countries, with the following caveats<sup>8</sup>:

- “Economic diversity,” a factor relevant to “community characteristics” in Table 1.2, may not be as important in the context of a developing country. In emerging markets, the existence of large, credible industrial customers with solid payment records may be more important than having a large number of smaller commercial customers for whom there is little or no information on payment reliability.
- While no explicit weighting is placed on the ten factors, Fitch has found that management is of paramount importance. According to Fitch, strong institutionalized management practices help ensure stable performance by improving a utility’s ability to cope with unexpected demands, plan for future needs, and maintain healthy, vibrant fiscal operations in a cooperative manner with elected officials and regulators. Fitch has identified specific management practices that may contribute to a higher credit rating (Table 1.3).

**TABLE 1.3 MANAGEMENT PRACTICES THAT MAY CONTRIBUTE TO HIGHER RATINGS**

- Long-term financial forecasting that considers future growth in demand, regulations, and infrastructure renovation and renewal needs
- Policies to ensure appropriate financial margins, including debt service coverage levels and levels of reserves for operating, maintenance, and debt service needs. Issuers with variable-rate debt should establish financial reserves to enable them to cope with interest rate fluctuations.
- Rate affordability guidelines, considering absolute levels of rates and their affordability relative to income levels
- Prioritized capital improvement plans that consider growth, capacity, regulatory, and replacement and renewal needs
- Regular financial reporting and monitoring systems that allow policymakers access to timely information on fiscal performance relative to budget
- Collection policies that regularly track the rate of timely payment receipts and enforce penalties against late payers
- Strategies to track and anticipate future regulatory mandates, including active membership in state, regional, and national trade associations by some utility officials
- Limiting operating exposure to growth-sensitive revenues, such as tap, connection, or impact fees
- Regular consultation with regional and local growth planners, community development officials, and demographers to predict and, if possible, limit infrastructure needs related to population and business growth
- Informing customers of drinking water quality and other environmental benefits made possible by their rate payments
- Use of professional engineers, either within the utility or outside of it, to prepare objective reviews of system performance and needs on a regular basis
- Limited exposure to financial operations of the general government, so that system revenues can be relied on for use to operate and improve the utility. Where transfers to the general fund are used, policies should specifically limit their scope and growth.
- Budget and financial reporting awards from the Government Finance Officers’ Association or other similar groups

Source: Fitch IBCA, June 7, 2000.

Credit Rating Information Services of India, Ltd. (CRISIL), a leading credit rating agency in India, uses a rating methodology for urban local bodies across India that also involves an in-depth assessment of a range of financial and other factors, including<sup>9</sup>:

- Legal and administrative framework;

<sup>8</sup> Interview with Mr. Gersan R. Durita, Senior Director, Global Project Finance, Fitch IBCA.

<sup>9</sup>“Financing Municipalities and Relevance of Credit Rating—The Indian Experience,” PowerPoint presentation, Roopa Kudva, Executive Director & Chief Rating Officer, CRISIL, Limited, India, International Conference on Financing Municipalities and Sub-National Governments, Washington, DC, October 1, 2004.

- Economic base of the service area;
- Municipal finances;
- Existing operations of the municipal body;
- Managerial practices;
- Project specific issues; and
- Credit enhancement structure<sup>10</sup>.

From the above discussion, it is evident that international rating agencies do not limit their investigation solely to financial factors when evaluating the creditworthiness of prospective projects and organizations. There are other conditions of creditworthiness that are of critical importance, including considerations of the customer base, legal compliance, regulatory arrangements, condition of the assets to be collateralized, technical capacity, and management capabilities. This multi-dimensional nature of the “creditworthiness” concept needs to be considered by USAID missions and bureaus when they are designing activities to assist WSS utilities in meeting conditions necessary to access capital markets.

### **I.3 TRANSFORMATION ALTERNATIVES FOR MUNICIPAL WATER AND SEWERAGE UTILITIES**

This section presents a brief summary of the major types of utility reform arrangements under which municipalities (and in some cases, national or regional governments) have successfully transitioned from poor financial, technical, and managerial performance to conditions that have moved them to conditions of bankability.

Municipal utilities in developing and transition countries typically reside within a department of the municipal government or in ministries of national governments and the governmental body owns the assets and operates the system. The degree of the utility’s autonomy from the municipal government is an important factor in project finance. At one end of the spectrum, the municipal government has complete managerial and financial control of the WSS system, including water treatment, distribution, and sewage management. In this case, system management is under the control of the municipal government, with operations and capital budgets derived from the municipal government’s budget. Revenues from tariffs typically revert to the municipality.

At the other end of the spectrum, the utility remains a public entity, but it has its own budget and revenue sources and a reasonable degree of independence from the municipal government and city council. Depending on its creditworthiness, the utility may be the direct recipient of private finance (e.g., through direct loans or bond issues) or it may meet its investment needs through a partnership with the city government (e.g., using the utility’s debt capacity with a guarantee from the local government to expand the total borrowing capacity of the WSS enterprise).

Just as there are numerous alternatives for organizing WSS services within municipalities, there are also a variety of options for governments and public utilities to support transition to bankability and, as required, to access private sources of capital, expertise, and experience, including:

- Corporatization;
- Performance agreements; and
- Private sector participation:

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<sup>10</sup> Credit enhancement is discussed in Section I.4.

### 1.3.1 Corporatization

Corporatization is the process of utility restructuring and reform that results in a utility being guided by management practices and internal incentives that “mimic” those of private businesses. While corporatization strategies vary, all are intended to make the utilities function as commercial entities, make them autonomous, and introduce improved governance and transparency. Although a utility may remain completely in the public sector after being corporatized (for example, restructured as a public corporation with the municipal, regional, or national government as the major or sole shareholder), a successful corporatization strategy will result in an organization that is customer demand driven and focused on meeting key financial targets that are important to achieving full cost recovery.

While there is no one set of universally accepted guidelines defining an effective corporatization strategy, the principles adopted by the Government of New South Wales, Australia in guiding its program of corporatizing its public enterprises are instructive<sup>11</sup>:

- **Establish clear commercial objectives:** This principle requires the “unbundling” of conflicting commercial, social, policy, advisory, and regulatory functions that may be currently imposed on the public utility. Separating these functions and giving the utility clear commercial objectives provides a direct focus for management and ensures that clear performance targets can be set for the organization.
- **Establish appropriate managerial authority and autonomy:** This involves giving boards of directors and management greater responsibility and authority for accomplishing utility objectives within the commercial parameters set by the government as shareholder. This principle requires that key internal operating decisions are made by boards and management and that they be insulated to the greatest extent possible from external political interference.
- **Implement effective performance monitoring:** There must be a rigorous monitoring regime that is independent of boards and management and permits comparative assessment of the utility’s performance against agreed targets.
- **Provide rewards and sanctions for performance:** A vigorously applied system of rewards and sanctions must operate in order to effectively promote good commercial performance and discourage poor performance. Examples include executing remuneration and employment agreements, tightening or relaxing reporting and monitoring requirements, and easing or restricting management’s decision-making ability regarding future investments.
- **Ensure competitive neutrality:** This involves removing any advantages or disadvantages that the utility may have by virtue of its government ownership. To the extent practical, government policies should level the playing field between the utility and its competitors, e.g., by requiring the utility to pay taxes at rates equivalent to those of a private company.

The Alexandria, Egypt (Alexandria Water Company) and Debrecen, Hungary (Debrecen Water Works Company) case studies provide two examples of municipal WSS utilities that have successfully used a strategy of corporatization to move toward a condition of bankability. Corporatization was also a key element of the transformation of Uganda’s public water utility sector, although the case study provided in this report focuses on another key element of the transformation, execution of performance agreements.

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<sup>11</sup>“Corporatisation Manual,” Government Trading Enterprises (GTE) Reform Unit, Premier’s Department, New South Wales, Australia.

### **I.3.2 Performance Agreements**

Performance-based agreements, such as contracts between water authorities and local utilities, provide explicit performance targets and clear incentives to service providers for meeting the targets. For example, the Uganda National Water and Sanitation Corporation (NWSC), the subject of another case study in this report, is executing internally delegated area management contracts (IDAMCs) with service providers at the township level that include explicit agreed-upon performance targets. Examples of targets include unaccounted for water, accounts receivable, and connection efficiency. The IDAMCs establish the terms for monthly payment of management fees to the towns that include performance fees tied to the percentage of operational targets achieved and additional incentive fees tied to improvements in cash operating margin. Conversely, the contracts include penalties in the form of withheld payment for persistent failure to achieve certain targets (e.g., failure to meet accounts receivable targets for three consecutive months).

Performance benchmarking provides a means of evaluating utility performance and guiding continuing performance improvement. Benchmarking is an important utility management tool that enables managers to measure performance against “best in class” performers. Within the Uganda NWSC, benchmarks are established internally and updated as overall utility performance improves. Utilities also use benchmarking to compare their performance with other utilities<sup>12</sup>

### **I.3.3 Private Sector Participation**

As discussed in Section 1.1, private sector interest in directly investing in water utilities has markedly diminished in recent years. Nevertheless, even without direct financial investment the private sector has much to offer public utilities in terms of experience and expertise. Further, while private companies may be unwilling to assume major financial risks, they may nevertheless be interested in making limited investments that afford the opportunity for reasonable returns, such as may be possible through lease arrangements.

This section provides a summary of alternatives for public utilities to tap private sector experience, expertise, and capital. These include:

- Service contracts;
- Management contracts;
- Lease contracts;
- Concessions;
- BOT contracts; and
- Divestiture.

Options range from those involving minimal private sector involvement, such as through the use of service contracts between the public utility and private companies for specific support services (e.g., meter reading and vehicle fleet maintenance), to those involving extensive private sector participation in utility management and infrastructure rehabilitation and investment, such as concessions and BOT arrangements. In almost all these options (with the exception of divestiture, included here for completeness only), the public entity typically resumes full control of the assets upon termination of the contract with the private partner. The following discussion introduces each of these options<sup>13</sup>.

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<sup>12</sup> For example, the World Bank encourages the sharing of performance data among water utilities for benchmarking purposes. See [www.ib-net.org](http://www.ib-net.org).

<sup>13</sup> Much of this discussion was drawn from the World Bank’s “Tool Kits for Private Participation in Water and Sanitation,” August 1997.

## Service Contracts

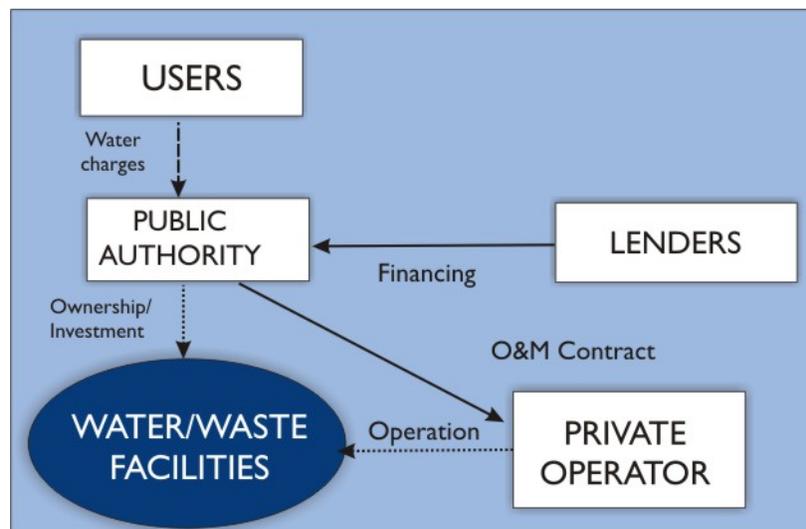
Service contracts secure private services for very specific tasks, such as installing and reading meters, repairing equipment, or cleaning and landscaping. They may also be used to procure additional staff during times of peak needs. While service contracting does not address core management problems or contribute directly to investment financing, it can be a very effective tool when used as part of a strategy to reduce the burden on permanent staff, to bring specialized expertise to the utility, and to increase efficiency. Service contracting also provides a means for the utility to focus its time and energy on its core responsibilities. Service contracts are typically of short duration, i.e., six months to two years, and remuneration is often based on units of work completed.

## Management Contracts

Management contracts transfer responsibility for day-to-day operation and maintenance to the private sector for a specified period, typically three to five years (see Figure 1.2). Part or all of the remuneration is in the form of a fixed fee. While it is desirable for part of the remuneration to be linked to achieving performance targets (e.g., reducing unaccounted for water, installing new connections, or completing training activities), in today's market, many private operators insist on an initial period of 18 to 24 months, during which data on the initial starting point are verified and targets are agreed upon prior to the targets taking effect.

Management contracts are usually considered a temporary mechanism for municipal utilities to enlist technical and managerial expertise from the private sector, especially during the initial stages of a reform program or a rebuilding effort. However, they have also been used as a permanent solution in small towns where local private operators compete for contracts every two to three years. One of the major drawbacks of management contracts is that staff may continue to be employed by the public authority and be seconded to the contractor. Under these circumstances it is important that the manager has full authority for day-to-day personnel management and that staff see the arrangement as a partnership in which it has a stake.

**FIGURE 1.2 GENERAL FRAMEWORK FOR MANAGEMENT CONTRACTS**



Reference: "Making (Water) Projects Bankable, A Commercial Lender's Perspective," PowerPoint presentation, Fabrice Henry, Executive Director, Structured Finance, Astris Finance, a subsidiary of Dexia Credit Local, International Conference on Financing Municipalities and Sub-National Governments, Washington, DC, October 1, 2004.

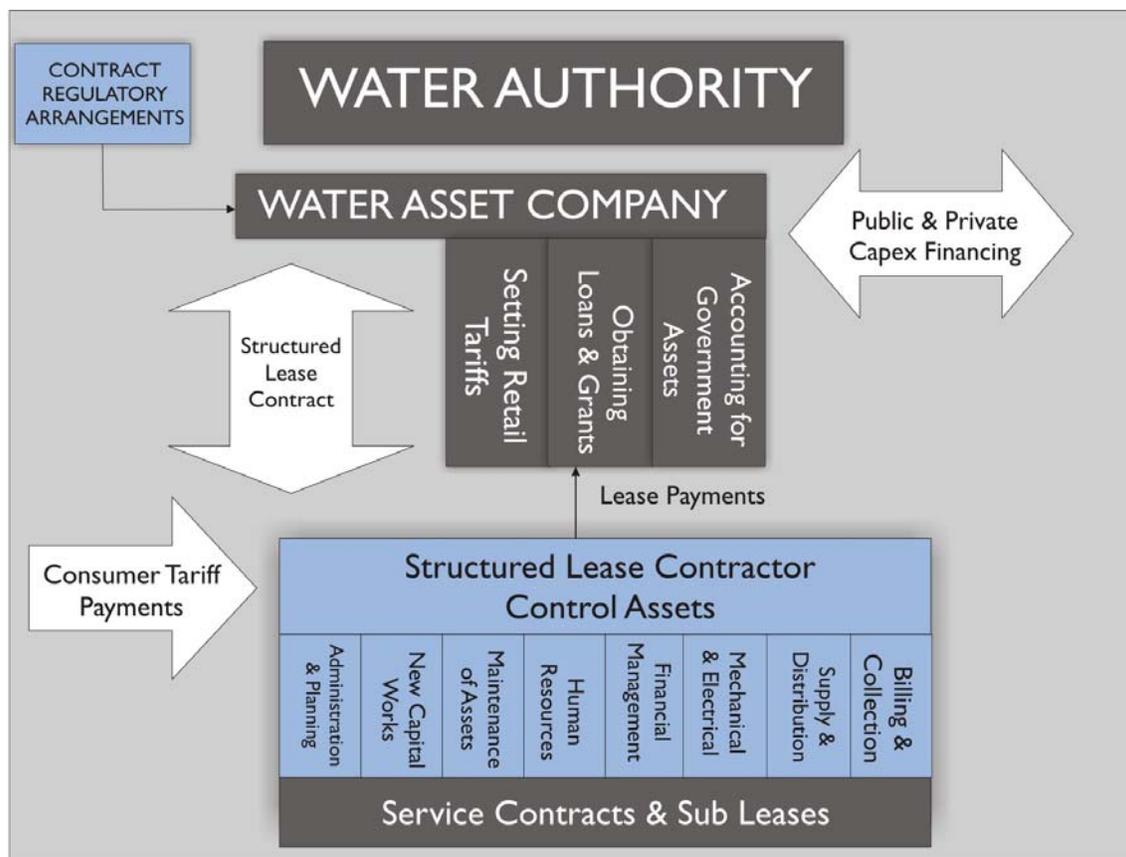
While the impact of management contracts on overall utility performance may be limited, specific aspects of performance can be improved when appropriate targets tied to incentives are clearly established in the contract and effectively overseen by the relevant public authority. Management contracts are most likely to be useful in situations where the main objective is to enhance the municipal utility's technical capacity and

efficiency in performing specific tasks or to prepare itself for greater private involvement in the future. In this respect, a management contract can provide a window of opportunity for developing the trust between the public and private sectors and for the government to create an environment more conducive to private sector risk-taking.

### Lease Contracts

Lease contracts are at an intermediate level of private sector risk sharing, between management contracts and concessions. Unlike a management contract, under a lease contract the lessee collects and retains billings, paying a lease amount to the public entity. Under these arrangements, a private firm leases the assets of a utility that is owned by the government and assumes the responsibility for operating and maintaining them, typically for a period of 10 to 35 years (see Figure 1.3). Because the lessee effectively buys the right to the utility’s income stream, it assumes much of the commercial risk of utility operations. Therefore, lease arrangements are particularly effective in achieving significant performance improvements and efficiency gains.

**FIGURE 1.3 GENERAL FRAMEWORK FOR LEASE ARRANGEMENT**



Reference: “Making Water and Sanitation Utilities Bankable”, PowerPoint presentation, Dr. Allen Eisendrath, Deloitte Emerging Markets Group, March 15, 2004.

An important distinction between a management contract and a lease is that, under the latter, the operator is provided with incentives to improve utility performance and, in return, may be required to make limited investments in operations and systems, such as metering and billing. Under a management contract, the operator does not have such incentives and is primarily charged with providing professional management services to meet a narrow set of performance targets.

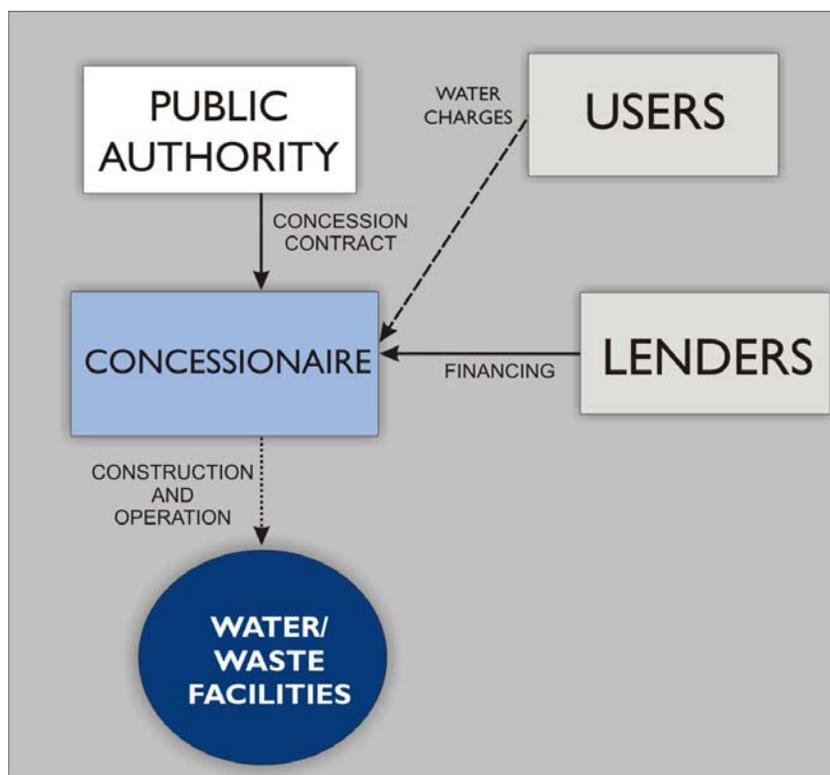
Under lease arrangements, assets remain under the ownership of the public body and, therefore, the responsibility for financing major capital investments remains in the public sector. However, leases provide a means for “transitional” financing since the operator typically provides working capital and may be required to replace “short lived” assets such as computers and vehicles.

In some cases, there may be equity participation in the transaction, either as an initial contribution or as a deferred profit, as in the case of “design, build, and lease (DBL)” schemes. Unlike debt, equity does not impose an explicit repayment commitment and, as such, may result in less year-to-year volatility on financial operations.

### Concessions

A concession gives a private company responsibility for not only the operation and maintenance of a utility’s assets but also for its capital investments (see Figure 1.4). In return for assuming this responsibility, the concessionaire is given full-use rights of the assets for the concession period, typically 25 to 30 years. Ownership of the assets remains with the government, and use rights revert to the government upon expiration of the concession. The concessionaire often has the flexibility to adjust the timing of capital expenditures, provided that concession agreement performance targets are met. While the owner retains a wide degree of latitude in utility management and investment decisions, the government retains ultimate control through contractual and regulatory enforcement of performance, coverage, and service quality targets set in the concession agreement.

**FIGURE 1.4 GENERAL FRAMEWORK FOR CONCESSION AGREEMENTS**



Fabrice Henry, October 1, 2004.

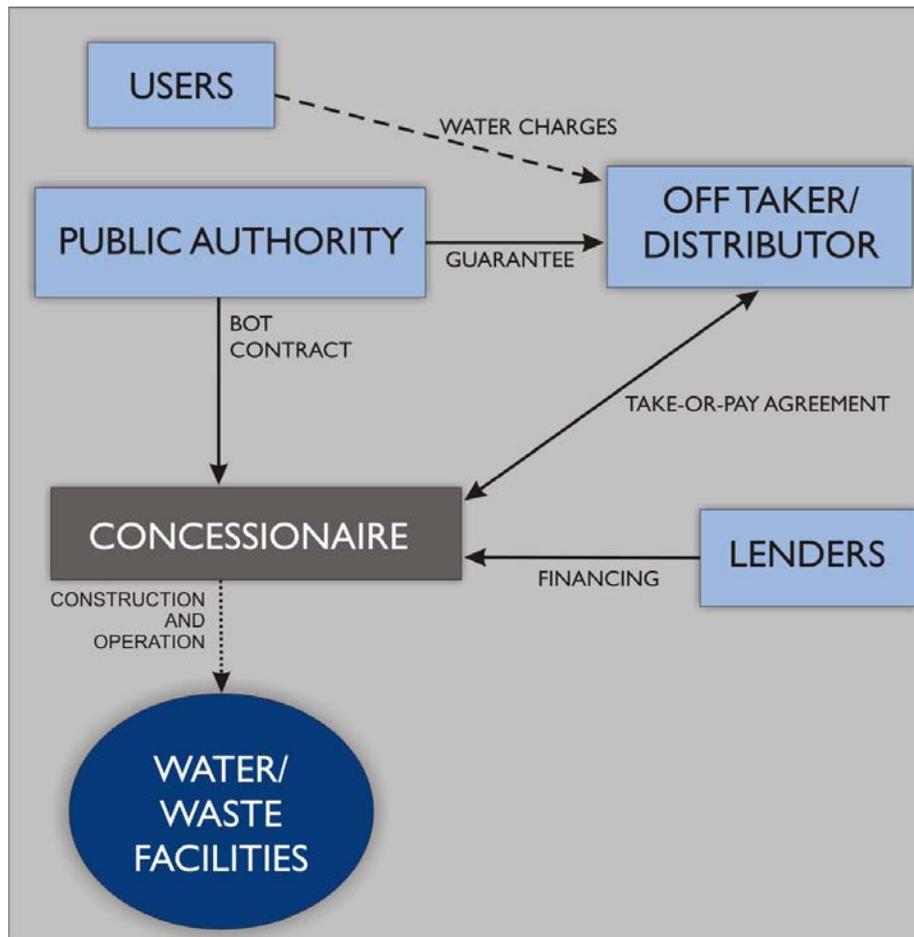
Since a concession confers a long-term monopoly on the concessionaire, it is critical that the government establish an effective legal and regulatory framework, enforced by an independent regulatory body, to ensure the public that the terms of the concession will be met. At the same time, the regulatory authority must

provide sufficient assurances to the concessionaire that it will be adequately compensated for the substantial commercial risks it is assuming.

### Build-Operate-Transfer

BOT arrangements resemble concessions for providing bulk water and wastewater services, but they are typically used for greenfield projects such as new water and wastewater treatment facilities (see Figure 1.5). In a typical BOT arrangement, a private firm agrees to finance and construct a new facility, operate it for a specified number of years, and relinquish all rights to the public utility at the end of the contract. In turn, the government or distribution utility pays the BOT operator for water received or for wastewater treated, at a price calculated to cover construction and operating costs and a reasonable return.

**FIGURE 1.5 GENERAL FRAMEWORK FOR BOT ARRANGEMENT**



Fabrice Henry, October 1, 2004.

The contract between the BOT contractor and the utility or municipal government is typically on a take-or-pay basis, obligating the utility or municipality to pay for a specified volume of water (or wastewater treatment), regardless of whether or not the amount is actually consumed, thus placing all demand risk on the utility. Alternately, the utility might pay a capacity charge and a consumption charge, an arrangement that shares the demand risk between the public and private parties. There are a number of variants to the BOT model, such as build-own-operate arrangements, in which the assets remain with the private partner indefinitely, and design-build-operate arrangements, in which the public and private partners share responsibility for investments.

## Full or Partial Divestitures and Joint Ventures

Under a divestiture, the government transfers ownership of assets to the private sector, leaving the government solely with the task of regulating the private utility owner. Although widely used in other infrastructure sectors, divestitures in the water and sewerage sector have been limited to England and Wales. Partial divestiture of ownership and joint ventures are also relatively rare. For example, international private operators have acquired minority shares in regional water utilities in Chile. However, given the national economic importance of water and sewerage services, governments are generally unwilling to relinquish ownership to the private sector. Further, private investors are not interested in water and sewerage services in developing countries, and the international private operators are no longer pursuing ownership.

### **I.4 THE ROLE OF PUBLIC SECTOR CREDIT ENHANCEMENT IN WSS PROJECT FINANCE**

As discussed in Section 1.1, private sector interest in investing in projects in the WSS sector of developing countries has greatly diminished in recent years. Financing from multilateral financial institutions, bilateral donors, and other public institutions continues to be a critical source of capital for water and wastewater projects. Traditional mechanisms for such financing have included grants, subsidies, and concessionary loans. Recently, however, USAID and other members of the international community have employed innovative credit enhancement mechanisms to catalyze the entry of public entities into capital markets. Credit enhancement tools, such as loan and credit guarantees, serve to reduce the repayment risks to lenders that impede such entry. For example, they can enhance the creditworthiness of municipalities to improve their ability to issue debt through bonds. Guarantees can enable municipalities to extend the maturities of their bonds and lower their debt cost. They can also mitigate the risks (political and regulatory) to private investors and lenders that are beyond the scope of the project managers.

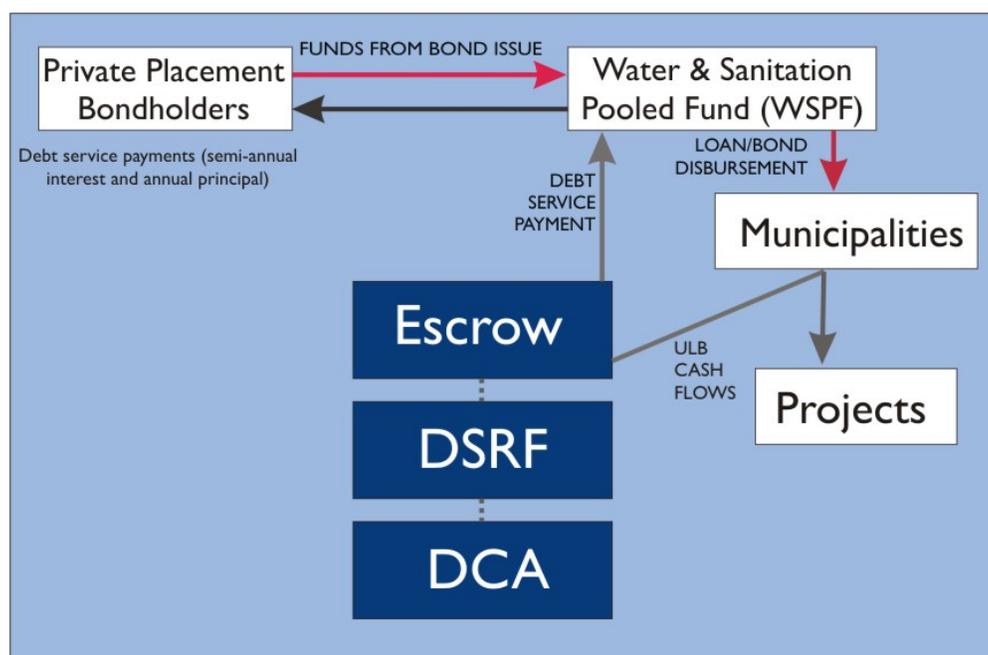
Credit enhancements, such as loan and credit guarantees, have been effective in increasing the creditworthiness of municipalities and local governmental bodies. For example, in 2004, the City of Johannesburg, South Africa, issued a US\$150 million, 12-year bond to refinance its debts and fund priority infrastructure projects. The World Bank's Municipal Fund, along with Development Bank of South Africa, provided a \$60 million partial credit guarantee to the issue. The partial credit guarantee raised the local investment rating of the bond by Fitch Ratings up three levels, from A- to AA<sup>14</sup>, enhancing its attractiveness to the capital market.

The State of Tamil Nadu, India, the focus of one of the case studies in this report, provides an excellent example of the leverage that can be achieved in financing water and waste projects with appropriately designed and implemented credit enhancement programs. Using USAID's Development Credit Authority, USAID provided a 50 percent guarantee on principal for bonds issued by the Water and Sanitation Pooled Fund, a revolving fund established specifically to provide financing to the state's small- and medium-sized urban bodies for expansion and improvement of their WSS systems. The Tamil Nadu Urban Development Fund, an autonomous, privately managed financial intermediary, manages the fund. The financing structure is illustrated in Figure 1.6.

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<sup>14</sup> "Municipal Fund: Global Finance for Municipal Needs," PowerPoint presentation, Sumeet Thakur, International Finance Corporation, International Conference on Financing Municipalities and Sub-National Governments, Washington, DC, October 1, 2004.

**FIGURE 1.6 TAMIL NADU WATER AND SANITATION POOLED FUND**



Reference: "Financing Water Using Partial Loan Guarantees," PowerPoint presentation, Jacqueline E. Schafer, Deputy Assistant Administrator, and John Wasielewski, Director, Office of Development Credit, Bureau for Economic Growth, Agriculture, and Trade, USAID, Washington, DC.

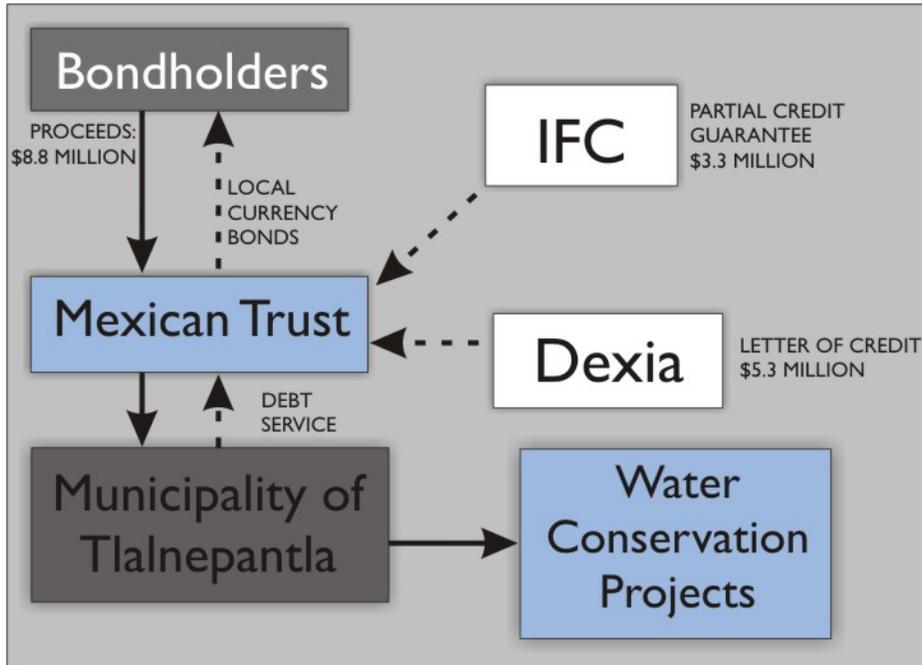
Under this arrangement, the guarantee is embedded in the project structure behind two payment mechanisms: 1) an escrow account; and 2) a debt service reserve fund backed by intercepted state transfers of revenue to the municipality. The estimated cost to the US government for guaranteeing a US\$6.4 million bond issue was about \$0.33 million, providing a leverage ratio of 16 to 1.

Autonomous WSS utilities can take advantage of guarantee arrangements by engaging in partnerships with their city governments to expand the total borrowing capacity of the WSS enterprise. This is illustrated by the recent financing successfully completed through a partnership between the Municipality of Tlalnepantla, Mexico de Baz, and its water utility, OPDM, another case study in this report. The finance structure is illustrated in Figure 1.7.

Under this arrangement, the International Finance Corporation (IFC) provided a local currency partial credit guarantee in parallel with a letter of credit provided by Dexia Bank, a private financial institution, to a Mexican Trust established by the Municipality of Tlalnepantla to issue \$US8.8 million in local currency bonds in the domestic capital markets to finance water conservation projects. The proceeds of the bond issue were on-lent by the Trust to the Municipality of Tlalnepantla and the municipal water utility (which pledged future water revenues) to finance water conservation projects in OPDM's system.

These examples illustrate the important role that credit enhancement can play when applied in concert with other tools to assist municipalities and their WSS utilities in accessing capital markets to finance their water and wastewater projects. Credit enhancement is an especially important tool in light of the decline in private sector investment in the water sector, as discussed in Section 1.1. However, guarantees cannot force municipalities and public utilities to alter their business models in order to improve performance, nor can they make fundamentally unviable projects bankable. Rather, the availability of affordable credit and the existence of bankable projects are both necessary preconditions to improved municipal water and sewerage services. Credit enhancement is most effectively used as catalyst for capital market entry, not as a substitute for poor creditworthiness.

**FIGURE I.7 FINANCE APPROACH FOR WATER CONSERVATION PROJECTS IN THE SERVICE AREA OF OPDM, MUNICIPALITY OF TLALANEPANTLA, MEXICO**



Reference: Sumeet Thakur, International Finance Corporation

## 2.0 LESSONS LEARNED FROM THE CASE STUDIES: WATER AND SEWERAGE UTILITY TRANSFORMATION

This report provides case studies of municipal water and sewerage utilities that have made the transformation from unbankable to bankable conditions. A major focus of the studies is on the identification of lessons learned that can be useful to USAID missions and bureaus in the development of assistance programs and activities directed at the municipal water sector. The case studies, provided in Volume II of this report, are intended to present the cases from which these lessons were drawn. The following discussion presents the methodological approach to the case studies, a summary of the major lessons learned, and suggestions for incorporating these lessons into WSS assistance program planning.

### 2.1 INTRODUCTION TO THE CASE STUDIES

The study sought to identify features common to successful WSS utility transformations that transcended geographic boundaries, local socioeconomic conditions, and utility management structures. In selecting the case studies, it was important to represent a range of political, socioeconomic, and managerial conditions. A total of eight utilities were chosen for analysis, based on the following criteria:

- **Transformation success:** In general, utilities were sought that have had successful transformation from unbankable to bankable conditions in a relatively short period, typically between two and five years. “Transformation” means that a utility has been successful in moving from conditions where it could not cover its operational costs, service outstanding debt, and/or meet capital market norms for governance and business performance to a condition meeting all three of these requirements<sup>15</sup>. The transformation should be sustainable, meaning that the financial, technical, and managerial measures put into place will provide a reasonable degree of confidence to capital markets that, with improved conditions, are likely to continue into the foreseeable future.
- **Geographic diversity:** Utilities were chosen to include municipalities in developing and transition countries located in all four USAID regions, although they were not restricted exclusively to USAID presence countries within these regions.
- **Community size:** An attempt was made to select utilities serving a cross-section of communities, including both small and medium municipalities and large urban centers. In the eight case studies, the sizes of the utilities’ customer service bases range from populations as small as 34,000 (Dolphin Coast, South Africa) to as large as 4.5 million (Alexandria, Egypt).
- **Management framework:** As discussed in Section 1.3, there are numerous alternatives for managing utilities and structuring private sector participation arrangements. WSS systems may be under the complete control of the municipal government, with little financial or management autonomy, or managed by autonomous public bodies with their own budgets and management systems. Further, private sector involvement can range from very limited functions provided through service contracting to extensive private sector control under concessions or BOT arrangements. In selecting utilities for the case studies, an attempt was made to include a broad range of management arrangements. Selection of utilities that meet these criteria was based on a preliminary literature review to identify candidates for detailed study. Table 2.1 summarizes the eight case studies that were selected based on these criteria.

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<sup>15</sup> “Making Water and Sanitation Utilities Bankable,” PowerPoint presentation, Dr. Allen Eisendrath, Deloitte Emerging Markets Group, March 15, 2004.

**TABLE 2.1 UTILITIES SELECTED FOR CASE STUDIES**

COUNTRY	MUNICIPALITY/ UTILITY (POPULATION)	MANAGEMENT FRAMEWORK	RECENT FINANCING	RATIONALE FOR CASE STUDY
<b>AFRICA (SUB-SAHARAN)</b>				
South Africa	Dolphin Coast/Siza Water  (34,000)	Concession	Concessionaire assumed existing debt, pays an annual concession fee, and, as of 2003, had financed investments worth SAR 8.5 million.	While financial problems plagued the concession in the initial years, the contract was subsequently renegotiated, and concessionaire has taken substantial transformation measures resulting in improved performance
Uganda	National Water and Sanitation Corporation  (1,500,000 in 15 service areas)	Autonomous public corporation, managed through performance agreement between NWSC and Government of Uganda	No new external financing. The government has not yet allowed NWSC to assume any new debt.	The performance agreement is analogous to management contracts used in private sector participation arrangements. NWSC has made a transformation, putting it on the path to bankability
<b>ASIA &amp; NEAR EAST</b>				
Egypt	Alexandria/Alexandria Water Company  (4,500,000)	Autonomous public company	Loans from Egypt's National Investment Bank	On path to transformation through major changes in management structure, combined with performance improvement measures
India	Municipality of Alandur Underground Sewerage Project  (165,000)	Non-autonomous department of municipal government	Financing of new sewer and wastewater treatment system through package of grants/subsidies, loans, and financing by BOT operator	Success in executing entirely new sewage system based on a package of customer charges, private sector investment, and public loans and subsidies. Good example of financing with credit enhancements.
Philippines	Metro Manila East/Manila Water Company Inc.  (3,900,000)	Concession	Financing by concessionaire, recent IPO raised substantial capital	Success in transforming a poorly-performing public utility to a well-functioning enterprise.
<b>EUROPE &amp; EURASIA</b>				
Hungary	Debrecen/Debrecen Water Works Company  (220,000)	Autonomous publicly-owned water company	Commercial loans and public sector grants and subsidies	Transformation from poorly-performing utility to bankable utility during time of national transition from a centrally planned to a market economy
<b>LATIN AMERICA &amp; THE CARIBBEAN</b>				
Colombia	Cartagena/Aguas de Cartagena (ACUCAR)  (900,000)	Autonomous utility, managed by private partner through management contract	Private financing through mixed capital company, ACUCAR, owned jointly by District of Cartagena, private water company, and other private shareholders	Dramatic turnaround since municipal utility was liquidated and replaced in 1993, due to serious performance problems, and a management contract tendered on competitive basis
Mexico	Tlalnepantla de Baz/OPDM  (862,000)	Autonomous publicly-owned company	Bonds issued by private trust, with partial guarantee from IFC, letter of credit from a private financial institution property tax pledge from municipality, and water fee pledge from OPDM	Identified as a financing success story by IFC. Good example of financing through limited trust financing backed by public guarantee.

## 2.2 STUDY METHODOLOGY

Analysis of the case studies was focused on a subset of the key factors contributing to bankability that were considered important to international rating agencies, as described in Section 1.2. While there is no universally accepted set of factors for evaluating WSS utility bankability, it is clear that the scope of factors encompasses technical, financial, and managerial factors internal to a utility, as well as certain external factors beyond the

utility’s control. The latter include, for example, the regulatory framework that affects the utility’s ability to recover its costs and political and socioeconomic factors that impact utility operations.

The major focus of this study was on the factors internal to the utilities, measures taken by the utilities to improve their performance against these factors, and the role that factors beyond the utilities’ control played in the transformation process. The general factors used by Fitch in developing credit ratings for water and sewerage utilities provided the point of departure for the analysis (see Table 1.2). To gauge the extent to which performance changed over the period addressed in each case study, each of these factors was linked to a set of technical performance indicators commonly used by the water utility industry. Table 2.2 summarizes the factors that were considered most important for this purpose.

<b>TABLE 2.2 FEATURES OF TRANSFORMATION ADDRESSED IN THIS STUDY</b>
<b>Customer &amp; Community Characteristics</b>
<ul style="list-style-type: none"> <li>• Diversification/stratification of customer marketing and service</li> <li>• Affordability of service, especially to poor</li> <li>• Quality of customer relations</li> <li>• % of population served</li> <li>• Number of connections</li> </ul>
<b>Compliance with Government Policies and Standards</b>
<ul style="list-style-type: none"> <li>• Potable water standards compliance</li> <li>• Environmental compliance</li> </ul>
<b>Technical Capacity</b>
<ul style="list-style-type: none"> <li>• General infrastructure condition</li> <li>• 24-hour water availability (% per year)</li> <li>• Metered connections (%)</li> <li>• Direct sewerage coverage (% of customer base)</li> <li>• Unaccounted for water (%)</li> <li>• Reliability/adequacy of water supply sources</li> </ul>
<b>Management</b>
<ul style="list-style-type: none"> <li>• Employees per 1000 connections</li> <li>• Implementation of transparent management/administrative structure and policies</li> <li>• Implementation of performance benchmarking/performance incentives</li> <li>• Labor relations</li> </ul>
<b>Financial</b>
<ul style="list-style-type: none"> <li>• Annual revenue</li> <li>• Annual operating costs</li> <li>• Annual operating expenses/ operating revenues (%)</li> <li>• Return on equity (%)</li> <li>• Earnings before interest, taxes, and depreciation</li> <li>• Liabilities/assets (%)</li> <li>• Billing ratio (%)</li> <li>• Collection ratio (%)</li> <li>• Implementation of multiyear financial forecasting</li> <li>• Ability to mobilize private capital</li> </ul>

In developing the case studies, information was collected from a variety of sources (including literature available from open sources and interviews with utility representatives and other individuals familiar with the utilities) to identify and evaluate measures taken to improve performance in the areas shown in Table 2.2. The depth and quality of information available for this study varied considerably among individual cases, and it was not possible to collect all of the data for all of the utilities. However, the information was sufficient to derive the general findings summarized in the next section.

## 2.3 STUDY FINDINGS

While a number of findings are unique to the individual case studies, there were several important themes that emerged across the cases. The following discussion summarizes these lessons across three thematic areas:

1. What motivated municipalities to take action, and what mechanisms did they use to effect transformation?
2. What were the key features of the transformation that contributed to its success?
3. What are the prospects for sustainability of the transformation?

### 2.3.1 Motivations and Modalities for the Transformation

WSS utility transformation is typically a difficult and controversial process that can affect jobs, water prices, and utility organization and management. It can also require the implementation of new and often untested mechanisms for engaging the public and private sectors. Therefore, it is instructive to examine the reasons why the municipalities in the case studies undertook such a difficult task and what mechanisms they used to implement transformation. These are summarized in Table 2.3.

<b>TABLE 2.3 MOTIVATIONS AND MODALITIES OF TRANSFORMATION</b>		
<b>Case Study</b>	<b>Drivers of Transformation</b>	<b>Modality of Transformation</b>
<b>AFRICA (SUB-SAHARAN)</b>		
1. South Africa: Dolphin Coast/Siza Water Company	Severe financial problems of concessionaire	<b>Management reform:</b> Driven by terms of renegotiated concession
2. Uganda: National Water and Sanitation Corporation	Severe financial problems of national water company	<b>Management reform:</b> Driven by terms of performance contract between NWSC and the Government of Uganda and subsequent delegated area management contracts, also performance driven, between NWSC and staff and private sector operators.
<b>ASIA &amp; NEAR EAST</b>		
3. Egypt: Alexandria/Alexandria Water Company	Initiative of utility to become a world-class operation	<b>Management reform and utility restructuring:</b> Utility recently transferred to new public business sector company
4. India: Municipality of Alandur Underground Sewerage Project	Initiative by city council chairman in response to public demands addressing health and sanitation concerns	<b>Management reform and utility restructuring:</b> Management contracting and BOT arrangement, but no large-scale restructuring of existing WSS function within city government
5. Philippines: Metro Manila East/Manila Water Company, Inc.	Enactment of National Water Crisis Act, in response to local drought, chronic poor water service, and water supply shortages	<b>Utility restructuring:</b> Two concessions to private sector (This study only considers one of the two in detail.)
<b>EUROPE &amp; EURASIA</b>		
6. Hungary: Debrecen/Debrecen Water Works Company	National political/economic restructuring to transition from a centrally planned to a market economy	<b>Utility restructuring:</b> Establishing new public share company
<b>LATIN AMERICA &amp; THE CARIBBEAN</b>		
7. Colombia: Cartagena/ACUACAR	Initiative by mayor in response to public demands to address chronic water service problems	<b>Utility restructuring:</b> Abolishing public utility and replacing with a new mixed-capital company
8. Mexico: Tlalnepantla/OPDM	Enactment by national government of new public finance legislation and new incentives for public environmental investments	<b>Management reform:</b> Improvements in utility's financial management

As shown in the table, the motivations for transformation can be traced to specific events or conditions that required action. In at least three of the case studies, the drive for transformation was precipitated by political action in response to public discontent with water service. In two others, severe financial problems forced local leaders to pursue change. Opportunities provided by the enactment of new legislation was the driver for action in two of the case studies.

The general approaches taken by the municipalities to implement transformation varied considerably. In three of the cases, transformation was achieved almost entirely through management reforms within the utilities themselves. At the other extreme, three utilities were subjected to major restructuring which resulted in substantially reorganized entities with new relationships to their municipal governments. The remaining two utilities made important structural and management changes between these two ends of the spectrum. For example, in the case of the Alandur Underground Sewerage Project, reforms included introduction of an entirely new function (sewage management and wastewater treatment) and the introduction of a private contractor. However, the municipality did not undertake basic reforms to the structure and management of the water management function within the municipal government.

### **2.3.2 Key Features Contributing to the Success of the Transformation Process**

The case studies identified a range of factors that contributed to the transformation of utilities from unbankable to bankable conditions. These are discussed in detail in the case studies provided in Volume II of this report. While a number of factors were unique to the individual utility situation, there were a number of features of transformation that recurred across a number of the case studies. These are summarized in Table 2.4 and discussed below.

## **FEATURES EXTERNAL TO THE UTILITY**

### **Effective and transparent legal/regulatory framework**

In all of the case studies, the presence of a legal and regulatory framework that provides adequate oversight and allows all parties to participate in contract negotiations, tariff negotiations, and compliance oversight was essential to transformation success. Also critical was the presence of an independent and transparent regulatory body charged with oversight of regulatory and contract compliance, disputes adjudication, and consideration of agreement and tariffs revisions.

- In the case of Cartagena, the creation of a new mixed-capital company, ACUACAR, to manage the district's water system could not have taken place without appropriate authorizing legislation. In 1992, the Government of Colombia passed Law 142 establishing a clear and detailed framework for setting water and sewer tariffs. Law 142 was amended to ensure consistent methodologies for both private and public operators. The normative framework established for tariff-setting protects the company from undue political influence in determining user charges.
- Presidential decrees provided a solid legal framework that enabled the Alexandria Water Company to become a subsidiary of a public holding company and established a new national public authority to regulate Egypt's water and wastewater utilities.
- The Manila concession is an example of "regulation by contract." The concession agreement establishes clear and detailed arrangements for regulating tariffs. It also placed an obligation on the concessionaire to provide revenue in order to maintain an independent regulatory office within the municipal authority. The government is now working towards establishing a national utility regulatory agency.
- A law passed in April 2000 by the Mexican government that increased financial autonomy for sub-national governments was critical to Tlalnepantla's WSS utility, OPDM, in its ability to overcome the restrictions to subsidiarity and acquire financing independently of the national government.

**TABLE 2.4 KEY FEATURES CONTRIBUTING TO TRANSFORMATION SUCCESS**

CASE STUDY	Features External to Utility					Features Internal to Utility					
	Effective and Transparent Legal/Regulatory Framework	Strong Leadership and Political Will	Financial Assistance from Public Sources	Fiscal Discipline Imposed in Financial Agreements	Coordinated Technical Assistance from International Community	Public Outreach/Participation	Fair Labor Transition Process	Instilling a Business Culture within Organization	Improved Understanding of Customer Base	Accessing External Expertise and Experience through Contracting	Insulation of Business Decisions from Political Process
<b>AFRICA (SUB-SAHARAN)</b>											
1. South Africa: Dolphin Coast/Siza Water	•				•	•	•	•	•		
2. Uganda: National Water and Sanitation Corporation	•	•			•		•	•	•	•	•
<b>ASIA &amp; NEAR EAST</b>											
3. Egypt: Alexandria/Alexandria Water Company	•	•	•		•	•	•	•			•
4. India: Municipality of Alandur Underground Sewerage Project	•	•	•	•	•	•				•	
5. Philippines: Metro Manila East/Manila Water Company	•	•			•	•	•	•			•
<b>EASTERN EUROPE &amp; EURASIA</b>											
6. Hungary: Debrecen/Debrecen Water Works Company	•	•	•	•			•	•	•	•	•
<b>LATIN AMERICA &amp; THE CARIBBEAN</b>											
7. Colombia: Cartagena/ACUACAR	•	•	•	•	•	•			•	•	
8. Mexico: Tlalnepantla/OPDM	•		•	•	•				•	•	

- The Water Services Act of 1997 provided the legal basis for private participation in water service provision. The Dolphin Coast concession in South Africa provided a transparent and detailed process for renegotiating terms of the agreement. This proved to be essential when fundamental flaws in the agreement contributed to severe financial problems of the concessionaire.
- Establishment of the Hungarian Debrecen Water Works Company as an autonomous public share company required a clear and effective legal framework to draw the lines of ownership and control between the company and the city government.
- In the case of the Alandur, India underground sewer project, strict adherence to international procurement guidelines, backed by a body of contract law, was crucial to the successful bidding and contracting process, particularly in light of the fact that there is no independent regulatory body specifically charged with utility oversight.
- The Government of Uganda passed a law that restructured the water and sewerage sector, establishing a single national water and sewerage corporation.

### **Strong leadership and political will**

The presence of strong leaders bolstered by solid political support was a key element to success in five cases. Often, this leadership was embodied in one individual who had the strength and tenacity to create bold proposals and see them through to implementation. Without broad-based support from the political establishment, the difficult measures inherent in transformation have little likelihood of being implemented. This support is often associated with an untenable situation that prompts public demand for change.

- In Uganda, the managing director of the NWSC was committed to the transformation and had the personal qualities necessary to lead his management team and staff through the process. He had studied the restructuring methods and experiences of top corporations and adapted them to NWSC's context, placing emphasis on clear communications, change of management concepts, and the creation of performance incentives.
- The enactment of new laws was required in the Philippines to bring about concessions for metropolitan Manila. This required strong support by senior government officials, including the country's president.
- Both of the general managers who led Debrecen Water Works Company through its transformation were strong leaders willing to take risks to achieve their clearly articulated objectives.
- In the case of Cartagena, local and national officials had the political will to abolish the existing public water department and replace it with a mixed-capital company operating under a management contract.
- In Alandur, the majority of the city council maintained strong support for a new sewer system that included private sector participation. The city council continued to support the plan in the face of public concerns over the costs and private sector participation for the first time in the city's history.

### **Financial assistance from public sources**

The provision of financial assistance from public sources, under preferential terms, was a critical feature in at least five of the case studies. In all of these cases, the utilities would not have been able to finance their investments from private capital alone. This assistance came from a variety of international and domestic sources and in a variety of forms, including grants, subsidies, concessionary loans, and credit enhancements.

- While Debrecen Water Works Company has been successful in accessing private capital, 42 percent of the funds for its investments over the past ten years have come from grants and subsidies from international and domestic sources. The company continues to aggressively seek grant funding as a component of its capital budgeting.

- The Alexandria Water Company is not currently targeting private capital and will continue to focus on obtaining international donor grant funds and loans from Egypt’s National Investment Bank.
- A partial credit guarantee from the International Finance Corporation to a Mexican trust established by the Municipality of Tlalnepantla enabled the trust to successfully issue bonds providing the finance base for OPDM’s investments in water conservation projects.
- Alandur’s underground sewer project could not have been implemented without concession financing and subsidies from the government and public-private entities in the State of Tamil Nadu established specifically to meet the credit needs of municipalities without access to private capital because of their low or nonexistent credit rating.
- In a 1999 loan package to the District of Cartagena for water system improvements, 96 percent of the financing came from World Bank and the Government of Colombia, while only four percent came from the mixed capital company ACUACAR, the management contractor for the utility.

### **Fiscal discipline imposed in financial agreements**

Conditions provided in loans to municipalities to help assure the lender of repayment can have the salutary effect of forcing local political leaders and utility managers to be more disciplined in their expenditure and capital investment decisions. This was identified as an important feature in four of the case studies.

- A number of conditions were placed on the Municipality of Alandur by lenders financing its underground sewer project, including requirements by the Tamil Nadu Urban Development Fund for the municipal government to establish a separate account distinct from the city budget and to limit its new debt to a percentage of its annual revenue.
- A crucial condition of the first commercial loan issued to the newly established Debrecen Water Works Company in 1996, by Hungary’s Trade and Credit Bank, was that financial management would remain under the control of the company rather than city government.
- Conditions in the financing provided to the Municipality of Tlalnepantla for water improvements, such as requirements to maintain specified financial ratios, have forced the municipality to accept a challenging set of fiscal and financial discipline measures.
- As a counter-example, the 1999 World Bank loan to the District of Cartagena was approved with a sovereign guarantee from the Government of Colombia, making the district’s underlying credit quality largely irrelevant and providing little incentive for the bank to assess or strengthen the district’s creditworthiness.

### **Coordinated technical assistance from the international community**

Technical assistance from multilateral institutions and bilateral donors was an essential ingredient in almost all of the cases. The types of assistance varied widely, ranging from strengthening technical and financial capacity of municipalities and WSS utilities to providing technical assistance in developing procurement packages and executing bidding procedures. In most cases, greater leverage was achieved by coordinating the assistance activities of various international, national, and local organizations.

- The support of external donors, working in a coordinated way, has contributed to the Uganda NWSC’s successful transformation. As the lead donor, Germany provided technical assistance to support the reform effort and grant finance for rehabilitation of Kampala’s network. The World Bank has supported overall utility reform activities in the Ministry of Finance. Donors have formed a water and sanitation working group to monitor progress and coordinate their interventions.

- Communication and coordination among USAID’s Institutional Strengthening Contract managers and staff, the Alexandria Water Company, and other important stakeholders were key features of USAID’s technical assistance to the utility.
- Close coordination between the IFC, the Dexia Group, and the Municipality of Tlalnepantla and its water utility, OPDM, resulted in a successful financing package for water conservation investments.
- Support provided by the World Bank and the Inter-American Development Bank addressed a wide range of needs associated with restructuring the Cartagena WSS utility (e.g., implementing a public bid process).
- In the case of the Municipality of Alandur’s underground sewerage project, the expertise required to plan and manage the technical and financial aspects of the project significantly exceeded the capacity of the city government. Therefore, assistance from other governmental bodies in the state, the City of Chennai, and USAID’s Financial Institutions Reform and Expansion Project were critical to success.
- In the case of the Dolphin Coast concession, technical assistance provided by the Municipal Infrastructure Investment Unit is critical to assuring the long-term viability of the enterprise.
- The IFC provided financial and technical assistance to the Manila Water Works and Sewerage System (MWSS) as its lead advisor to assist in developing the concession strategy and structure, managing the bidding process, and helping negotiate the final concession agreements with the two winning bidders (one for the West Zone and one for the East Zone).

## FEATURES INTERNAL TO THE UTILITY

### Public outreach/participation

As discussed above, achieving the support and confidence of the local community is essential to transformation. This is supported by the findings in the five of the case studies. Transformation requires public acceptance for new methods of doing business, such as engaging the private sector. It can require acceptance of increased fees and tariffs, and, in all cases, that customers pay their bills. Public participation in decision-making is therefore essential in all phases of transformation, from gaining initial support for change through establishing continued lines of communication between the WSS utility and its customers.

- In Cartagena, the utility established community committees and an active citizen watchdog group, all leading to improved governance.
- The Alexandria Water Company enlarged its customer service and public outreach departments and made targeted efforts to ensure that the public understood the company’s actions and the performance improvements it was seeking.
- Performance obligations and transparency requirements in the Manila Water Company, Inc. (MWCI) concession agreement in metropolitan Manila afford the public the chance to analyze and critique the company’s actions, an ongoing process that maintains focus on customer needs. The MWCI focused public outreach as one of its core strategies for improving service.
- In the case of the Alandur underground sewerage project, as the project’s success depended greatly on collection of connection charges and monthly sewer fees and the public acceptance of a private BOT participant, an active community awareness and outreach program was critical.
- In the case of Dolphin Coast, one of the most serious criticisms of the concessionaire was its initial failure to adequately communicate and consult with the public. This was particularly true given the large percentage of the population that is poor. An important component of the concessionaire’s transformation was the initiation of an ongoing community consultation and engagement process.

## **Fair labor transition process**

It is especially important to note that, in seven out of the eight case studies, the number of employees in the water utility sector was reduced following transformation. Whether or not this was originally planned, the long-term result of increased productivity involved at least some reduction in staff. In some cases, the reductions were substantial. (In Cartagena, the number of employees was reduced from 1300 to 800, and the metropolitan Manila East Zone concession reduced staff by 25 percent.) This reality necessitates a process to ensure that employees receive fair treatment and consideration for reassignments during organizational transformation, with a plan to assist those employees who may lose their employment. This was evident in five case studies.

- MWCI, the concessionaire for metropolitan Manila's East Zone, implemented a process of staff reorganization and reduction focused on providing incentives to workers employed by the predecessor utility. This process established minimal labor opposition to the concession.
- In the case of reform for the Uganda NWSC, a multi-faceted staff reduction program was implemented that included attractive voluntary early retirement benefits funded by the Government of Uganda. An important feature of the program was that staff were encouraged to bid for the delegated management contracts. This offered staff the opportunity to significantly increase their total remuneration.
- When Siza Water Company assumed operations and management of the Dolphin Coast water system through a concession, it agreed to respect existing employment contracts and allow continued freedom of association and collective bargaining.
- Debrecen Water Works Company, which reduced its labor force by half since its establishment in 1995, placed priority on making staff reductions through attrition; however, in cases where employees were terminated, the company provided severance pay.
- Alexandria Water Company reduced its labor force over a period of five years through attrition.

## **Instilling a business culture within the organization**

In five of the case studies, utility managers launched specific initiatives to change the outlook of staff and line management to accept and embrace business approaches and become more customer driven. This included adoption of management systems employing performance measurement tools, establishing clear performance targets, and implementing incentives to reward good performance.

- The Uganda NWSC introduced measurable performance targets based on achieving business objectives and a monthly incentive payment program for staff and management tied to these targets. Targets were set in light of current performance and a realistic assessment of what could be achieved within the timeframe, given available resources. Several of the performance targets (e.g., response time for complaints and the time required to make new connections) were aimed at improving customer relations.
- Alexandria Water Company implemented a staff performance incentive system that provides a monthly monetary incentive for those employees exceeding pre-determined levels of performance.
- Debrecen Water Works Company prepares five-year strategic plans for the company. The targets established in the plan, such as achieving a two percent return on assets, focus the organization on achieving business objectives.
- Siza Water Company implemented performance-based incentives for its employees when it assumed responsibility for management and operations of the Borough of Dolphin Coast's water system under a concession.

- In Manila, the concessionaire objectively measures the performance within different district metering zones and district metering areas and provides corporate recognition for individual performance and community service.

### **Improved understanding of the customer base**

In four of the case studies, improved understanding of the current customer base and the prospects for future growth was a key element of transformation. This included knowing not only the numbers and types of customers, but their needs and concerns and their ability and propensity to pay for water and wastewater services.

- Several of the performance targets implemented by the Uganda NWSC (discussed above) are aimed at understanding customer needs (e.g., response time for complaints and the time required to make new connections). Management has implemented new management information systems to track customer history and concerns.
- Debrecen Water Works Company has developed a service plan for each of its customer groups (residential, institutional, and commercial).
- A poor understanding of the prospects for growth in the customer base was a major factor in the financial crisis that forced renegotiation of the Dolphin Coast concession. Both parties in the negotiations accepted unrealistic growth projections. The new concession reflects a more realistic assessment of the prospects for growth.
- In Tlalnepantla, OPDM launched a process to update its database of residential customers and estimated that this initiative would increase water revenues by 50 percent through improved billing and collections and normalizing illegal connections.

### **Accessing external expertise and experience through contracting**

In five of the case studies, utilities needed to access technical and management services from outside sources, and they found that service and management contracting were important tools to use in meeting these needs. The range of services provided under contract was very wide, ranging from highly specific support functions accessed through service contracts to broad system management under management contracts.

- Management of Cartagena's water and sewer system is carried out under a form of operation and management contract with ACUACAR, a mixed public/private capital company. Under this arrangement ACUACAR management has undertaken major cost reduction initiatives, including measures to identify unaccounted for water and respond more quickly to pipe breaks.
- Tlalnepantla's OPDM acquires specific services from private contractors through an open tender process and requires contractors to post performance bonds to assure that bidders meet their obligations.
- The Municipality of Alandur employed a management contractor to operate and maintain its new underground sewerage system for a period of five years on a fixed fee basis.
- By using highly directed service contracts, Debrecen Water Works Company outsourced a large number of functions previously conducted by company staff, including energy management, equipment inspection, industrial and environmental safety, reading of the water meters, billing, and preparation and delivery of invoices.
- Uganda's National Water and Sanitation Corporation accessed the expertise of an international water operator, Ondeo Services, to manage water and sanitation services in the Kampala service area from 2002 to 2004. NWSC was able to reassign this function to its in-house staff when Ondeo's management contract expired.

## **Insulation of business decisions from the political process**

In at least four of the case studies, specific measures were taken to ensure that utility management decisions were shielded from the influence of political considerations. This is especially important in decisions that affect the “bottom line,” such as investment planning and staffing. Management autonomy was an integral component of the corporatization strategies applied in three of the cases where utility management remained in the hands of the public sector (Alexandria, Uganda, and Debrecen). In a fourth case, Manila MWCI, management autonomy was expressly provided in the structure of the concession.

- The transition of Alexandria Water Company’s personnel system from one governed by civil service regulations to one based on merit provided management with a greater degree of autonomy in establishing and implementing personnel policies.
- In Uganda, NWSC board members are now appointed in a manner that achieves an appropriate mix of the relevant technical and commercial skills. The board is now more independent, and the roles of both the board and management have been clearly distinguished. More recently, the board has developed a more transparent and effective procedure for regular monitoring and reporting by management to the board and by the board to the Government of Uganda. On a negative note, continuing impositions of political decisions threaten the long-term sustainability of NWSC. (E.g., under government policy, NWSC is being forced to assume service responsibility for small towns in poor financial condition.)
- Debrecen Water Works Company was structured to provide a large degree of management autonomy. While the city government is a 100 percent shareholder of the company, key business decisions in areas such as personnel, operations, and investments (except for exceptionally large investments) are in the hands of utility management.
- Manila’s MWCI has established a planning and management process with flexibility to plan and act on customer needs without government bureaucratic processes that had significantly slowed the former public utility’s response times to changing circumstances.

### **2.3.3 Sustainability of the Transformation**

While the eight utilities addressed in this study have been successful in making reforms needed to address their current needs, the question of the sustainability of these achievements over the long run needs to be addressed. Reforms to meet specific project needs are not the same as achieving “transformation.” In this context, transformation means that sufficient measures have been imbedded into a municipality’s WSS sector (at the policy, organization, and management levels) to ensure that its utility continues to meet capital market norms for governance and business performance. This is essential to ensure that the reforms were not simply directed to one-time project financing needs, but to enhancing the utility’s potential for continuing access to external capital, expertise, and experience.

While the long-term sustainability of the reforms cannot be assessed with certainty, useful lessons can nevertheless be drawn about the relationships between the transformation process and its impact on enhancing the utilities’ long-term prospects for sustainability. This is shown in Table 2.5.

**TABLE 2.5 IMPACT OF TRANSFORMATION PROCESS ON FACILITATING LONG-TERM SUSTAINABILITY**

CASE STUDY	TRANSFORMATION FACTORS SUPPORTING OR HINDERING SUSTAINABILITY		PROSPECTS FOR SUSTAINABILITY
	SUPPORTING	HINDERING	
<b>AFRICA (SUB-SAHARA)</b>			
1. South Africa: Dolphin Coast/Siza Water Company	Flexibility of concession agreement to make necessary corrections	Flaws in municipality's oversight of concession compliance, uncertainties in implementation of government's "free water" policy	Positive
2. Uganda: National Water and Sanitation Corporation	Reforms driven by clear performance targets	Remaining inadequacies in regulatory framework do not fully insulate business decisions from political considerations	Positive, but ability to access capital markets remains untested, and durability of the new corporate management and governance is also uncertain
<b>ASIA &amp; THE NEAR EAST</b>			
3. Egypt: Alexandria/Alexandria Water Company	Utility is empowered to access public and private sources and has implemented internal systems for continuing improvement	Continued reliance on concessionary financing from government sources	Positive, but ability to access capital markets remains untested
4. India: Municipality of Alandur Underground Sewerage Project	Revenue intercepts and limits on future indebtedness impose fiscal discipline on municipal government	Concessionary financing and grants have not driven fundamental change of the municipal WSS department	Uncertain
5. Philippines: Metro Manila East/Manila Water Company, Inc.	Fundamental restructuring within a strong legal/regulatory framework imposed through concession arrangements	None identified	Positive, management autonomy and regulatory arrangements established for life of concession
<b>EUROPE &amp; EURASIA</b>			
6. Hungary: Debrecen/Debrecen Water Works Company	Fundamental changes in utility structure combined with implementation of business-focused management processes promote continuing improvement	Continued reliance on grants and subsidies	Positive
<b>LATIN AMERICA &amp; THE CARIBBEAN</b>			
7. Colombia: Cartagena/ACUACAR	Fundamental changes in utility structure resulted in more business-like operations, revenue intercepts to ensure repayment of loan impose fiscal discipline on municipality	Sovereign guarantee in loan to municipality has made its creditworthiness largely irrelevant, poorly structured division of responsibilities between city and operator for choosing and financing investments	Positive, but uncertainties remain
8. Mexico: Tlalnepantla/OPDM	Internal reforms have dramatically improved billing effectiveness	Financing mechanism placed conditions on municipal government but did not drive reform within the utility	Uncertain

As shown in the table, the outlook for long-term sustainability for the majority of case studies' transformations appears to be positive. However, in two of the cases, the prospects for sustainability are uncertain since substantial changes within the utilities themselves could not be identified. In both of these cases, the focus of transformation was primarily on the immediate need to secure financing for specific projects rather than on fundamental reform of the public entities responsible for water and sewerage services.

## **2.4 LESSONS LEARNED FROM THE CASE STUDIES**

The findings presented in Section 2.3 provide a number of lessons that can be useful to USAID missions and bureaus in designing programs and activities to assist municipalities in their transformation efforts. These are presented below.

### **1. Take advantage of events that raise public demand for transformation.**

Transformation is a difficult proposition, often involving wrenching political and management decisions requiring tariff revisions, staffing changes, and utility reorganization. Consequently, political leaders and utility managers tend to defer difficult decisions until events force them to take action. In the majority of case studies, transformation was driven by events such as utility financial crises, enactment of new legislation, or public outcry for change. Situations that demand change open opportunities for new ideas and receptivity to transformation.

### **2. Seek out and support champions for transformation.**

Given the difficulties of implementing transformation discussed above, the presence of strong leadership to initiate, advocate, and manage change is important. For example, the successful implementation of the Municipality of Alandur's new underground system was dependent on the political leadership of the mayor and city council. In the case of Debrecen Water Works Company, the general managers were strong advocates for change, and the Manila concession was supported by the president of the Philippines.

### **3. Ensure that the legal/regulatory framework is conducive to transformation.**

As demonstrated in all of the case studies, utility transformation cannot succeed without an appropriate legal and regulatory framework that is transparent and effective. Therefore, technical assistance programs to support utility transformation must work at both the policy and utility levels to ensure success. It is especially important to ensure that the business decisions at the utility level are insulated from political considerations and that policy decisions, such as tariff revisions, are made by independent regulatory bodies distinct from utility management.

### **4. Incorporate public participation into assistance activities.**

The critical role of public "buy-in" was borne out by the case studies. Municipalities and utilities should provide ample opportunities for local communities to understand and contribute to dialogue that leads to utility reforms. Assistance provided to utilities should include a public outreach/participation component. These include full and open reporting to the public of utility operations and finances (such as public reporting required in Manila Water Company's concession agreement); establishment of public outreach units within the utility to implement ongoing public outreach and awareness programs (as was done by Alexandria Water Company); and utility consultations with the public through sponsorship of community committees and public meetings (as illustrated by consultation activities initiated by Cartagena's ACUCAR and the Dolphin Coast's Siza Water Company and the public meetings held by the Municipality of Alandur to review its plans for implementing connection charges and sewer fees to finance new underground sewer system).

### **5. Incorporate conditionalities into assistance packages to drive change.**

In at least four of the case studies, the presence or absence of conditionalities in assistance provided to municipalities and utilities was a major determinant of transformation success and sustainability. Conditions that commit municipalities and utilities to fiscal and managerial discipline should be considered in the design of assistance activities. Such conditionalities are a common business practice in the private sector and are often incorporated into loans provided by private lending institutions to their clients

## **6. Consider labor implications of transformation.**

It is significant that in seven out of the eight case studies, staff reductions and relocations occurred over the course of transformation. Whether or not this was originally planned, the drive for productivity often has labor impacts. These impacts and the need to establish a fair labor transition process to mitigate them should be factored into utility transformation planning and assistance activities.

## **7. Identify possibilities for mobilizing both public and private resources.**

The case studies bear out the fact that public and private participation in utility transformation is not an “either/or” proposition. In a number of cases, the capital, expertise, and experience of public institutions and the private sector were combined to effect successful transformation. In some cases, the private partner brought in capital. In others, private expertise and experience were brought in through innovative contracting arrangements. All options for mobilizing appropriate resources from public and private sources should be considered in the design of utility assistance programs.

## **8. Emphasize the application of sound business practices.**

An important feature of transformation brought out by the case studies is the need for utilities to implement management policies and practices based on sound business principles. These include, for example, senior management focus on factors that directly impact financial performance, such as improving billing and collections and reducing non-revenue water to improve cost recovery (critical in most of the case studies); implementing performance-based management practices (such as Uganda NWSC’s use of incentives based on achievement of performance targets); and developing long-term business plans and managing operations in accordance with the plans (as brought out strongly in the Debrecen Water Works Company case study). Assistance provided to utilities should help them build the capacity to become customer-driven, focused on measurable and continuous performance improvement, and able to mobilize in-house and external resources as required to meet business objectives.

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