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CASE STUDIES OF BANKABLE WATER AND SEWERAGE UTILITIES

VOLUME II: COMPENDIUM OF CASE STUDIES



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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.

ACRONYMS AND ABBREVIATIONS

ACUACAR	Cartagena Waterworks
AGBAR	Water and Sewerage Company of Barcelona
AGOSD	Alexandria General Organization for Sanitary Drainage
AGWA	Alexandria Water General Authority
AWCO	Alexandria Water Company
BEM	Business Efficiency Measures
BODC	Borough of Dolphin Coast
BOT	Build-Operarte-Transfer
CAEN	<i>Comisión de agua del estado de México</i>
CAN	<i>Comisión nacional del agua</i>
CMWSSB	Chennai Metropolitan Water Supply and Sewerage Board
DM	District Municipality
DMA	District Metering Areas
DMZ	District Metering Zones
DWD	Department of Water Development
EGAT	USAID Bureau for Economic Growth, Agriculture, and Trade
EGP	Egyptian Pound
EPA	Extraordinary Price Adjustments
EPD	<i>Empresa de servicios públicos</i>
EWRA	Egyptian Water and Wastewater Regulatory Authority
FIDIC	International Federation of Consulting Engineers
FIRE	Financial Institutions Reform and Expansion
GAAP	Generally Accepted Accounting Principles
GOM	Government of Mexico
GoTN	Government of Tamil Nadu
GOU	Government of Uganda
HUF	Hungarian Forint
IADB	Inter-American Development Bank

IDAMC	Internally Delegated Area Management Contract
IFC	International Finance Corporation
IFI	International Financial Institution
ISC	Institutional Strengthening Contract
JAC	<i>Juntas de acción comunal</i>
JAL	<i>Juntas administradores locales</i>
KPI	Key Performance Indicators
MD	Managing Director
MIIU	Municipal Infrastructure Investment Unit
MOU	Memorandum of Understanding
MWCI	Manila Water Company, Inc.
MWLE	Ministry of Water, Lands, and Environment
MWSS	Metropolitan Waterworks and Sewerage System
NCB-W2	World Bank's Contract for National Competitive Bidding
NWA	National Water Agency
NWSC	National Water and Sanitation Corporation
OPDM	<i>Organismo Publico Descentralizado para la prestacion de los servicios de agua potable, alcantarillado y saneamiento del Municipio de Tlalnepantla</i>
PC1	First performance contract signed between Government of Uganda and National Water and Sanitation Corporation
PC2	Second performance contract signed between Government of Uganda and National Water and Sanitation Corporation
PHP	Filipino Peso
Rs.	Indian Rupee
SAR	South African Rand
SWC	Siza Water Company
TNUDF	Tamil Nadu Urban Development Fund
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Limited
TUFIDCO	Tamil Nadu Urban Infrastructure Development Corporation
UfW	Unaccounted for Water
UGS	Ugandan Shilling
WWTP	Wastewater Treatment Plant

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 wastewater 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 markets¹. The Financial Sector Strategy prepared by the USAID Pillar Bureau for Economic Growth, Agriculture, and Trade (USAID/EGAT)² 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 initiative³. 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.

¹ 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."

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

³ "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

1.0 SOUTH AFRICA: BOROUGH OF DOLPHIN COAST

1.1 INTRODUCTION

In 1999, the Siza Water Company (SWC) became the first private company to manage a water and wastewater utility in South Africa. Under a groundbreaking 30-year concession contract, SWC assumed responsibility for providing water and sanitation services to the Borough of Dolphin Coast (BODC). This privatization was welcomed and supported by the city council and senior government officials, including President Mbeki who visited the area to sanction the process.

Nonetheless, the company was born into difficult conditions. In its short life, SWC has faced significant challenges, ranging from faltering technology to incorrect demand estimates for the initial concession design. Overall, it has managed to collaborate with the BODC to address these challenges and to maintain encouraging prospects for the company's long-term viability.

BODC, located about 50 kilometers north of Durban along the North Coast Development Corridor, is made up of two distinct zones: an affluent recreational strip along the coast and an area of poor communities in its "shadow," just inland among the sugar cane fields. A large proportion of this population lives in poverty, and about 47 percent of households use standpipes. In 1995, the District Council of the BODC inherited responsibility for providing local services, including water supply, sanitation, and housing, all of which were in need of substantial investment. Umgeni Water, the regional bulk water provider, managed the services during an interim period.

Due to its inability to mobilize adequate resources and a lack of local technical capacity, BODC decided to outsource water and sanitation services through a concession contract. The Development Bank of South Africa (DBSA) and South Africa's Municipal Infrastructure Investment Unit (MIIU) supported the development and completion of the concession arrangement by providing technical and advisory services during the conception and contract development phase helped to make this option understandable and financially feasible.

In January 1999, following a protracted procurement process that involved prequalification of four bidders, a 30-year concession contract was signed between the KwaDukuza Municipality in Natal Province and the SWC, a local company formed by Saur International of France (which holds a 58 percent share), four other companies, and company employees (who hold a 4 share). Under the terms of the contract, SWC assumed full responsibility for providing water and sanitation services to the BODC, which, at the time had a permanent population estimated at 34,000. SWC agreed to make lease payments to the city in the amount of 2.6 million South African rands (SAR) per year for 17 years, a rate that reflected outstanding debt on the assets in place at the time of concession.

The infrastructure that SWC took over was outdated and badly deteriorated, water losses were estimated at 30 percent (water meters needed replacing, valves were leaking, etc.), and the population of the borough was expected to be growing rapidly. Indications were that significant investment in new and upgraded facilities would be required. The operator/concessionaire agreed to finance a significant capital investment program during the first five years of the concession. In addition, the expansion of communal standpipes and VIP latrines in low-income areas was to be financed by grants from the Provincial Housing Board and other donors.

Unfortunately, the concession ran into serious problems almost immediately. By 2001, SWC encountered severe financial difficulties, and community perceptions of the concession arrangement were negative. In addition, KwaDukuza Municipality's ability to adequately monitor the performance of the concessionaire was very weak. Following a renegotiation of the terms of the contract in 2001, a reduction of the technical

assistance advisory fee paid to Saur International, and execution of a series of measures to improve performance, the concessionaire recovered.

Even before the concession contract was signed, local government structures in South Africa were undergoing a transition. In 2003, as a result of the local government demarcation and municipal restructuring process⁴, responsibility for water and sanitation services was transferred from KwaDukuza Municipality to Ilembe District Municipality (DM), within which KwaDukuza (including BODC) is located. Ilembe DM became the successor conceding authority. At the same time, a new system for monitoring the performance of the concessionaire was developed, and private auditors were engaged by the municipality⁵ to monitor and report on its compliance and overall performance.

This case study covers the period 1999 through 2003. The start-up period of 1999 through 2001 was difficult, with the identification of serious flaws in the initial concession agreement requiring significant modifications. During the period of 2002 to the present (2005), SWC initiated operations under a significantly modified concession regime which has led to financial stability.

1.2 DESCRIPTION OF THE TRANSFORMATION

1.2.1 Summary of the Transformation Process

By early 2001, the concessionaire was experiencing severe financial problems and failed to pay its second annual rental fee of SAR 3.7 million. Several factors contributed to this situation but the most significant was that the initial population growth projections of 8.5 percent per year, which provided the basis of the tender, were grossly overstated. In fact, the population in the service areas grew less than 1 percent during the first few years and is now forecast at about 4.5 percent. In addition, housing developments did not reach predicted levels; industrial development and tourism did not materialize as forecast; and Umgeni's bulk water charges increased significantly. This meant that expected opportunities to increase revenues did not materialize.

Compounding this situation was the "free basic water" policy adopted by the Government of South Africa in 2001, whereby poor households were entitled to six cubic meters of free water per month. Local governments were given responsibility for implementing the policy and were expected to adopt appropriate strategies and methods. However, allocations of the "equitable share" funds they received from the national government were not increased to cover the cost of the new policy. Instead, local governments were expected to use part of their existing allocations for this purpose. Given the funding constraints, the policy was often implemented through cross-subsidies.

SWC was responsible for implementing the policy in BODC, but it was entitled to be reimbursed through either direct or cross-subsidies. Prior to the transfer of oversight of the concession to the Ilembe DM, SWC and the DM seemed to agree on a funding strategy, whereby Ilembe DM would use its equitable share funds to pay for basic water consumed from standpipes, while cross-subsidies would finance the basic water consumed by households with individual connections. However, practical methods for the actual delivery of free water were not addressed. At this time, the KwaDukuza Municipality looked closely at the options of running the operation themselves, outsourcing it to other operators, or accepting an increased tariff. This analysis resulted in the decision to accept a restructuring of the concession agreement and an increase in tariff. They agreed to extraordinary increases in tariffs of 15 percent as of July 2001 and 12 percent as of July

⁴ Resulting from implementation of provisions of the Municipal Demarcation Act No. 27 of 1998 and provisions of the Water Services Act No. 108 of 1997.

⁵ Technical monitoring by Munitech (Pty), Ltd. and financial monitoring by Deloitte & Touche South Africa. Monitoring is completed quarterly and financed by the municipality.

2002 (under a provision of the concession agreement that provides for “extraordinary increases”), a 50 percent reduction of SWC’s concession fee for the next five years, and a scaling back of the five-year investment program from SAR 21.6 million to SAR 10 million. SWC also halved the management fee paid to Saur International for the next five years. The tariff increases that were necessary to recover the deficits and the downsizing of the investment program led to negative media coverage and customer dissatisfaction. Even still, customers conceded that service delivered was better than before and that they were still paying less per cubic meter than in Durban.

A workshop with community representatives held in December 2002 revealed some community dissatisfaction with SWC’s customer relations, response to complaints, procedures for service interruptions, procedures for new connections, and approach to delivering free basic water. SWC acknowledged that performance improvements were needed in the area of customer relations and committed to taking action in this area.

1.2.2 Summary of Performance Improvements

In spite of difficulties early in the concession period, SWC has been able to improve both technical and financial performance of the utility. Twenty-four hour service is being provided to all customers, either through house connections or free water from community standpipes. Response to system outages has significantly improved with average repair times of about four hours. Distribution systems and metering have been improved with water loss, now standing at a very respectable 10 percent. SWC has been able to move from focus on system repairs to initiate a preventative maintenance program. A more accurate billing and collection system that includes all customers, records meter readings accurately, and provides complete and regular billing, has led to increased revenue. Revenues have increased by 68 percent (with only a 6 percent increase in customers), and the ratio of operating expenses to operating revenues indicates that the utility is now covering its expenses. The combination of concession agreement modifications and operational and management initiatives taken by SWC in 2001 have resulted in performance improvements, as summarized in Table 1.1.

A major aspect of the BODC water and sewerage services transformation was that, under the private concession, the operator took increased responsibility for maintenance of and upgrades to water supply and sanitation infrastructure. This responsibility influenced both the successful and unsuccessful steps by SWC in the early stages of the transformation process. Positive steps that SWC took to support this goal of improved maintenance and upgrading of infrastructure included:

- SWC developed a business plan and a five-year development plan that outlined the needs in different zones within the concession area and investment requirements for meeting those needs. SWC has invested in accordance with the plan.
- With the take over of operations, SWC created computerized customer accounts detailing relevant information, such as the account number, service location, and consumption history. This enabled SWC to monitor consumption patterns, effectively shut off water for non-payment, and utilize usage information and payment patterns to make decisions about future developments.
- SWC implemented a community fund to inform the public of the company’s activities and to promote social investment. Although other means of outreach were less successful, this fund enabled SWC to make badly needed progress in communication with its client base. This proved to be a very successful way of distributing funds to the needy as decisions are made by community members.
- From the onset, SWC invested in reduction of water loss. Within one and a half years, the concessionaire surpassed expectations by reducing unaccounted for water by nearly half.

- SWC agreed to respect existing employment contracts, based on operational requirements. The company also agreed to allow continued freedom of association and collective bargaining. This was considered extremely important to the ability of the concession agreement to proceed effectively and to the ability of SWC to maintain the support of its employee base while weathering challenges of business uncertainties. SWC has also supported skills upgrading for employees.

TABLE I.1. OBSERVED PERFORMANCE CHANGES^a

Performance Indicator	Pre-Transformation (1999)	Post-Transformation (2002–2003)
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	No effective strategy	Improved data management and understanding of customer base
Affordability of service, especially to the poor	No free water was provided, but tariffs were heavily subsidized.	Government policy is to provide basic free water. Standpipes have been installed in many areas to provide this service.
Quality of customer relations	Poor in certain areas (specifically, in the poorer areas)	Independent community fund focused on customer needs established. SWC has embarked on a focused approach in specific areas.
% of population served	Information is unknown, but large areas were not serviced at all	100 (including standpipe service)
Number of connections	3,400	3,600
Compliance with Applicable Government Policies and Standards:		
Potable water standards compliance	89% bacteriological ^b 98% chemical ^b	100% bacteriological (all testing completed by accredited laboratory) 100% chemical
Environmental compliance (there are two treatment plants)	94% chemical; 100% ^b bacteriological	98% chemical; 100% bacteriological
Technical Capacity:		
General infrastructure condition	Very poor	Improved due to regular maintenance and replacements.
Unaccounted for water (%)	30.0 ^b	11.9
Continuity of service	24 hours per day, but with significant delays in repairs (days) when repairs were needed	24 hours per day, but with much shorter delays in restoration (an average of 4-hour response time)
Management:		
Employees per 1000 connections	10.0	9.4
Implementation of performance monitoring/performance incentives	Inadequate	Much improved
Labor relations	Good, but technical skills very poor	Good. Substantial training and upgrading of skills
Financial:		
Annual revenue (SAR, millions)	12.2 ^d	20.5 ^e
Annual operating costs (SAR, millions) ^c	14.5 ^d	18.6 ^e
Annual operating expenses/annual operating revenues (%)	119 ^d	91.0 ^e
Earnings before interest, taxes, & depreciation (SAR, millions)	(2.3) ^d	1.9 ^e
Billing efficiency	Information lacking, but, anecdotally, billing efficiency was good	100%
Collection ratio (%)	Information lacking, but, anecdotally, many accounts significantly in arrears, often due to disputes about meter readings	97 % on 90 Days
Implementation of multiyear financial forecasting	No system forecasting prior to concession	Forecasting implemented, using revised growth estimates
Ability to mobilize private capital	Nil	SAR 8.5 million invested by SWC
^a Currency exchange rates: 1 US Dollar = 5.89 South African rands (1/1/99); 1 US Dollar = 8.60 South African rands (1/1/03). (Source: FX Converter, http://www.oanda.com)		
^b 2000/2001.		
^c Includes cost of sales and operating expenses.		
^d 2000, the first full year of concession.		
^e 2002		

In addition to these steps, the relationship between the public and private partners has been critical to SWC. This relationship enabled the company to survive through what some may consider insurmountable challenges. Dr. James Leigland, a project manager at the Municipal Infrastructure Investment Unit explained:

“The contract is really a partnership in the sense that the council has several important responsibilities, just as the private partner does. The council will continue to set the tariffs levied for water and sanitation services, determine the quality and level of service provided, as well as agree to the levels of capital investment proposed by the private partner to meet its performance requirements.”⁶

Werner Zybrands, a specialist in municipal service partnerships in South Africa, describes this as “a sound understanding between the contracting parties and a positive attitude to solve what were often seen as insurmountable problems.”⁷

One way in which SWC promoted this relationship with the BODC was through an early, lump-sum payment of SAR 15 million⁸ to the council on lease fees that would otherwise be paid over a 16-year period. In doing so, SWC attempted both to reduce long term costs and enable the council to immediately redeem long term debts on water system assets if they so chose, freeing them to borrow for other needs.

In addition to their formal contractual obligations, the council has helped SWC to understand and attend to customer issues through the position of councilors who live in the service area. While the Siza Water Youth and Community Development Fund served as a very useful vehicle for SWC in its relationship with the community, other company-backed approaches to outreach were less successful. Although SWC appointed two community liaison officers and held community meetings, these company-backed approaches to outreach were not overly successful at soliciting input. Instead, councilors have served as liaisons between the people and the higher level council members and have helped to facilitate communication between the communities and SWC. Communications in some areas, particularly the poor ones, continue to be an issue for SWC. In these areas, people often do not voice complaints directly to SWC, making it difficult to respond to issues and problems.

Overall, SWC’s records of compliance with the terms of the contract and its technical performance have been good. It has replaced and improved existing infrastructure through the investment program and introduced a regular preventative maintenance and replacement program. Its own data on potable water quality and sewage discharges indicate a high level of compliance with applicable standards. All tests relating to quality are done by an independent, accredited laboratory⁹.

Upon signature of the concession agreement, all existing staff were transferred to SWC; most are still employed there. Their technical skills have been upgraded substantially, and they are considered to be generally receiving a more attractive compensation and benefits package than municipal staff. The number of staff per 1000 connections has not changed significantly over time, but is considered within the range of regional best practice.

⁶ Lesaoane, p.1.

⁷ Farlam, 21.

⁸ Funding was provided by concession partners initially, but has since been converted to loans from South African banks.

⁹ Talbot and Talbot.

While performance of the concession has improved overall, the implementation of the free basic water policy was initially problematic¹⁰, and expectations have not always been met. Government policy is that free water be distributed to the needy. The Ilembe District Municipality has agreed that “needy” may be interpreted as those people who have to walk to a communal standpipe for water. However, families that use prepaid meters complain that they do not benefit from the policy. Also, those with individual household connections complain that, although they do not have to pay the volumetric charge for the first six cubic meters, they must pay the basic monthly connection fee of about SAR 40. This has led to continued community dissatisfaction. In efforts to satisfy this free water requirement, SWC has distributed free water to approximately half the population.

1.2.3 Governance and Management

Under the concession arrangement, SWC assumed responsibility for all management and operations of the water and sanitation system, an approved investment program with funds provided through loans and fees paid by developers, and all the commercial risk. SWC is governed by the board of directors appointed by its private shareholders, including Saur International (58 percent), other private investment institutions (38 percent), and employee shares (4 percent).

1.2.4 Regulatory/Oversight Framework

Municipalities are charged with providing water and wastewater services according to law. The Municipal Systems Act, No. 32 of 2000 provided the legal framework for public-private partnerships. However, no formal national water utility regulatory agency for the sector exists and, in practice, the concessionaire is regulated by contract. The Water Services Act No 108 of 1997 does provide the framework for provision of water services, defining water service authorities, water service providers, and establishing the right of water service authorities (municipalities) to contract with private entities for the provision of services. The Municipal Systems Act also gives municipalities the responsibility and authority to set tariff levels.

Monitoring the performance of the concessionaire, a municipality responsibility, was initially lax. An evaluation study funded by the MIIU in late 2002 found that, while SWC had respected contractual reporting requirements meticulously, KwaDukuza Municipality had failed to monitor and regulate the concession adequately. Moreover, the monitoring and reporting system that had been created under the terms of the contract was limited and did not provide comprehensive information about operator performance or its financial viability. Consequently, the municipality had no advance warning of SWC’s 2001 financial problems. The evaluation study also found that KwaDukuza Municipality had failed to use some of the funds collected from the concessionaire for the intended purposes¹¹.

Prior to the transfer of the contract to Ilembe District Municipality (under terms of national demarcation changes) in July 2003, a comprehensive monitoring matrix was developed and two firms (one technical and one financial) were engaged to audit compliance. There was some optimism that the transfer of responsibility to the larger Ilembe DM would bring improvements in supervision, but its capacity to do so was also limited. The Department of Water and Forestry has been able to provide Ilembe DM some technical assistance, although only temporarily. Findings of a 2003 study, funded by MIIU, indicated that Ilembe’s supervision of the concession has also been inadequate and reflect a sense of ownership, as the DM was not involved in the award of the original contract. However, with the engagement of contract monitoring agencies to provide timely accurate reporting on the functioning of SWC, the situation is improving.

¹⁰ Since the provision of free water is a government requirement, the municipality has agreed to reimburse SWC for the cost of providing it.

¹¹ E.g., only part of the monitoring fee paid by SWC was used to carry out monitoring. Rental fees were not used to repay debts for infrastructure development, but rather for municipal operating expenses.

1.2.5 Capital Finance

The revised investment program has been implemented as planned and, during the four-year period of April 1999 to March 2003, SAR 8.3 million (roughly US\$1 million) had been invested by the concessionaire from its own sources (concessionaire investment and bank loans). To date, most of this was invested in upgrading the water distribution system. Future investments will focus on upgrading water and sewer treatment works. It should be noted that this level of investment is not in line with the original concession agreement, but was renegotiated down in 2001 from an initial commitment of SAR 21.6 million (\$3.6 million) to SAR 10 million (\$1.7 million). SWC is currently ahead of its current investment schedule, as laid out in the second five-year plan.

1.3 ANALYSIS OF THE TRANSFORMATION

1.3.1 Success

The Dolphin Coast Concession is now nearly one-third complete. The situation looks positive, but cannot yet be considered an unqualified success yet. The introduction of adequate operating methods and regular maintenance and the implementation of high priority investments can be expected to pay off in the longer term and result in a sustainable transformation. The concession weathered a difficult period in 2001 when the agreement was renegotiated. Since then, tariffs have been sufficient to cover operation and maintenance costs, concession fees, and SWC's investment program. However, problems remain. Sections of old and substandard distribution system need replacing. Although customer service has improved, continuing customer focus and service improvement are still needed.

1.3.2 Key Features of the Transformation Process

While the transformation of the concession is still a work in progress, a number of lessons can be extracted from this case study:

- **The private operator provided professionalism, technical skills, and knowledge resources that the municipality lacked:** In spite of a lack of contract monitoring, SWC pursued planned programs focusing on improved operation and maintenance with specific maintenance schedules, unaccounted for water loss, staff training, billing and collections, and a rational investment program. SWC has access to technical resources deriving from Saur International and other concession partners when problems arise. This capacity and the actions taken by the concessionaire have led to the generally accepted conclusion that service has improved within the concession area and general satisfaction with the level of service, even though the tariffs were increased.
- **Flexibility of the contract:** The contract allowed for essential revisions to be made, in light of changing circumstances. This made it possible to increase tariffs, renegotiate the rental fee, and down-size the investment program to correct for unrealistic growth projections in the initial agreement. The contract allowed rapid decision-making, something that is difficult for municipal government. Renegotiation of the agreement in 2001 was a major factor in making the concession successful, as it provided the opportunity for all to assess the situation realistically after SWC had the chance to operate the system for some time.
- **Demonstrated commitment to meeting the terms and spirit of the contract:** Despite problems that arose (i.e., the inability of the municipality to monitor the contract properly, the need to accommodate the free water requirement, and the impact of poor growth rate projections), both the concessionaire and the local government authorities have demonstrated commitment to the concession, even in the face of shifting local government structures. To its credit, the city council recognized the positive achievements made by SWC, the fact that the city government did not have the capacity to manage the system with its

own resources, and the substantial amount of time and resources that would be required to select a new service provider. Therefore, the city was willing to pursue renegotiation of the contract through the terms provided in the agreement.

- **The operator focused on community consultation and outreach:** Liaison with the consumer community has taken a variety of forms, including newsletters, flyers, and face-to-face discussions about specific issues. The operator acts on the belief that, if they can keep customers happy by providing professional services with accurate invoicing and prompt answers to questions and complaints, then customers will be satisfied. SWC monitors consumer complaints, generally responding more rapidly than the concession contract requires. SWC is obliged to submit a monthly customer service report that provides details of customer issues, such as new and closed accounts, disconnections, and number and types of complaints.

1.3.3 Sustainability of the Transformation

The Dolphin Coast Concession is now considered to be viable. Service provision is reliable. Customers are paying their bills, at least partly because SWC is willing to terminate service—something that most municipally run utilities have difficulty doing. SWC is covering all its costs and retaining some funds for investment. Both parties to the contract seem to be satisfied with SWC's performance. All indications are that SWC will not abandon the concession and they will complete the 30-year agreement under the renegotiated conditions of 2001.

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2.0 UGANDA: NATIONAL WATER AND SANITATION CORPORATION

2.1 INTRODUCTION

The National Water and Sanitation Corporation (NWSC) of Uganda was created by decree in 1972. Twenty-three years later, the NWSC Act of 1995 revised its objectives, powers, and structure to require, among other things, that NWSC's revenues be sufficient to cover all costs, including debt service, depreciation, and a return on investment. The act also gave NWSC a certain degree of autonomy, including the power to set tariffs but in practice tariff increases must be approved by the Minister of Water, Lands, and Environment (MWLE). As of July 2004, NWSC was providing water supply services to about 1.5 million people in 15 urban service areas throughout the country and operating the few sewerage systems that exist therein.

Between 1988 and 1998, bilateral and international development agencies financed substantial investments in rehabilitation and expansion of fixed assets, but some of the investments were ill-conceived and resulted in excess capacity. Part of the funds was on-lent to NWSC at near-market rates¹². Despite the legal reform, by 1998 NWSC's performance was unsatisfactory. Unaccounted for water (UfW) stood at 51 percent, and collection efficiency was only 60 percent. The corporation was severely overstaffed; only three of its service areas were able to meet their costs, and NWSC could no longer service the debt that resulted from its investment boom.

In late 2000, a comprehensive study of urban water supply and sanitation services identified the key challenges and sources of inefficiency in the services. That year, the government of Uganda (GOU) agreed to a three-year Performance Contract (PC1) with NWSC under which the latter's debt service obligations were suspended in return for a commitment to operational and financial improvements and an increase in coverage, reflecting GOU policy objectives. A second Performance Contract (PC2) was signed in 2003. PC2 allowed for the continued temporary suspension of debt service and specified that NWSC's debt would be restructured to a sustainable level. During the period of these contracts, NWSC management initiated a number of far-reaching internal reforms which have led to significant improvements. By 2004, the corporation had begun to generate an operating surplus. This case study focuses on improvements made during the 2000-2004 period.

2.2 DESCRIPTION OF THE TRANSFORMATION

2.2.1 Summary of the Transformation Process

In 1998, NWSC engaged a private firm, Gauff GmbH, under a service contract to improve billing and collections in the Kampala service area. (This area accounts for about 70 percent of the water produced by NWSC.) Although the project's objectives proved too ambitious and were not all achieved, it resulted in an improved billing system. Before the PC1 was signed in 2000, NWSC's management had begun a series of initiatives and training programs aimed at improving productivity and creating a more commercial and customer-oriented culture¹³. The international water operator, Ondo Services, was engaged to manage the Kampala service area from 2002 to 2004.

¹² US\$60 million was on-lent to NWSC by the GOU at 15 percent, and US\$1.8 million was on-lent at 10 percent.

¹³ NWSC staff was sensitized to the importance of providing high quality service that resulted in satisfied customers. Those coming into direct contact with clients were trained in customer relations. The importance of this concept in NWSC's reform is reflected in its corporate vision, with the phrase, "happy and satisfied customers, paying their bills promptly" topping the list.

In 2003, GOU adopted a strategy for the reform of the urban water services that called for:

- Continued public ownership of assets and the creation of an Asset Holding Authority for the larger urban areas;
- Establishment of an independent regulator; and
- Private sector participation in the delivery of services under management, lease, or concession contracts.

Although full implementation of this strategy has been delayed, NWSC has in the meantime adopted a number of internal management arrangements that mimic private operation. In late 2003, NWSC began to devolve operations by converting several of its service areas into profit and cost centers. Managers of NWSC's 14 service areas outside Kampala were selected through internal competition, in which NWSC staff bid a fee (intended to cover all operating costs except support services provided by the central office) for managing services in each service area. An internally delegated area management contract (IDAMC) was awarded to the lowest bidder for each area. The winning manager in turn formed an informal partnership with the area management team (the accounting officer, chief of operations, etc.), and the partnership assumed joint responsibility for implementing the contract. Each IDAMC specifies both minimum performance standards as well as higher level performance targets for parameters such as operating income, new connections, collection efficiency, and unaccounted for water. To earn the full amount of the basic monthly management fee, the partnership must achieve the minimum performance targets. In addition, both managers and staff can earn substantial incentive pay if the area's operating margin exceeds the agreed minimum¹⁴.

One of the lessons learned in earlier NWSC experiments with performance incentives was that managers lacked adequate autonomy to make the key decisions that affect productivity. To correct this, the IDAMCs allow managers a fairly high level of autonomy regarding staffing and the allocation of other resources.

The management contract with Ondeo, for operations in the distribution system for the Kampala area, was scheduled to expire in June 2004. Due to the cost of the contract, NWSC management decided to test its internal ability to manage its largest and most challenging service area. Upon termination of the Ondeo contract, an NWSC area manager was selected to manage the Kampala area under an IDAMC. By July 2004, IDAMCs were in place for all fifteen of the existing service areas.

The opportunity to earn bonus pay and the increased autonomy that enabled managers to adequately control resources have been the most important factors in NWSC's turnaround. The transparency and simplicity of the methods for calculating performance and incentive fees have been particularly critical. These methods provide three levels of allowed payments/retentions by the delegated management contractor. The first recovers a proportion of salaries and uncontrollable expenses, the second provides the remainder of cost recovery *if specific performance targets are met*, and the third provides a substantial bonus if operating income increases relative to a specific target.

Both staff and management have responded positively to the challenge, and the rewards have been substantial. In addition, top-level management's commitment to clear channels of communication and consultation with the lower levels of management and staff was credited by mid-level managers for contributing to the positive atmosphere among staff and management.

¹⁴ IDAMC contracts can be obtained by clicking the "Performance Improvement Programmes" button on the home page of NWSC's Web site (www.nwsc.co.ug).

2.2.2 Summary of Performance Improvements

Since June 2000, NWSC's performance has improved significantly. A summary of key performance parameters is provided in Table 2.1.

The most remarkable accomplishment has been the turnaround of NWSC's financial performance. Revenues have grown much faster than costs, and, in 2004, the company had a positive operating income, indicating that it could begin to pay some of its debt service. In addition, NWSC is now able to earn a modest return on equity (assuming that debt interest payments are forgiven).

To satisfy GOU's goal of providing safe water to 100 percent of the population by 2015 and improving capacity utilization of production facilities and existing mains, management has focused particular attention on making new connections, adding 40,000 of them in the last five years. Since the majority of potential new customers are poor, the connection fee was reduced and NWSC assumed responsibility for installing and maintaining water service lines for those customers within 50 meters of the supply line. The added costs for these measures were covered by an average tariff increase of 10 percent¹⁵.

NWSC's average tariff is considered adequate to cover the cost of *efficient* services. Given the company's obvious inefficiencies, an increase in the average tariff was not deemed justifiable as a means of improving financial performance. Except for the 10 percent adjustment mentioned above, the average tariff has been annually increased only to reflect inflation and changes in the exchange rate. In an effort to retain its valuable industrial customers and rationalize tariffs, NWSC has applied all of the increase to the domestic and institutional/government tariffs. (These are nevertheless still considerably lower than the industrial tariffs.)

Instead, the reform effort has focused on improving efficiency and productivity. As part of the effort to improve collection efficiency, an emphasis has been placed on customer relations. The corporation adopted as its mission "to be a customer-oriented organization, providing excellent water and sewerage services in a cost-effective manner." Targets for customer relations functions have led to improvements. The time required to respond to inquiries, complaints, and leak reports has been shortened, and new connections are made within 24 to 48 hours of the request. Computerization of the billing process has increased accuracy. The reliability and continuity of service has improved in all the service areas, particularly in smaller urban centers. Perhaps most importantly, both management and staff have embraced a customer-oriented culture. Staff has been trained in customer relations, and the incentive system has led to recognition of the importance of good customer relations.

¹⁵ Like the annual inflation adjustments, this average increase did not affect the tariffs of the large industrial users.

TABLE 2.1. OBSERVED PERFORMANCE CHANGES^a

Performance Indicator	Pre-Transformation (2000)	Post-Transformation (2004)
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	In 2000, industrial tariffs were 2.3 times as high as residential tariffs, and NWSC was in danger of losing its largest customers.	In 2002, a strategy to reduce industrial tariffs gradually while increasing domestic and institutional tariffs was introduced. By 2004, the ratio of industrial to residential tariffs was reduced to 1:6.
Affordability of service, especially to the poor	High connection costs were a barrier. The domestic tariff is affordable for the majority of the poor.	Connection costs have been reduced significantly to about 1/3 the former level. Despite moderate annual increases, the domestic tariff continues to be affordable.
Quality of customer relations	In initial stages	Comprehensive improvements in customer relations have been implemented.
% of population of the service area served	30	63 (in an expanded service area)
Number of connections (thousands)	59.0	100.5
Compliance with Applicable Government Policies and Standards:		
Potable water standards compliance	NA	According to NWSC, 99-100% of samples meet biological and chemical standards. There is no independent enforcement by other government agencies.
Environmental compliance	Not available, but only about 5% of users were connected to sewerage.	According to NWSC, 99%-100% of wastewater samples meet the effluent standards. However, this is insignificant because only about 8% of users are connected to sewerage.
Technical Capacity:		
Metered connections (%)	82	97
Direct sewerage coverage (%)	5	8
Unaccounted for water (%)	42.5	37.6
Management:		
Employees per 1000 connections	24	10
Implementation of transparent management/administrative structure and policies	In initial stages	Fully implemented
Implementation of performance benchmarking/performance incentives	None	Fully implemented
Labor relations	The staff were reportedly fearful about their future.	Effective channels of top-down and bottom-up communication appear to have been created.
Financial:		
Annual revenue (billions of Uganda shillings [UGS])	23.7	40.9
Annual operating costs (billions of UGS)	29.9	39.0
Annual operating expenses/annual operating revenues (%)	126.2	95.3
Return on equity (%)	-11.2	3.3
Operating profit before interest, taxes, and depreciation (billions of Uganda shillings)	3.0	12.4
Billing ratio (%)	57.5	62.4
Collection ratio (%)	76	101
Implementation of multiyear financial forecasting	In initial stages	Corporate Plan 2003–2006 includes financial projections.

^a Currency exchange rates: 1 US Dollar = 1510.0 Uganda Shillings (1/1/00); 1 US Dollar = 1937.0 Uganda Shillings (1/1/04). Source: FX Converter, <http://www.oanda.com>.

The most challenging technical efficiency problem that NWSC continues to face is the high level of UfW, particularly in Kampala. The average UfW for NWSC as a whole is 37.6 percent. This number is determined primarily by Kampala's UfW of 39 percent, which, though down from 46 percent in 2000, is still much too high. In the other service areas, the average UfW is 27 percent. The modest improvement in Kampala has mainly been a result of more effective metering and billing, and further improvements are expected as a result of the ongoing rehabilitation of the network. However, this will take several more years to complete.

The number of staff has been reduced from 24 to 10 per one thousand connections. This is within the range of best practice for the African region¹⁶. The dramatic improvement in productivity was brought about through the expansion of connections, a staff reduction program that included attractive voluntary early

¹⁶ According to World Bank sector specialists, "good practice" in Africa is about 8 employees per 1000 connections.

retirement benefits funded by the GOU, targeted training programs, excellent internal communications, and the institution of transparent performance monitoring and incentives.

2.2.3 Governance

In 2000, NWSC's Board of Directors was restructured, and new members were appointed with the objective of creating a more independent and representative body with the appropriate mix of technical and commercial skills necessary to guide NWSC through a transformation. In addition to the Ministers of Finance and Water, and a director of one of the health units in the Ministry of Health, the board now includes a representative of the Kampala City Council, the local governments of the other towns served by NWSC, the business community, and other consumers. While there had been little distinction in the past between the role of the political authorities and that of the board and between the role of the board and that of management, the new board operates relatively free of political interference and separately from management. The relationship between the board and the managing director (MD) has been defined by a clear delineation of roles and a mutual commitment to performance improvement. This has promoted more autonomous day-to-day decision making and support for the MD's management initiatives (such as staff reductions and the institution of the IDAMCs). Under the terms of PC2, the board is required to develop and implement more transparent and effective procedures for regular monitoring and reporting by management to the board, and by the board to GOU.

Nevertheless, as a state enterprise, NWSC is still subject to political oversight and decisions that are not necessarily based on technical and financial criteria. For example, several new service areas composed of very small towns (where services are more costly to operate) have recently been transferred to NWSC. Plans exist for more transfers in the future. Such additions will eventually result in a negative impact on NWSC's financial viability unless the uniform national tariff policy is revisited and a more effective subsidy policy is adopted.

2.2.4 Regulatory/Oversight Framework

There is very little regulation of NWSC's services outside the oversight provided by its own board. The Department of Water Development (DWD) of MWLE is charged with overseeing all urban and rural water and sanitation services, but, in practice, its resources have been focused on the smaller towns where NWSC does not provide services. Technical capacity in these towns is weak and, as a result, DWD's interventions have tended to be more supportive than regulatory in nature. Under DWD's tutelage, responsibility for services is being devolved to local water authorities in the small towns. In 57 towns, small local private operators have been engaged to manage and operate services. DWD is now in the process of restructuring its role and reviewing regulatory options, with an eye to creating a more coherent regulatory framework for all urban water and sanitation services, whether provided by local water boards, private contractors, or NWSC.

One of the most important regulatory issues that the sector faces is the need for rational tariff and subsidy policies and explicit rules for setting tariffs. As mentioned earlier, NWSC charges uniform tariffs in its service areas. While its average tariff is considered adequate to cover the full cost of *efficient* services, as more small urban areas are transferred to NWSC, this may no longer be the case. NWSC management, under the supervision of its board, has the authority to implement automatic annual inflation adjustments. It has also been allowed to distribute the value of this adjustment among the customer classes so as to gradually rationalize tariffs and decrease the discrepancy between industrial tariffs and domestic/institutional tariffs. The effect of this policy is that industrial tariffs have fallen in real terms while domestic and institutional tariffs have increased by more than inflation. Domestic tariffs are nevertheless still quite low and affordable.

There is also a uniform tariff for services provided in small towns under DWD's tutelage. Although this tariff in the small towns is about 40 percent higher than NWSC's tariff, it is inadequate to cover all operating and maintenance costs in some locations, and, services must be subsidized by the GOU in those cases. This

situation creates a perverse incentive for small towns to request transfer to NWSC because of its lower tariff. In recent years, such transfers have been authorized by the Minister of MWLE without regard to any explicit financial and technical criteria. Despite the transitional subsidies that the GOU provides NWSC in these cases, the addition of small towns is sure to have a negative impact on NWSC's financial performance. Eventually, increases in tariffs are likely to become necessary, and the uniform tariff policy may need to be reconsidered.

2.2.5 Capital Finance

NWSC has not incurred new debt since 1995. Since then, equity contributions from GOU and grants from Germany and the European Union (EU) have been used to fund expansion of water supply in small towns, rehabilitation work in Kampala, and investment in wastewater treatment. Donors have also provided technical assistance to support the restructuring process. The amounts and sources of grants are shown in Table 2.2.

Source	Year	Value (US\$ 000)
KfW (Germany)	1997	13,509
GOU	1997	2,963
GOU	2004	535
KfW (Germany)	2001	3,796
EU	2002	1,544
EU	2003	2,150
KfW (Germany)	2003	12,349
TOTAL		36,848

2.3 ANALYSIS OF THE TRANSFORMATION

2.3.1 Success

As the financial data show, NWSC is moving in the direction of financial viability. The GOU is now considering options for restructuring long-term debt, and it is expected that NWSC will assume responsibility for only a small part of that debt (i.e., 10 to 20 percent). Resolution of the debt problem and continued improvement in its performance would enable NWSC to generate internal funds and attract government-guaranteed external finance for investments, thus establishing itself as a viable public company.

2.3.2 Key Features of the Transformation Process

The following factors have contributed to the success of NWSC's transformation:

- **Adjustments in the governance framework:** Board of Director 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 GOU.

- **Debt relief:** NWSC's debt service obligations have been suspended since 2000. The GOU is now considering options for debt restructuring, including the write-off or conversion to equity of a significant part of the debt.
- **An innovative and energetic Managing Director:** By all accounts, the MD is a remarkable individual who is both committed to the transformation and has the personal qualities necessary to lead his management team and staff through the transformation process. He has studied the restructuring methods and experiences of top corporations and adapted them to NWSC's context, placing emphasis on clear communications, change management concepts, and the creation of performance incentives.
- **Benchmarking of selected metrics:** Targets for improvement in key metrics, such as UfW, staff per 1000 connections, collection efficiency, and financial indicators were established with the aim of bringing performance closer to regional and international best practice. Significant improvements have been achieved in the staffing ratio, collection efficiency, and other financial indicators, while UfW remains a challenge.
- **Introduction of performance targets and incentives for management and staff:** Interim targets were set in light of current performance and a realistic assessment of what could be achieved within the timeframe, given the available resources. The clear specification and monitoring of these targets have resulted in the creation of an effective management information system, and the introduction of monthly incentive payments for achievement has motivated both management and staff to achieve (and often exceed) the targets.
- **Creation of a customer-oriented culture:** 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. Management also emphasized good customer relations in its training programs and in the creation of new management information systems. As a result, indicators of customer relations have improved, and a customer-oriented culture prevails.
- **Creation of effective billing and collection systems:** NWSC's most serious challenge prior to the transformation was its inability to generate adequate revenues. Improvement in revenue generation required a multi-faceted strategy that included regularization of illegal connections, calibration or replacement of defective meters, installation of meters where none existed, computerization of billing, rehabilitation of Kampala's network, and more effective monitoring and motivation of field staff. While reduction of UfW is still a major challenge that will be overcome only after further rehabilitation of Kampala's deteriorated distribution system, progress on all the other components of the strategy has generated substantial improvements. Moreover, the institutionalization of adequate maintenance practices in newer systems is ensuring that water losses will not become a serious problem elsewhere.
- **Computerization of management information and performance monitoring:** PC1 and PC2 introduced targets and regular monitoring and reporting of performance. This created a requirement for systems to gather, analyze, and report data in manageable formats. NWSC management has introduced a computer network and reporting procedures that enables it to regularly collect and analyze performance information from all its service areas. As required by PC2, a dedicated monitoring and evaluation unit within NWSC was created.
- **Donor coordination:** The support of external donors, whose coordinated efforts and strict discipline in assistance allocation has contributed to NWSC's successful transformation. As the lead donor, Germany has provided technical assistance to support the reform effort within MWLE 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. Once a year, the government and development partners conduct a joint

annual review of the water supply and sanitation sector to review progress, agree on an action plan, and coordinate interventions.

2.3.3 Sustainability of the Transformation

The expansion of service to new customers has improved capacity utilization and enables NWSC to capture economies of scale. However, since most of the under-served public is poor, new customers in both existing and recently transferred service areas tend to be from low-income households. These households consume low volumes of water and pay a domestic tariff that, despite gradual increases, does not fully cover costs. In addition, services to the new towns are more costly to operate due to smaller size. The overall effect is that NWSC's average revenue is falling.

NWSC has been able to absorb these costs because of decreasing costs in other areas and transitional subsidies from the GOU for the newly transferred towns. In the longer term, the GOU and NWSC must evaluate the sustainability of a uniform tariff and consider the adoption of more rational and targeted mechanisms to subsidize basic services for low-income households. Finally, technical and financial criteria for the transfer of small towns to NWSC should be adopted.

While the gains that have been registered over the last four years are impressive, they must be sustained. Typically, improvements in efficiency are easier to achieve in initial restructuring phases than in subsequent ones, so results are likely to level off. Yet further improvements are needed. The creation of a more effective regulatory framework will help to ensure that the short-term gains in efficiency are sustained and further improvements are pursued. NWSC management is also considering options for private operation of services that would promote further performance improvements.

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3.0 EGYPT: ALEXANDRIA WATER COMPANY

3.1 INTRODUCTION

The Alexandria Water Company (AWCO) was originally founded in 1860 as a private company and it operated as such for more than 100 years before it was nationalized, becoming the Alexandria Water General Authority (AWGA). During this period, AWGA was organizationally placed in the Governate of Alexandria (a regional entity). Management of water and wastewater utilities was changed in April 2004, with Presidential Decrees 135 and 136. Decree 135 authorized the transformation of fourteen major Egyptian utilities into subsidiaries of a public sector holding company for water and wastewater. Decree 136 established the Egyptian Water and Wastewater Regulatory Authority (EWRA) as the regulatory entity for the sector.

Decree 135 essentially “corporatized” AWGA by making it one of the fourteen subsidiary utilities of the public sector holding company. This holding company, housed in Cairo as a public entity, is run by an eleven-member board of directors. It has no stockholders. Through Decree 135, AWGA became one of the fourteen subsidiaries (with its own board of directors) of the public sector holding company and reverted to its original name (AWCO).

Alexandria’s water utility has always been regarded as one of the better performing utilities in Egypt. However, in 1999, the utility lacked many of the features and systems that are the norm for utilities in the developed world. Computers, formal employee training programs and communications structure between management levels, and planning systems were nonexistent. Administrative systems and inventory management were sub-standard. System performance, though good by Egyptian standards, was not optimal. Sufficient water of acceptable quality was provided, but many customers were dissatisfied with service, unaccounted for water was high, the overall cost of water provision was not being recovered through tariffs (the AWCO tariff covered operations and management, but did not fully address depreciation expenses¹⁷), and antiquated infrastructure was exhibiting high failure rates.

USAID, understanding that the organization and the infrastructure were basically sound, technical issues were being sufficiently addressed, and water quality maintained, saw the opportunity to help AWGA make the institutional and infrastructure improvements needed to help it to become a world class utility. In 1999, USAID began the six-year Institutional Strengthening Contract (ISC) to work in close partnership with Alexandria utility directors, managers, staff, and customers to seek improvement in selected areas of utility service provision and management.

The challenge of improving the water utility has itself been daunting. The system covers an area that is approximately 340 kilometers (km) from east to west and 125 km, north to south. Eight water treatment plants collectively supply 3.5 million cubic meters of drinking water per day. This water is conveyed to Alexandria’s 4.5 million inhabitants (6 million during the summer tourist season) through almost 6,500 kms of pipe, with 43 booster pump stations and 33 storage reservoirs.

The recent corporatization of AWGA to AWCO is just the latest step in what has been a methodical transformation from a utility that was “getting by” to a utility that is now focusing on customer service, planning for the future, and actively working to become financially self-sufficient. AWCO is currently generating revenue sufficient to cover all operating and maintenance costs, all depreciation costs, debt service on its current loan from the National Investment Bank, and a portion of the loan’s principal. Investments are being made in upgrading the infrastructure, and 15,000 new connections are installed each year.

¹⁷ In generally accepted accounting procedures (GAAP), under the accrual basis, depreciation expense (a non-cash item) is included as an operating expense.

3.2 DESCRIPTION OF THE TRANSFORMATION

3.2.1 Summary of the Transformation Process

AWGA and the ISC project began working together in 1999 with a six-month baseline institutional assessment. Since then they have produced action plans which have guided implementation on priority infrastructure and institutional activities. Shared action planning has been at the core of the ISC project and has led to implementation of 69 high priority programs.

The corporatization—the legal transition of AWGA to the public business sector company, AWCO—permits operation under new rules, accelerating the pace of reforms. The following conditions exist under the new organizational arrangements.

- AWCO is no longer subject to the civil service regulations that govern most Egyptian agencies with respect to employee hiring, salaries, and retirement. AWCO has more flexibility in managing its staff on merit-based criteria (as opposed to seniority-based), can pay higher salaries for certain employee categories, and has more flexibility in hiring, firing, and managing its employees.
- Outsourcing maintenance and other services can now take place, relieving AWCO of the need to carry excessive staff, facilities, and equipment. AWCO is actively analyzing such outsourcing opportunities.
- The holding company, of which AWCO is a subsidiary, permits the company to retain control of revenues and make investment decisions on any cash surpluses that might be generated.

The ISC project approach to institutional transformation, based on competitiveness, change management, and business process improvement, complements these organizational arrangements. Communication and coordination have been at the core of the ISC approach. The project used several important communication strategies to not only keep AWCO and ISC staff on the same page, but to promote an AWCO corporate culture that values transparency, decentralized decision-making, and open communication. These communication and coordination strategies included:

- A team structure for ISC and AWCO;
- Mobilization of topic-specific assessment teams;
- Quarterly meetings with GTZ, the Dutch projects, and other contractors working for AWCO;
- Weekly prescheduled meetings between the AWCO chairperson and the ISC project director;
- Extensive and active participation of AWCO personnel in activity design and implementation;
- The formation of a project steering committee that meets monthly;
- Frequent coordination meetings with USAID;
- Briefings to other institutional stakeholders;
- A comprehensive customer outreach program, with information and education campaigns; and
- Incorporating a culture of communication through personal contact (e.g., meetings with PowerPoint presentations), as opposed to communication via formal written communications and reports.

Strong, open communication and decentralized decision-making aside, the ISC was faced with an issue not uncommon to projects working with large organizations to bring about institutional change: buy-in and active participation in work plan implementation. The signing, in 2002, of an official Memorandum of Understanding (MOU) between AWCO and USAID formalized goals and responsibilities agreed upon by all,

resulted in a more active leadership role taken by AWCO in the programs over which it will assume control. The MOU laid out shared goals and an implementation schedule in three policy reform areas, identifying the sixteen benchmarks that AWCO must achieve. The release of grant money for AWCO construction projects is contingent upon AWCO complying with the MOU terms. These terms include a requirement that AWCO contribute one-fifth of the total value of funds received from USAID by providing either services in kind or cash toward procuring commodities and services (120 million Egyptian pounds [EGP] over ten years).

The six-year transformation activity began by forming a steering committee and assessment teams. After the 1999 six-month assessment phase, ISC and AWCO selected eleven program areas where strategic planning was absolutely necessary¹⁸. This work led to the selection of infrastructure improvement objectives and 69 (out of a possible 140) priority institutional strengthening activities that formed the core of the ISC and AWCO collaboration and has driven the AWCO institutional transformation. Activities included:

1. **Finance and Revenue:** automated billing and financial reports, willingness to pay studies, collection system, and debt management;
2. **Technical:** planning and tracking system, complete assessment and revaluation of all fixed assets, computer models, laboratories upgrades, meter installation, and treatment plant upgrades;
3. **Administration/Management:** management information systems, reorganizing existing management units, forming new units, and training;
4. **Human Resources:** training centers, job descriptions, personnel regulations, and performance evaluations;
5. **Strategic Planning:** institutionalized strategic planning and training;
6. **Dispute Resolution:** dispute resolution office and strategy to address and resolve disputes;
7. **Legal:** internal by-laws, new legal management units, and the reorganization of the board of directors;
8. **Public Relations:** increased size of the department, customer service training policies, and public relations campaigns;
9. **Customer Relations:** increased size of the department, customer call centers, and customer focus programs; and
10. **Computerization:** automation of systems, technical support unit, and upgraded technology.

An important feature of the transformation process has been a focus on addressing expressed customer needs and ensuring that the investments in system improvements that are made have high visibility and promote customer satisfaction and confidence in AWCO. For example, three major pipelines were replaced in Alexandria's poorest neighborhoods. This activity was accompanied by a media campaign that emphasized the improvements being made to increase water pressure and eliminate water quality problems due to the poor condition of the previous pipes.

The corporatization has created new opportunities to improve management, performance, and service. AWCO is actively pursuing options to contract out utility functions to the private sector and has received technical assistance from USAID to help make decisions on how to pursue and structure these relationships. Further reorganization of the labor force is also taking place. The easing of civil service regulations allows AWCO to improve efficiencies, offer incentives and higher salaries to attract talent, and motivate performance.

¹⁸ Operations and maintenance, finance and revenue, water production, water distribution, water treatment and quality, public and customer relations, human resources, management and management information system, information technology, legal, and dispute resolution.

3.2.2 Summary of Performance Improvement

Driven by performance and customer service benchmarks agreed upon in the MOU with USAID, AWCO has been able to improve technical and financial performance in a significant number of measurable ways. AWCO's financial and capacity is now strong enough to attract coordination from other bilateral donors. Table 3.1 summarizes changes in a number of key financial, management, and performance categories since the ISC and AWCO began implementing their action plans.

Over the last five years, service coverage has increased from 80 to 92 percent, and the demands of a growing population for new connections are being met with 15,000 new connections a year. Unaccounted for water has decreased by 300,000 cubic meters per day. Full compliance with water quality requirements has reportedly been achieved.

The billing system is more successful at both collecting and negotiating payment from customers facing difficulty even though there has been a tariff increase for most users. AWCO's bottom line is healthier, with revenues up 22 percent as utility operating costs per unit of delivered water have dropped by 24 percent. AWCO is the only water utility in Egypt currently generating revenue sufficient to cover all operation and maintenance costs, debt service on the current loan from the National Investment Bank, and a portion of the loan's principal. AWCO is currently paying 40 million EGP per year on its outstanding loan with the National Investment Bank and has paid the loan down to 275 million EGP (from EGP 440 million). AWCO also brings in significant revenue for wastewater treatment service tariffs collected for the Alexandria General Organization for Sanitary Drainage (AGOSD), retaining approximately 7 percent of the totals¹⁹.

Because of the autonomy provided by the new public sector company organization, AWCO will be able to guide the investment of the surplus revenues that it generates. In-house financial trend ratio analysis has been implemented for four years, helping AWCO to make investment decisions.

AWCO has succeeded in completely registering its fixed assets and has a real-time system for updating the information. Investments in infrastructure upgrades include the installation of new water mains, new meters, automated meter reading technologies, and improvements made to treatment plants. These upgrades increase efficiencies in water provision and build customer confidence.

Changes in human resource management systems are helping to improve utility performance. Each employee is given a monthly monetary incentive for exceeding pre-determined levels of performance. For example, field inspectors get five EGP for each illegal connection that they discover. Also, meter readers and collectors receive the highest employee incentives possible for exceeding assigned monthly targets (30 percent). There are also consequences for not meeting targets. The incentive amount is a flat percentage of the base salary and varies according to department.

Although AWCO has succeeded in making significant improvements over the last five years, certain performance targets remain unmet. The most significant unmet target is to increase water tariffs to more closely match the calculated cost of producing drinking water. Water tariffs are a highly politicized issue, and tariff increases are delicate propositions. Although AWCO may propose tariff changes, the public sector holding company and the EWRA must approve them. The GAAP-derived average cost per unit of water at 1.20 EGP per cubic meter is significantly higher than the calculated base price of .73 EGP per cubic meter (7.3 EGP for the first 10 cubic meters used by a household) and the cost of additional water used by a household above the first 10 cubic meters (0.3 EGP per cubic meter).

¹⁹ Note that AGOSD and AWCO are completely separate entities. AWCO collects wastewater service payments on behalf of AGOSD.

TABLE 3.1. OBSERVED PERFORMANCE CHANGES^a

Performance Indicator	Pre-Transformation (2000)	Post-Transformation (2004)
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	Limited focus on large industrial customer base and small urban poor population	Focus on replacement of substandard size mains to better serve these groups
Affordability of service, especially to the poor	Inclining block tariff structure with very high minimum allowance, permitted upper and middle class to pay same tariff that was charged to urban poor	Inclining block tariff structure; first block priced to favor poor and fixed income population
Quality of customer relations	60% customer satisfaction (moderate)	New highly focused customer service strategy: 82% customer satisfaction
% of population served	80	92
Number of connections	925,000	1,000,000
Compliance with Applicable Government Policies and Standards:		
Potable water standards compliance	90% compliance with Egyptian standards	80% compliance with World Health Organization standards, 100% compliance with Egyptian standards
Environmental compliance	90% compliance with Egyptian standards	100% compliance with Egyptian standards
Technical Capacity:		
General infrastructure condition	Fair condition, although substantial maintenance required	1000 km of pipes replaced; ongoing preventive maintenance at water treatment plants
24-hour water availability (% per year)	100	100
Metered connections (%)	95	97
Direct sewerage coverage (%) – Alexandria General Organization for Sanitary Drainage	55	63
Unaccounted for water (%)	38	30
Reliability/adequacy of water supply sources	Adequate, but in need of monitoring water quality and protection	Central laboratory implemented sanitary surveys, source protection, frequent sampling, and water quality analyses
Management:		
Employees per 1000 connections	4.9	4.0
Implementation of transparent management/administrative structure and policies	Chairperson's approval needed before disclosure of info (limited)	Chairperson has delegated authority to 4 vice chairs
Implementation of performance benchmarking/performance incentives	Limited performance benchmarking for water production and quality; no employee incentive systems	Comprehensive performance benchmarking system employed, comprehensive monetary incentive programs for employees
Financial:		
Annual revenue from water tariffs (EGP)	192,516,450	235,555,610
Annual operating costs (EGP)	120,126,222	157,321,805
Annual operating expenses/ annual operating revenues (%)	62.4	66.8
Earnings before interest, taxes, and depreciation (EGP)	72,390,228	78,233,805
Billing ratio (%)	100	100
Collection ratio (%)	58.7	81.4
Implementation of multiyear financial forecasting	No financial planning	A capital planning and tariff impact model has been developed; financial projections are now made for a ten year period
Ability to mobilize private capital	None	The water sector reform of 2004 permits AWCO to seek commercial financing in the local market. Overall improvements to AWCO infrastructure management make it more attractive to capital markets.

^a Currency exchange rates: 1 US Dollar = 3.42 Egyptian Pounds (1/1/00); 1 US Dollar = 6.23 Egyptian Pounds (1/1/04). Source: FX Converter, <http://www.oanda.com>.

Unaccounted for water (non-revenue water), although being reduced, is still high at one million cubic meters per day. AWCO is also challenged with lowering the number of employees from 4 to 3 per 1,000 connections. Through attrition, AWCO has reduced their workforce from 4,500 to 4,000. They have been able to offset this staff reduction through the performance measures discussed above as well as an increase in the use of automation.

3.2.3 Governance

Presidential Decrees 135 and 136 radically altered the governance systems that had controlled AWGA operations for over 30 years. Decree 136 created the public sector holding company for Egypt's major water and wastewater utilities, as well as the regulatory authority for the sector, the EWRA. AWCO's transition from an organization (AWGA) that was managed with some local control (by the Governorate of Alexandria)

to a subsidiary of a centralized public sector holding company with a board of directors in Cairo is somewhat counter to the international trend of moving utility management from national ministries and agencies to municipal entities. The public sector holding company that includes AWCO as one of its 14 subsidiaries is located in Cairo. However, its status as a public sector company creates a legal standing for AWCO that provides it with more autonomy to make local management decisions and opens up additional management options.

AWCO does not have complete operational independence. The eleven-member board of directors of the public sector holding company exercises final control over AWCO and, along with the regulatory agency EWRA, gives final approval on tariff increases, organizational restructuring, and infrastructure investments. AWCO supports the holding company with 10 percent of its collected revenues, but the rest of its collections remain in AWCO and cannot be accessed by the holding company or the other subsidiaries.

AWCO has its own board of directors. The nine members consist of five people elected from AWCO, one of whom must be the chairperson, two people appointed by the Governorate of Alexandria, and two appointed by the holding company. It is also worth noting that most of the current AWCO management migrated from AWGA, permitting a relatively smooth organizational transition. AWCO's eight top managers, including the chief executive officer, are all women.

3.2.4 Regulatory/Oversight Framework

Decree 136 created the holding company and the new water regulatory authority, EWRA. The holding company has its own building in Cairo, but the EWRA is located within the Ministry of Housing and New Urban Communities. The decree delineates the powers of these new entities to regulate the water and wastewater sector and oversee the operations of the 14 subsidiary utilities of the holding company. EWRA regulates all aspects of the holding company and has formal responsibility for utility performance monitoring and tariff rate analysis and approval. Other Government of Egypt (GOE) ministries maintain regulatory authority over AWCO's activities, in specific sectors. The Ministry of Health regulates AWCO's water quality to protect the safety and health of the customers. The Ministry of Water Resources and Irrigation regulates the quantity of water which is diverted from the Nile River by AWCO. The Egyptian Environmental Affairs Administration regulates AWCO's water treatment plant residual discharges to the sewer systems and drains, as well as compliance with other environmental laws. Prior to the decree, no fewer than ten national government entities played a role in the regulation of the water and wastewater utilities.

3.2.5 Capital Finance

AWCO is a subsidiary of a public sector holding company and is, therefore, an entity owned wholly by the government. The purpose of the holding company's formation was to provide the affiliated water and wastewater utilities with autonomy from the government and allow them to manage their own revenues without the danger of government interference in utility finances. As a government entity, AWCO relies on seven principle sources of income:

1. Revenues collected from customers;
2. New service connection fees;
3. Seven percent of all revenues that are collected on behalf of AGOSD;
4. Consultant fees for services provided to other water utilities;
5. Loans from the National Investment Bank (AWCO can also take out loans from other commercial banks);
6. Revenues received from rental of facilities in the training center; and

7. Grants for commodity purchase and construction received from cooperating bilateral donors (most of which comes from USAID with a 20 percent counterpart contribution requirement).

AWCO is not currently targeting private capital but is building its institutional soundness and credibility to attract technical assistance from other donor governments. As a government entity (albeit a semi-autonomous one), AWCO will continue to focus on obtaining international donor grant funds and loans from the National Investment Bank to cover future capital. At this stage, AWCO, unlike many other water utilities around the world, has no need to access private capital markets.

3.3 ANALYSIS OF THE TRANSFORMATION

3.3.1 Success

To date, AWCO is considered to be Egypt's leading water utility. The transformation activity that began in 1999 must be considered a success. The six years of the ISC project and AWCO collaboration has been described by the shared vision statement, "We strive together to build capacity to achieve world-class performance through a program of permanent continuous improvement."²⁰ AWCO officially accepts its role as a regional leader, and it is proactive in supporting the efforts of other utilities in the region to improve their performance.

3.3.2 Key Elements of the Transformation Process

The following is a summary of elements critical to the success of the transformation. They are presented in three categories:

1. Elements related to the collaboration between USAID's ISC project and AWCO;
2. Elements external to the USAID/AWCO collaboration; and
3. Elements which are necessary for AWCO to succeed after USAID's institutional support ends.

Elements related to the collaboration between USAID's ISC project and AWCO:

Support to AWCO by the ISC project was critical to the transformation. A number of features of this collaboration were especially important.

- **Attention to effective systems for communication:** Systems for communication and coordination between the ISC project and AWCO and other important stakeholders were developed and executed throughout the collaboration. These helped to promote an effective corporate culture as well as having positive impacts on smooth implementation of activities.
- **Focus on competition and change management:** ISC worked with AWCO managers and workers to take on the challenge of managing the utility as a profit-making business, not as a government institution.
- **Strategic planning focused on business oriented results:** Strategic planning teams in 11 program areas have developed and now maintain action plans that focus on customer service and high levels of performance.
- **AWCO access to technical assistance and grants:** AWCO was able to make sizable infrastructure and system improvements through capital investments and the provision of technical assistance that were not

²⁰ From ISC Project documents, as related by Mr. Rick Albani, Chief of Party, ISC.

officially on AWCO's books. Obtaining grant resources was also an important institutional motivation to move forward with institutional development activities.

Elements external to the USAID/AWCO collaboration:

Elements that were external to the collaboration are largely related to the legal and regulatory changes brought about by the Presidential Decrees 135 and 136 in April 2004. The decrees changed an entity that was a municipal utility run by the Governorate of Alexandria into a subsidiary of a public sector holding company located in Cairo. The decrees also simplified the governance and regulatory responsibilities for the sector.

- **An improved and simplified regulatory environment:** The public sector holding company and the new EWRA provide most of the regulatory oversight to AWCO and the other subsidiary public companies.
- **Greater utility autonomy in managing investment activities:** AWCO, although approval is required from the holding company and EWRA, has much more latitude in directing investment of its excess revenues into infrastructure or institutional improvements.
- **Authority to restructure organization and make staffing decisions:** The autonomy brought about by the presidential decrees permit AWCO to make organizational decisions that impact staffing as well as allowing AWCO to operate independently of the government civil service regulations that contribute to labor force entrenchment.
- **AWCO's debt is denominated in local currency:** AWCO, as a public company, receives loan financing from the GOE through the National Investment Bank. (AWCO is able to obtain financing from commercial banks as well, but to date, it has not done so.) There is no foreign currency debt on the books.
- **Operational flexibility:** AWCO's autonomy allows it the flexibility to plan and act on its own needs and those of the customers without government bureaucratic processes that had previously slowed response times significantly.

Elements which are necessary for AWCO to succeed after USAID's institutional support ends:

Elements necessary for continued success include reforms made by AWCO to promote a business-oriented culture throughout the organization, listed below.

- **Focus on public outreach and customer relations:** Departments for customer service and public outreach were enlarged. Specific efforts were made to ensure that the public understood AWCO's actions and the performance improvements it was seeking.
- **Worker incentive programs have been initiated to boost performance:** The fact that revenue collection has increased, unaccounted for water is being found, and administrative efficiency has improved is largely the result of performance incentive programs for bill collectors, field operation crews, and utility administrators.
- **Improved use of technology:** Improved and expanded use of information technology and automation enabled AWCO to improve performance while it was reducing its staff size.
- **A fair labor transition process:** Downsizing from 4,500 to 4,000 employees over a period of five years was relatively painless and performed through attrition. This process continues.
- **Focus on customer satisfaction, high quality service, and performance.** AWCO's management philosophy is guided by its vision statement: "AWCO is a dynamic organization whose primary purposes

are to increase the level of service to customers, set tariffs to generate sufficient revenue to make a profit, rationalize losses, use the latest technologies in equipment, and achieve world-class performance.”

- **Focus on creating policies to permit tariff increase:** AWCO has strategic plans for 11 key sectors. Several of these strategic plans address steps required to recover the calculated incremental cost of producing drinking water, establishing inflation adjustment, creating procedures for raising tariffs should extraordinary events occur, and rebasing periodic rate are critical issues.

3.3.3 Sustainability of the Transformation

The transformation of AWCO, through its collaboration with USAID’s ISC project and supported by the sector reform brought about by Presidential Decrees 135 and 136, has put it on the path to sustainability. According to ISC managers, the performance improvements experienced in recent years have improved the utility’s attractiveness to bilateral donors that can provide capital and technical assistance. AWCO is legally able to take advantage of public and private sector resources. Most importantly, it is managing internal systems in a way that can continue to enhance financial and service performance. However, a number of challenges remain which must be addressed to assure that the transformation remains on course.

The most significant challenge is that AWCO will need to continue large infrastructure upgrades without access to large capital grants from external donors. With access to such grants coming to an end, it is all the more urgent to address the issues that continue to affect AWCO’s bottom line. AWCO’s ability to access private capital markets remains largely untested.

Further, AWCO must ensure a stable water supply. Drought and demands for water by other users will impact AWCO’s ability to meet increasing domestic demand. AWCO must stay abreast of supply issues and must continue its work to reduce the one million cubic meters per day of unaccounted for water.

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4.0 INDIA: MUNICIPALITY OF ALANDUR UNDERGROUND SEWERAGE PROJECT

4.1 INTRODUCTION

The Municipality of Alandur, in the State of Tamil Nadu, India, is located adjacent to the City of Chennai and is part of the Chennai Metropolitan Development area. With a population of about 165,000, the municipality can be characterized as a residential suburb of Chennai with primarily residential and commercial economic activities. The municipality's water and sewer system is managed by a department within the city government, and it is not an autonomous body.

Prior to 1996, the city did not have an underground sewer system, and all sewage was managed with individual septic tanks. The largely unregulated disposal of sewage in storm water drains was an environmental and health concern with local residents and was frequently raised as a political issue. Around 98 percent of the 19,800 households used septic tanks or holding tanks for sewage, collected periodically by tankers. This situation was typical for cities in Tamil Nadu, as evidenced by the fact that, at that time, less than 20 percent of the population in the state's cities was connected to sanitary sewers.

In 1996, Mr. R.S. Bharati, the city chairman, announced an ambitious proposal to construct an underground sewage system and wastewater treatment facility, with the participation of the private sector and payment to be provided by the city. The proposal was transformational as it involved a service never before made available by the city, with financial and management responsibilities being shared by the municipality, residents, the private sector, and state government bodies.

This case study covers the period from 1996, when the project was proposed, to 2001, when financing was completed and construction of the sewerage project commenced. Unlike previous case studies provided in this report involving fundamental transformation at the utility level, this case study focuses on transformation at the *project level*. The Alandur underground sewerage project became a bankable project through a coordinated effort involving the municipalities of Alandur and Chennai, the State of Tamil Nadu, state asset management and credit facilities, and the donor community working together to implement a comprehensive package of innovative financial and credit enhancement arrangements to achieve success.

4.2 DESCRIPTION OF THE TRANSFORMATION

4.2.1 Summary of the Transformation Process

During the case study period, the Municipality of Alandur successfully financed and commenced construction of an entirely new underground sewerage system and wastewater treatment facility. The major elements of this successful project financing included:

- Establishment of a new sewer account in the Municipality of Alandur's budget;
- Implementation of a capital financing package totaling 346 Indian rupees (Rs.)²¹ through a combination of loans from public finance bodies and grants from the state, revenues generated through a one-time

²¹ The exchange rate on 1/1/99 was 42.5 Indian rupees (Rs.) to the dollar . (Source: FX Converter: <http://www.oanda.com>).

connection fee, and private financing through a build-own-transfer (BOT) agreement with a private operator;

- Implementation of a new tariff schedule for sewerage services;
- Formation of a new committee of key stakeholders in the municipal and state government and other stakeholders to oversee planning and execution of the project;
- Financing, design, construction, and operation of a new sewer system consisting of 120 km of underground sewage lines, pumping stations, and a wastewater treatment plant (WWTP) with an intermediate capacity of 12 million liters per day; and
- Execution of the first infrastructure project in the municipality that included private sector participation through:
 - Procurement of a private engineering contractor to build the sewage collection and distribution system, selected through a competitive bidding process;
 - Operation and management of the sewage collection and distribution system by the contractor for the first five years of operation on a fixed fee basis; and
 - Negotiation of a BOT agreement with the contractor to construct and operate the WWTP for a period of 14 years (the period proposed by the private partner in its tender bid).

To plan this complex and politically challenging project, the municipality worked in partnership with Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), the state asset management company and partner with USAID's Financial Institutions Reform and Expansion (FIRE) Project. Through this partnership, the municipality led the effort to engage the stakeholders in the community on the benefits and costs of the project and the mechanisms through which the community would pay for it. The municipality was also responsible for regulatory approvals. TNUIFSL took the lead in preparing and structuring the project and finance package, in conjunction with a multi-stakeholder committee established to oversee project execution. A project management consultant was hired to provide assistance in engineering design and feasibility studies, using moneys from a grant fund administered by TNUIFSL.

Oversight of the design and feasibility effort was conducted by a committee consisting of representatives of the Alandur municipal government, TNUIFSL, the Tamil Nadu Water Supply and Drainage Board, the Tamil Nadu Commissioner of Public Administration, and the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB). This effort provided the basis for the preparation of tender documents and the subsequent tender implementation and contractor selection, completed in early 2000. Three key contracting mechanisms were used, to be awarded to one engineering, procurement, and construction contractor:

1. A contract for construction of the sewer network, using the World Bank's Contract for National Competitive Bidding (NCB-W2) as a template;
2. An operations and maintenance contract, also using NCB-W2. The selected contractor would operate and maintain the underground sewerage system for a period of five years on a fixed fee basis; and
3. A BOT agreement for the WWTP, using guidance from the International Federation of Consulting Engineers (FIDIC). Through the agreement, the contractor would finance, build, and operate the WWTP for the period proposed in the contractor's successful bid. The contractor would be required to recover his investments in the WWTP on the basis of a per unit rate payment from the city for treatment of sewage delivered. The city agreed to provide a minimum payment level per annum regardless of the volume of sewage actually delivered.

In the State of Tamil Nadu, there had been little experience up to that time with private sector participation in municipal water and sanitation services. Additionally, no BOT agreements in the water sector had been

awarded anywhere in India. Therefore, public outreach was critical to overcome initial resistance to this process, as well as public concerns about the project's cost and the need for water customers to pay for the new sewage services.

To address issues of the sewerage charges, a "willingness to pay" survey was conducted by TNUIFSL's consultant, covering over 10 percent of the city's population. According to the survey, although the public generally had strong support for the project and accepted that users should pay for sewage service, this willingness had its limits. About 29 percent of the respondents were willing to pay a one-time connection fee lower than Rs. 500 per household, and 21 percent were open to paying a one-time connection deposit at no more than Rs. 2000 per household. About 86 percent of the respondents were willing to pay monthly sewer charges in the range of Rs. 21 to 50 per month, comparable to the existing water charges structure.

The actual consumer costs required to finance the capital cost of the project and cover operation and maintenance were substantially greater than the public's willingness to pay, as indicated by the survey. The municipality initially proposed monthly sewer charges of Rs. 150 per month per household, to be increased by 6 percent a year until reaching a target level of Rs. 180 per month. However, based on the results of this survey, the Government of Tamil Nadu (GoTN) agreed to provide grant funding to the municipality to pay for the difference between Rs. 150 per month per household and any deficit in the sewer account, with a maximum payment of Rs. 30 per month per household. As announced in September 1999, connection charges were set at Rs. 5000 per household and Rs. 10,000 for industrial and commercial customers. Monthly sewer tariffs were set at Rs. 150 per household, Rs. 450 for commercial customers, and Rs. 750 for industrial customers.

To gain public acceptance of these rates, the municipality mounted a vigorous public outreach/public participation campaign with extensive media coverage to explain the project's benefits, costs, and tariff system. To help reduce the burden on consumers, the city council decided to split the connection fee into two installments. While special provisions were not made for waiving fees for the poor, plans did call for connecting public latrines to the sewer system.

4.2.2 Summary of Performance Improvements

The schedule for the underground sewerage project for financing, designing, constructing, and beginning operations was largely on target. By the end of 2001, 26.7 km of the planned 120 km of sewer lines had been constructed, and construction of the WWTP was well under way. As of the end of 2004, the first phase of the project was completed, providing about 70 percent of the customers with water connections

Collection of the one-time connection fee exceeded expectations, particularly given the concerns raised by the willingness to pay study. By May 2000 (nine months after announcement of the fee), more than 80 percent of the municipality's customers had paid. Revenues generated from the connection fee reduced the indebtedness required by the municipality, and disbursements from the TNUDF loan proved to be unnecessary (see below).

4.2.3 Governance

Since the Municipality of Alandur does not have an autonomous water and sanitation utility, responsibilities for provision of water and sewerage services fall on the municipal government. The municipality had no experience managing sewage systems and wastewater treatment facilities prior to initiation of the underground sewerage project.

Given the limited resources of the municipality, design and execution of the project required a coordinated effort of technical assistance and management/oversight support. Through an agreement among the parties, TNUIFSL was responsible for project structuring and contract execution. As part of this responsibility, TNUIFSL procured and managed a private engineering contractor to prepare the detailed technical design of

the project. Oversight of the construction activity was the responsibility of the chairman of the Municipality of Alandur through a committee that included the Commissioner of Municipal Administration and the city's chief engineer, with the support of the Secretary of Municipal Administration for the GoTN and TNUIFSL's chief executive.

Management of the sewage system is jointly administered by the Municipality of Alandur, the private operator, and the CMWSSB. The sewage network is operated and managed under a contract overseen by the municipality. The contractor has complete management control of the WWTP and assumes full liability for meeting the state's environmental standards. In turn, the Municipality of Alandur is obligated to provide sewage to the system on a per rata basis, with a minimum payment required regardless of the actual volume delivered. The CMWSSB is responsible for billing and monthly sewer fee collection.

4.2.4 Regulatory/Oversight Framework

The Tamil Nadu Pollution Control Board is responsible for monitoring the compliance of the BOT contractor with environmental standards. The joint venture holding the BOT has sole obligation for environmental compliance.

There is no independent regulatory body in the State of Tamil Nadu charged with overseeing operation of water and sanitation systems, setting service standards, or approving tariffs.

4.2.5 Capital Finance

The capital cost for the sewer network, borne by the Municipality of Alandur, totaled Rs. 346 million. An additional capital cost of about Rs. 66.8 million for the WWTP was financed by the BOT operator.

To finance the municipality's portion of the investment costs, a package of loans and grants was prepared, as shown in Table 4.1. All loans were from domestic sources and denominated in Indian rupees.

TABLE 4.1. ORIGINAL FINANCE PACKAGE FOR THE UNDERGROUND SEWERAGE PROJECT^a

FINANCE SOURCE	AMOUNT (MILLION RS.)
Term loan from TUFIDCO	162
Term loan from TNUDF	42
Connection fees and interest	100
Gap funding by Government of Tamil Nadu (grant)	32
Grant fund from TUDIFCO for project supervision	10
TOTAL	346

^a Currency exchange rates: 1 US Dollar = 35.86 Indian Rupees (1/1/97); 1 US Dollar = 46.69 Indian Rupees (1/1/01). (Source: FX Converter, <http://www.oanda.com>)

The majority of financing to the municipality (59 percent) was to be made through loans provided by the Tamil Nadu Urban Infrastructure Development Corporation (TUFIDCO) and the Tamil Nadu Urban Development Fund (TNUDF). The loan from TUFIDCO was payable over eight years (after a two-year payment moratorium), with interest of 5 percent per annum (prevailing market rates at that time were about 15 percent). TNUDF's loan was set at a rate of 16 percent per annum payable over a 15-year period after an initial five-year payment moratorium.

Conditions in the loans placed substantial repayment requirements on the Municipality of Alandur, resulting in the municipality assuming significant financial risk. One condition of the TNUDF loan was that disbursements would be provided for three years, after which time they would be subject to the condition that the municipality meet its connection targets. Should targets not be achieved, further disbursements

would be terminated. The targets established by the municipality in negotiating these repayment terms were to connect at least 21,869 households and 560 commercial customers by the end of fiscal year 2004/05, the expected schedule for commencement of full operations. (Interestingly, as the project was implemented, no funds actually had to be disbursed under the TNUDF loan. Revenues generated from the one-time connection fee exceeded the amount anticipated when the finance package was structured, negating the need for funds from the loan.)

TNUDF and TUFIDCO both stipulated that all revenue receipts of the municipality (including property tax collections, stamp duty, and the grant from the GoTN) as well as sewer tariff income be escrowed in favor of TNUDF and TUFIDCO. The city also had to agree to accept limits on future indebtedness.

In addition to the grant funding provided by the GoTN for the capital cost of the project, the GoTN agreed to fund the monthly operating costs of the system above the Rs. 150 per household sewer charge, to a maximum of Rs. 30 per connection per month.

4.3 ANALYSIS OF THE TRANSFORMATION

4.3.1 Success

The underground sewerage project was financed, constructed, and implemented on schedule. The first phase of the project, to provide sewer connections to 70 percent of the municipality's water customers, is now operational.

4.3.2 Key Features of the Transformation Process

Key features that contributed to the success of the Alandur sewerage project are listed below:

- **Outreach/public participation program:** Since success of the project, from the outset, depended highly on collection of connection charges and monthly sewer fees and public acceptance of engaging a private BOT participant, community awareness and support was critical. The aggressive public outreach campaign conducted by the municipality and the GoTN and the engagement of stakeholders was essential to assuring the lending agencies and city officials that repayment provisions would be met. To maintain support for the project, a citizen committee was formed, and it met frequently to review the status of the project, monitor the performance of the BOT contractor, and provide a forum in which citizens could air their concerns.
- **Effective sewer fee system:** The willingness to pay survey was critical to informing municipal and state officials of the serious constraints they were facing in establishing connection charges and sewerage fees. The survey indicated that charges needed to support the project were significantly higher than the customers' willingness to pay, highlighting the critical need for a public awareness and stakeholder involvement program. The GoTN's decision to provide deficit funding was strongly influenced by the results of the study.
- **Transparency in bidding and contracting procedures:** Transparency in the project development and implementation process was critical to providing assurances to prospective private sector bidders. This included strict application of World Bank and FIDIC processes, and oversight and approval of the process by the World Bank. Public participation in the deliberations of the management committee overseeing the tendering process execution was also important.
- **Payment assurance to the private sector participants:** The Municipality of Alandur agreed to provide the BOT contractor a minimum level of revenue through a form of "take or pay" arrangement; the city guaranteed to supply a minimum level of raw sewage to the plant and pay through a unit rate agreement

at a pre-determined minimum annual fee. Through this arrangement, the city assumed the risk of paying the fee if the predetermined level of sewage was not met (provided that there were no construction defaults). In turn, the private partner assumed all responsibilities and risks for financing, constructing, and operating the WWTP for a period of 14 years.

- **Imposed fiscal discipline through loan stipulations:** TNUDF and TUFIDCO placed strict conditions on their loans to the municipality, requiring the city to accept and implement measures of fiscal discipline. For example, TNUDF required the municipality to establish a separate account for the sewer system, with profit and loss statements distinct from the city's general budget, forcing transparency and discipline on city officials who were charged with managing the system. TNUDF also requires that urban local bodies limit new debt to a percentage of their annual revenue (typically, 30 percent). The condition in the loan guarantee provided by the GoTN to TUFIDCO and TNUDF stipulated that any payment provided to these entities, due to default by the municipality, would be deducted from the annual transfer of payments from the state government to the city. Such measures forced the city council to make difficult decisions about capital priorities and to closely oversee sewer system management.
- **Imposed fiscal discipline through contractual obligations:** The binding relationship established between the municipal government and the management/BOT contractor forced the municipal government to ensure timely payment for management and wastewater treatment services. With a lapse in payment, the contractor is not obligated to continue service, likely leading to a shutdown of the system and political consequences for municipal government leaders. Thus, it is in the interest of the city council to ensure that sufficient funds are budgeted and that payment schedules are met.
- **Strong political leadership and project advocacy:** A critical element of success was the strong advocacy for the project provided by the city chairman and city council. While there was generally strong political support for a sewer system within the city, political will was critical to convincing city water customers to pay a significant share of the cost and bringing in the private sector. Throughout the deliberations on project financing, a majority of the city council maintained strong support for the project.
- **Access to finance for municipalities:** The project could not have been implemented without concession financing and subsidies from the government and public-private entities, established specifically to meet the credit needs of municipalities without access to private capital, due to a low or nonexistent credit rating. Even though more than 30 percent of the project's capital was generated by the municipality from connection fees, grants from the GoTN and loans from TUFIDCO were crucial. The loan agreement from TNUDF, while proving to be unnecessary in the end, was essential for participation in the finance package by all parties. The TNUDF loan was provided through the organization's pooled municipal finance facility, capitalized through a pooled finance bond issue.
- **Technical and financial assistance:** 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 other sources, such as USAID's FIRE project, were critical. TNUIFSL and FIRE played a substantial role in structuring the project, managing feasibility studies, and preparing bid and contract documents crucial to project success. Additionally, TNUIFSL was responsible for issuing tenders and selecting the design contractor. Review and approval of the engineering reports by the management committee, consisting of senior officials of Alandur Municipality, the Tamil Nadu Water Supply and Drainage Board, Chennai Metropolitan Water Supply and Sewerage Board, and TNUIFSL, were essential to successful project management.
- **Transparent lines of communication with BOT operator/management contractor:** The management committee has bi-weekly meetings with the management contractor. A clear understanding by all parties of reporting obligations and decision-making responsibilities was defined in the contract that culminated from the tendering process.

4.3.3 Sustainability of the Transformation

The prospects for sustainability of this project are unclear. On the positive side, it is encouraging that the city exceeded its targets for collecting the one-time connection fee, thereby reducing its anticipated debt. Another positive indicator is the loan recently received by the Municipality of Alandur for rehabilitating its water system through the Tamil Nadu Water and Sanitation Pooled Fund. This is a revolving fund, established in 2003, to finance water and sanitation needs of selected state municipalities, with USAID sharing in the risk through a loan guarantee of 50 percent under USAID's Development Credit Authority.

These successes must be balanced, however, with the fact that continued system operation is dependent on ongoing gap funding by the GoTN. Revenues from monthly fees are inadequate to meet operation and maintenance costs. While this raises a question of the sustainability of the system, it must be pointed out that the substantial role played by the State of Tamil Nadu in the financing of the Alandur underground sewerage project through gap funding is not unusual in India. States in this country are heavily favored fiscally, while urban local bodies are relatively weak. This is illustrated by the fact that from 1997 to 1999, the 28 states of India accounted for 55.1 percent of total government-accrued revenue, compared to 10.4 percent for all urban and rural local bodies in the country. The constitution of India assigns borrowing powers to both the central and state governments. Therefore, substantial financial assistance to local bodies is a normal way of doing business.

An additional issue regarding the long-term sustainability of the project is the ability of the Municipality of Alandur staff to assume responsibility for operation and maintenance of the project after the current management contract expires in 2005. The city has a long-term plan that includes the training and staffing of municipal employees, anticipating that the city government will assume more responsibilities for operation and maintenance. A viable alternative to this approach would be for the municipality to award a new management contract and keep operations and maintenance within the private sector. At the time of this report, information was not available regarding the municipality's future plans.

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5.0 PHILIPPINES: METRO MANILA EAST ZONE CONCESSION

5.1 INTRODUCTION

The Metropolitan Waterworks and Sewerage System (MWSS) was formed in 1878 to serve the then-developing city of Manila, Philippines. By the mid-1990s, the Philippines faced an ever-deepening water supply crisis in Manila and surrounding towns, derived from years of under-investment in new water supply sources, lack of rehabilitation of distribution systems, and operational inefficiencies. This situation became critical when the Ministry of Agriculture chose to exercise its control over for the shared water of the Angat River, reducing the available water supply by about 30 percent. More than 60 percent of the produced water was unaccounted for, with an estimated 15 percent lost to illegal connections. Only a few areas in the greater metropolitan area had adequate water pressure and a 24-hour water supply. Outstanding loan obligations amounted to \$1.1 billion. Accounts receivable were running at four to five months billings. Water system investment requirements were significant and beyond the capacity of the government or the MWSS, a nominally independent agency of central government²².

MWSS SERVICES

Service Area:	2,100 km ²
Population served:	7.3 million
Service Connections:	800,000
Service Coverage	67%
Water Availability:	17 hours
Staff/1000 connections:	9.8

In 1995, the government enacted the National Water Crisis Act that allowed the president to explore private sector options for improving water supply service. This opened the door for the establishment of two major water supply and sanitation franchises to provide service to the greater Manila area. With the assistance of the International Finance Corporation (IFC) and others, the government established two concession areas, one for eastern Manila and one for the western part of the city. In 1997, the Manila Water Company, Inc. (MWCI) won a 25-year concession to operate the eastern zone, and Maynilad Water Services Inc. won the western concession through a detailed competitive bidding process. This case study focuses on the metro Manila east zone concession, operated by MWCI. Shareholders of MWCI at the time of the contract were the Ayala Corporation (with 46 percent of the holdings), the Bank of the Philippine Islands (10 percent), the United Utilities (18 percent), the IFC (10 percent), the Mitsubishi Corporation (10 percent), and MWCI (6 percent). MWCI signed a concession agreement with MWSS that included specific performance targets, providing a framework and incentives for technical and financial improvement.

MWCI: Metro Manila East Zone

Service Area:	1,400 Km ²
Population served:	3.9 million
Service Connections:	551,000
Service Coverage:	93%
Water availability:	21 hours
Staff/1000 connections:	2.8

5.2 DESCRIPTION OF THE TRANSFORMATION

The transformation of service provision for Manila from public utility to private operator had several elements. These included:

- Changing the legal system to allow services to be provided under contract with a private sector firm;

²² MWSS is a government corporation with the ability to retain revenues and spend them as needed.

- Development of terms of reference and background documents, allowing for a competitive bidding process based on lowest price (or, actually, highest discount on the opening schedule of price), which simplified the bid evaluation and improved transparency;
- Completion of an open and transparent rule-based bidding process, with clear evaluation and award procedures; and
- Conclusion of concession agreements with the MWCI and Maynilad Water Services, Inc. which resulted in the transfer of operational authority, as outlined in the agreements.

The following sections will discuss the transformation of service provision following the signing of the concession agreement with Manila Water Company Inc. to provide services in the metro Manila east zone.

5.2.1 Summary of the Transformation Process

The transformation process has been driven by financial and operational considerations and the terms of the concession agreement which focused on:

1. Provision of water supply to expand coverage and supply uninterrupted 24-hour service at an agreed-upon pressure;
2. Expansion of sewage and sanitation services for customers connected to the water supply network, including septic cleaning and desludging for those with septic tank systems; and
3. Customer service improvement addressing queries, complaints, and service repairs.

Performance targets for water supply, sewer, and sanitation improvement for five year periods in each city/municipality were included in the concession agreement. These performance targets were designed to focus the concessionaires on investing in repairs and new infrastructure to meet the expanding coverage requirements. The targets also focused the concessionaires on improving operational and financial efficiency. Prior to the rate rebasing of 2002, a set of 21 key performance indicators (KPIs) and business efficiency measures (BEMs) were introduced to facilitate analysis of concessionaire performance and more accurately measure progress toward meeting the targets. The concessionaires now report annually on performance against targets for all 21 indicators.²³

The concession agreement required the concessionaires to pay a fee that covered debt service for existing MWSS operations and the cost of establishing a regulatory office within MWSS to monitor terms of concession agreements. The concessionaires were also obligated to hire MWSS employees for a six-month probationary period with agreed upon procedures for termination if the employee chose not to remain with MWSS. MWCI took on 2,100 MWSS employees who had been working in the eastern concession area.

Early in the transformation period, MWCI dealt with myriad of issues related to past management practices and limited capital finance. As a result, a premium was placed on careful use of resources and efficiency improvement. During this period, MWCI initiated a number of administrative and programmatic changes. It established a set of corporate guiding principles that were incorporated into the organizational culture. These principles are articulated with the slogan, “We care...for every customer, ...for our people, ...for the environment, ...for our shareholders, and, ...for the urban poor.” MWCI recognized that it could only succeed if it worked closely with the communities it served. These principles are made real in a number of programs and activities designed to improve utility technical and financial performance and meet the terms of the concession agreement.

²³ MWCI has provided MWSS with KPI and BEM Annual Reports for 2003 and 2004

In order to meet water supply provision targets, MWCI established a territory management approach, dividing the concession area into seven business areas, 95 smaller district metering zones (DMZs), and 263 district metering areas (DMAs). The DMZs focus attention on zones that average 5,000 customers each, with DMAs focusing on an average of 2,000 connections. Each territory has a dedicated specialist team empowered to handle water supply and demand, non-revenue water monitoring and control, and customer concerns in their respective DMZs and DMAs. Territory team performance is measured in terms of the KPI and BEM targets. Each team is also responsible for developing close community and business partnerships within its territory. Middle level managers were given authority and latitude to meet goals and address needs within their areas. In order to address expanding service, particularly for the urban poor, MWCI established *Tubig Para Sa Barangay* (Water for the Community) projects. These projects focus on providing services to poor urban neighborhoods of 300–1,000 households. The program provides an abbreviated network with metered community taps for which the community must pay through its own mechanisms.

Sewerage (formal wastewater treatment) and sanitation (on-site septic systems) improvements were addressed through increasing the number of sewer connections to existing laterals, constructing small treatment facilities²⁴, and implementing a program to empty and clean septic tanks. This approach recognized that much of the concession area depended on individual or communal septic systems and it allowed MWCI to improve services at reasonable cost during the early years of the concession. Some of this work was being supported by the MSSP, already in process when the concessions were established. The MSSP also provided funds for repairing and upgrading wastewater collector and treatment facilities and expanding the sewerage system. Future investments will be planned within the framework of the recently completed master plan for sewerage.

Attention to customer service is an important element of the transformation, particularly since a vocal segment of the population had consistently opposed private sector operation of the utility. Several elements of the transformation process have led to improved customer service. These include the establishment of a call center, commitments to rapidly respond to breakdowns and outages, creation of demand management areas that focus teams on smaller, more manageable service areas, and formal staff recognition through an employees award program. Four of the KPIs focus on customer service²⁵.

The concession agreement required MWCI to pay a concession fee that covers debt service for existing MWSS operations and the cost of operating the regulatory office within MWSS to monitor terms of the concession agreement. From 1997, when the concession agreement was signed, through 2004, MWCI has paid 2.5 billion Filipino pesos (PHP), or about \$45 million at current exchange rates, in concession fees.

5.2.2 Summary of Performance Improvement

Driven by the concession agreement requirements that include the coverage targets and the more recently introduced KPIs and BEMs²⁶, MWCI has been able to improve technical and financial performance in a significant number of measurable ways. By 2002, five years into the concession period, negative net income was replaced by significant positive net income (from negative net income of PHP 38 million to PHP 553 million in positive net income), water supply coverage improved from 67 to 89 percent, and 24-hour service coverage increased from 26 percent of customers to 83 percent. MWCI was able to accomplish this while reducing the workforce by 25 percent as part of the cost reduction strategy.

²⁴ Twenty-two small systems have been built in 12 communities that serve about 22,000 households.

²⁵ This includes responses to service complaints, billing complaints, new connection requests, and disruptive mains failure.

²⁶ As yet, no penalties will be levied for failure to meet KPI or BEM annual targets. These may be introduced at a later date, if it becomes clear that targets are unreasonable.

Although tariffs have increased, the cost for average residential customers remains below 3 percent of income. Since taking on the concession, MWCI has spent about \$70 million from its own resources, more than twice that from other resources. MWCI has approval for a public stock offering that is expected to raise to raise \$15 million in March 2005, from both international and local investors. Table 5.1 illustrates changes in a number of important financial and management factors since MWCI began operating the concession.

While there have been notable service and financial improvements, it is important to note unaccounted for water levels are still above regional averages and largely unchanged since MWCI took over operations. Also, tariff rates have increased significantly (from a bid of PHP 2.32, or about 9¢/m³ to PHP 14.47, or about 27¢/m³ by 2003²⁷) after five years, in part because of the Asian financial crisis that hit less than a year after the concession contract was signed. Although tariff rates remain within the terms of the current contract, the expectation among customers was that rates would not increase appreciably during this first five year period. These increases have had particular impact on the poor and have resulted in an active analysis of how rates are adjusted within terms of the contract and who should bear risk. It should also be noted that the west zone concession holder, Maynilad Water Services Inc, when faced with the same types of financial problems (although more significant, due to the larger dollar-denominated concession fees), stopped making concession payments in March 2001. MWSI has now declared bankruptcy and is seeking protection in the courts.

5.2.3 Governance

The metro Manila east zone is governed and managed under a private sector concession contract with MWCI. MWCI is a private joint venture company, established in 1997 specifically to operate the concession. Terms of the concession agreement require the joint venture to be at least 60 percent Filipino-owned. MWCI is governed by a eleven-member board of directors, representing the interests of joint venture partners; eight are Filipino, and all have distinguished careers in business.

Day-to-day operation of the company is overseen by a management committee of six, all of whom have management, business, and finance backgrounds. Only the Operations and Capital Works Group Director has extensive urban water supply and sanitation sector experience. The management committee seems designed to manage the operation of the utility as a consumer-oriented business. MCWI and the management team have full discretion to operate the concession as they chose, within the limits of the concession agreement and the laws of the Government of the Philippines. The concession agreement is structured to provide incentives to meet objectives and targets as described above.

The remainder of the staff (about 1,525) consists mainly of former MWSS staff. They were represented by the MWSS Employee Association and the Confederation for Unity, Recognition, and Advancement of Government Employees before and during the concession hand-over. Workers employed directly by MWCI continue to be represented by unions (Manila Water Company *Kapatiran ng mga Mangagawa at Kawani sa MWSS*). These staff hold 6 percent equity in MWCI through a stock option program established when the concession agreement was signed.

²⁷ The current rate (as of early 2005) is 18.55 PHP/m³.

TABLE 5.1: OBSERVED PERFORMANCE CHANGES –MWCI (East Zone Concessionaire) ^a

Performance Indicator	Pre-Transformation (1996)	Post-Transformation (2003)
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	Enough stratification existed to result in concession targets to improve service to urban poor.	MWCI has focused on increasing connections to the urban poor through the <i>Tubig Para Sa Barangay</i> program.
Affordability of service, especially to the poor	A block tariff structure sought to reduce impact.	Current tariffs, although higher than in 1996, still keep rates to about 3% of income, even for poorer households.
Quality of customer relations	Poor, with wide dissatisfaction with MWSS.	Improved, but with dissatisfaction due to increasing tariffs.
Population served (%)	67	89
Number of connections (thousands)	285,000	551,000
Compliance with Applicable Government Policies and Standards:		
Potable water standards compliance	—	100%, according to MWCI
Environmental compliance	—	100%, according to MWCI
Technical Capacity:		
General infrastructure condition	Substandard, with significant investment required	Improving, with PHP 9 billion (\$150 million) since 1997. Annual asset condition reports required.
24-hour water availability (% per year)	26	89
Metered connections (%)	Most legal connections were metered	100 Note: All new connections are metered, even if they serve more than one household.
Direct sewerage coverage (%)	7	Remains less than 10
Unaccounted for water (%)	58	52
Reliability/adequacy of water supply sources	Adequate	Adequate with some investment made, but no major new sources developed.
Management:		
Employees per 1000 connections	8.5	2.8
Implementation of transparent management/admin structure and policies	Limited	Policies and structure are open and available. The WMCI web site contains technical and financial information, and the concession agreement is a public document.
Implementation of performance benchmarking/performance incentives	No	Use of 21 KPIs and BEMs to monitor performance
Labor relations	MWSS staff were represented by labor unions.	MWCI has reduced staff by about half (with around 2% involuntary layoffs) by working with labor unions and workers. No significant labor unrest resulted.
Financial:		
Annual revenue (millions)	PHP 421	PHP 3,778
Annual operating costs (millions)	PHP 459	PHP 2,627
Annual operating expenses/annual operating revenues (%)	109	69
Return on equity (%)	-3.7	37.6
Earnings before interest, taxes, & depreciation (millions of PHP)	-38	1,813
Liabilities/assets (%)	32	65
Billing ratio (%)	100	100
Collection ratio (%)	86	99
Implementation of multiyear financial forecasting	Some financial forecasting was necessary as part of investment planning.	Multiyear financial forecasting was required to establish a bid price and continues to be used for planning purposes
Ability to mobilize private capital	None prior to concession	IFC became a shareholder. A March 2005 public offering exceeded expectations and raised more than \$65 million.
^a Currency exchange rates: 1 US Dollar = 26.25 Philippine pesos (1/1/96); 1 US Dollar = 53.65 Philippine pesos (1/1/03). (Source: FX Converter, http://www.oanda.com)		

5.2.4 Regulatory/Oversight Framework

When the Manila concession agreements were signed, the Philippines had no national water regulatory body. The National Water Resources Board performed a few basic regulatory functions, allocating permits for surface and ground water use. Under the terms of the concession, MWSS created a regulatory office. This was established and run specifically to manage and regulate the two concessions and their concession agreements, with the primary objectives of determining tariff rates and monitoring concessionaires' performance relative to service obligations. This office acts as a contract manager, with the concessionaires regulated by contract agreements. The regulatory office has four divisions: financial, technical, customer service, and administration and legal affairs, with funding provided as a specific line item in the regular concession fees made to MWSS.

Once established, it became clear that the regulatory office itself needed strengthening in order to effectively perform its duties. In 2002, the Asian Development Bank provided a technical assistance grant of \$800,000 (complemented with a \$400,000 counterpart contribution from MWSS) for capacity building of the regulatory office over a 12-month period.

One of the three key service obligations of the concessionaires is the "provision of better customer service," with expectations that the concessionaires would promptly reply to customer questions and complaints, inform consumers about tariff changes and planned interruptions, and repair service disruptions. In this area, the regulatory office's customer service department oversees concessionaire performance.

Tariff-setting methods and procedures are clearly spelled out in the concession agreement and include regular adjustments based on the Consumer Price Index, extraordinary price adjustments (EPAs) that can be requested by MWSS or MCWI for a specific list of events (change in the foreign rate of exchange, amendment to service obligations, etc.), and rate rebasing every five years. Rate rebasing allows for a comprehensive review and update of the base tariff structure to allow for major changes in operating conditions or the environment. MWCI has successfully negotiated EPAs and completed a rate rebasing in 2002.

The concession agreement requires MWCI to meet drinking water standards and wastewater effluent standards, but the MWSS regulatory office does not actually oversee compliance. However, MWCI is required to report to the regulatory office on these issues.

The concession agreement outlines a dispute resolution process which includes a panel that is required to operate under the rules established by the United Nations Commission on International Trade Law. This process was tested and found to be satisfactory in 1998 when the definition of "appropriate discount rate" was disputed during a rate adjustment.

Efforts are under way to establish a national multi-sectoral regulatory agency that will have responsibility for the water sector. It is not yet clear how the contract management responsibilities, currently being handled by the MWSS' regulatory office, will be incorporated into this body.

5.2.5 Capital Finance

In order to bid for the concession, each interested consortium was required to demonstrate a minimum capital base of \$100 million. Under the terms of the concession agreement, MWCI paid a concession fee covering \$125 million in dollar-denominated debts for existing loans that benefited the concession area. MWCI has spent about \$70 million for its own capital expenditures. The IFC has provided two loans to MWCI, the first for \$50 million and the second, in 2004, for \$30 million. These loans are supporting MWCI's expenditure program through 2007. These expenditures include the following components:

- New raw water sources development;
- Service expansion to east and southeast areas of the concession;

- Network distribution improvement;
- Other pipe extension and improvement projects;
- Water supply facilities;
- Non-revenue water reduction programs;
- Sewerage and sanitation services; and
- Payment of concession fees to MWSS.

In mid-2004, the IFC also agreed to subscribe to \$15 million in shares, giving it an ownership share in MWCI of about 9 percent. MWCI also raised 800 million PHP (\$14 million) from its initial public offering in March 2005. These funds will finance ongoing upgrades of its pipeline network and expand its services. Public investors now own 34 percent of MWCI's total outstanding shares. MWCI has announced that it expects to pay a dividend in September 2005.

5.3 ANALYSIS OF THE TRANSFORMATION

5.3.1 Success

To date, the operations of MWCI as the concession holder for the metro Manila east zone must be considered a success. Performance has improved and needed investments not forthcoming prior to the creation of the concession are being made. From the government's viewpoint, the concession is revenue neutral, with MWCI making concession payments to cover past debt obligations. New debt is being taken on entirely by MWCI. MWCI will also raise private capital through its planned stock offering.

The utility is attractive to investors because MWCI has demonstrated that it can expand services and increase efficiency, thus improving profitability. The operation of the concession over the past five years has demonstrated that the regulatory process is stable and not subject to government intervention for political gain on behalf of rate payers.

5.3.2 Key Features of the Transformation Process

It is important to realize that a number of key features, not all associated with the actions of the MWCI, have contributed to the success of the metro Manila east zone concession. The features that have led to success relate to the establishment of the concession, the operation of the concession, and elements external to concession operation. The development and operation of the metro Manila east zone concession is the product of a complex set of actions. The following key features are an attempt to distill those elements that were critical to the success of the transformation.

Features related to establishment of the concession:

The process that led to the establishment of the concession began with discussion of the concept as early as 1994. The concession arrangements were finally signed in late 1997. The key features that allowed the establishment of the concession were:

- **The generally recognized poor performance of MWSS:** This perception of poor performance led to broad acceptance of what appeared to many to be radical solutions. Specific efforts were made to ensure that the public understood the process and the performance improvements sought.

- **Political will and financial support of the government:** Senior government officials, including President Ramos, were committed to an open transformation process, with the signing of the concession agreement and transfer of operations recognized as the clearly defined end point. This required the passage of a number of laws to provide the legal basis to enable the concession to move forward.
- **Involvement of IFC specialists and honest Filipino professionals:** A broad range of specific issues that arose during the development of the detailed concession model and the bid/award process benefited from the perspective and contributions of all involved in the process.
- **Tariff development and revision process driven by specific procedures and the rule of law:** The process establishes an inflation adjustment, a process for negotiating when extraordinary events occur, and rate rebasing every five years. It also includes a well-defined dispute resolution process. The process convinced concession bidders that a fair and balanced tariff structure would prevail.
- **A fair labor transition process:** The process focused on providing incentives to workers while at the same time providing the new operators with the flexibility to restructure the work force. This process established minimal labor opposition to the concession.

Features related to the operation of the concession:

During the past seven years MWCI, the operator for the Manila east zone concession, has improved performance and efficiency within the framework established by the concession agreement. The most important features of MWCI operations that have led to success are:

- **Solid partnership among the joint venture partners:** The board of directors and the Management Committee has made a point of ensuring that the best interests of all partners are represented. This has facilitated planning and decision making at the senior level.
- **The ability of the operator to instill a new corporate culture in the former staff of MWSS:** The employee stock option program, corporate recognition for individual performance, and an active community service program are all elements that support this move toward performance improvement.
- **The division of the concession areas into small zones:** This has allowed technical focus and financial performance at the metering area level and the creation of a customer service culture through visibility and responsiveness at the community level.
- **Focus on commercialization:** Cost management, improved debt collection, and asset management are all hallmarks of a company focused on the financial aspects of business management. Bringing these skills to service provision was a major reason for originally establishing the concession. These skills were particularly important during the first several years of concession operation, when funds were scarce.
- **Operational flexibility:** MWCI has established a planning and management process that reflects the changing situation. It has the flexibility to plan and act on its needs and those of its customers without government bureaucratic processes significantly slowing response times to evolving conditions and situations.

Features external to concession establishment and operation:

There are several features not specifically related to the development or management of the concession agreement that have also had an impact on the success of the transformation. Two of these are:

- **The creation and support for a regulatory office that has the legal mandate and ability to monitor the terms of the contract:** Concession payments include an annual obligation to provide a source of revenue to maintain the MWSS Regulatory Office. This office, although not in the strictest sense a regulatory agency, manages the concession agreements and monitors performance. The office oversees

the detailed implementation of concession agreement details and is the lead agency that monitors tariff adjustments. This is designed remove the political element from the concession management process.

- **The transparency dynamic highlighting positive performance but also allowing for healthy criticism of MWCI actions:** Transparency requirements help to reassure the public that the concession is being operated with performance improvement as its principle driver. It also affords the public the chance to analyze and critique MWCI actions, a continuing process that helps to keep operator attuned to customer needs.

5.3.3 Sustainability of the Transformation

It appears that MWCI will continue to improve performance. The use of the KPI and BEM monitoring system will help maintain the utility's focus on providing services at acceptable rates. The government has given no indication that it is unsatisfied with MWCI performance, even though some initial performance targets have not yet been met. The fact that the MWCI contract is for a 25-year period is significant. It means that, as long as the government and customers are satisfied, the transformation should be sustainable for 25 years. This is in contrast to the three to seven year management contracts commonly used which do not provide the same incentives for long-term investments.

However, it should be noted that the Maynilad Water Services, Inc. concession in the metro Manila west zone has collapsed. MWCI continues to face similar risks. The concession fee is denominated in foreign currency because debt repayment must be made in foreign currency. Due to the fact that tariffs are paid in local currency, extreme exchange rate fluctuations have an impact on profitability. Financial shocks, natural disasters (such as the Mount Pinatubo eruption or a prolonged drought), or technical difficulties (e.g., the failure of the Angat reservoir), although not likely, are risks that could lead to collapse of the MWCI concession. Such a collapse would place utility operation back in the hands of MWSS. Barring such events, MWCI seems likely to provide services throughout the concession period. MWCI is nearly 30 percent through this period and has weathered the most difficult of the transition years.

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6.0 HUNGARY: DEBRECEN WATER WORKS COMPANY

6.1 INTRODUCTION

Debrecen Water Works Company serves the City of Debrecen, Hungary's 220,000 residents. Debrecen, the second largest city in the country, is located in the easternmost part of the country and is a major commercial and cultural center for the region. The original water company was established in 1949, when the city's water system was nationalized by the Communist government.

The first half of the 1990s marked a dramatic turning point in management of the city's water and wastewater system. Sweeping changes in the city's government, wrought by the fall of Communism, necessitated the transformation of its water company to meet the needs of an economy transitioning from central planning to a market-based system. In 1992, pursuant to the Government of Hungary's new legal framework that provided for the transfer of certain state-owned property to municipalities, the assets and control of the city's water and sewerage operations were transferred to the newly established local government. In January 1994, tariff-setting authority for municipal utilities was transferred from the central government to municipal governments.

This period was also a time of new challenges for the city's water system. The system was experiencing a significant reduction in the use of its water. Demand for water was decreasing substantially due to heavy industry's reduced water needs and high unemployment resulting from the economic transition. At the same time, major new investments in the sewer system and wastewater treatment facilities were needed to respond to more stringent environmental requirements under development.

To address these developments, the city council pursued a brief experiment from 1993 to 1995, when it awarded a concession for operation of the water and sewer system to a private firm. In 1993, the city issued a competitive tender and signed a concession agreement with Générale des Eaux. However, in August 1994, the city council was under new political leadership, and it decided that the former vote lacked the required legal majority, and the council annulled the awarded concession. A new concession was awarded to Eurawasser, a joint subsidiary to Lyonnaise des Eaux and Tyssen. Eurawasser proposed to invest between six and eight billion Hungarian forints (HUF) in the water and sewer system, as compared to the HUF 3 billion proposed by Générale des Eaux. Eurawasser's plans also included a 50 percent reduction in the workforce and a fourfold increase in fees from 1995 to 2000.

Public outcry over the proposed staff reductions and fee increases became a major political issue. As a result, the city council once again changed its position on this issue. In 1995, the council voted to move away from a concession approach and to keep control in the public sector. A significant factor in this decision was that management of Debrecen Water Works pledged to the council to undertake the same projects proposed by Eurawasser, but on a different schedule, with more favorable consumer prices, and a lower financial burden to the city government.

The city council opted to establish a publicly held share company, Debrecen Water Works Company, Inc. Ownership of all utility assets was transferred to this new company, while the city owned 100 percent of the company shares. The purpose of converting Debrecen Water Works to a stock company was primarily to improve its creditworthiness and provide collateral for loans. The restructuring included substantial revisions to the company's financial practices, building depreciation into end-user charges, enhancing cost recovery through the adoption of a flexible pricing policy, and accelerating capital investments through the access of commercial bank loans. The projected investment package was to be aimed at extension of the sewerage network, improvement of the wastewater system, and upgrading of wastewater treatment facilities.

This case study addresses the period of 1995 to 2001 when the newly established Debrecen Water Works made the transformation from a fledgling public company into a mature public utility with a record of continuous performance improvement.

The transformation took place in two phases:

- **1995–1999:** Startup of the public stock company and implementation of financial turnaround measures; and
- **1999–2001:** Assumption of the utility’s management by a public asset company and organizational restructuring to ensure long-term financial sustainability.

6.2 DESCRIPTION OF THE TRANSFORMATION

6.2.1 Summary of the Transformation Process

During the first phase of transition, 1995 to 1999, Debrecen Water Works began operation as a publicly held stock company. Major challenges faced the new company during this period, including a decline in water demand resulting in overcapacity of the supply system and the need to extend and improve the sewer and wastewater treatment system. Furthermore, the chaotic attempts at restructuring the water system in the first half of the decade resulted in a pre-tax income loss of HUF 22 million (\$163,000²⁸) in 1995.

In spite of these challenges, the company was successful in improving its financial conditions, securing financing for a program of sewer and wastewater treatment facility rehabilitation and expansion that totaled HUF 4.1 billion from 1995 through 1999. From 1995 to 1996, the company moved from a position of pre-tax income loss to a positive income of HUF 23.1 million. The company has experienced growth in pre-tax income every year since that time.

Essential elements of this first phase of the transformation included:

- Reconstitution of Debrecen Water Works as a public stock company wholly owned by the local government;
- Appreciation of the stock company’s public works property as contributed assets with subsequent higher amortization, with the appreciated property and assignment of revenues of the company’s largest customers to serve as collateral for financing;
- Access to external financing from private capital markets, public loans, and grants to the greatest extent possible to meet investment needs;
- Incorporation of amortization, justified expenses, and a reasonable rate of return into the tariff structure, based on a transparent and readily understood formula; and
- Development of a five-year strategic plan targeted to achieve a rate of return on assets of two percent through improved asset management and implementation of cost controls, sound financial accounting, and oversight practices.

As stated earlier, the major reason for conversion of Debrecen Water Works to a public stock company was to improve its creditworthiness and provide collateral for loans. An independent appraisal conducted in 1995, in conjunction with ownership transfer, resulted in significant upgrading of the value of the company’s assets. The company had many capital assets that had been fully depreciated prior to conversion. These assets were

²⁸ The exchange rate in 1995 was 135 Hungarian forints to 1 US dollar.

reviewed, given new gross values, and re-amortized. The appreciation of assets was made possible because much of the basic infrastructure had been regularly maintained and had a reasonably good history of service delivery, with few disruptions. As a result of the appraisal, the value of the company's assets increased from HUF 2.8 billion to HUF 7.5 billion, or 268 percent. With the amortization rate unchanged, the amortization of property (plant and equipment) almost doubled, with an increase from HUF 145.4 million to HUF 251.8 million. Revaluation of company assets, improved management and accounting practices, and development of a sound strategic plan contributed to the company's success in securing financing to meet its investment needs.

Another key ingredient to success was the leadership of the general manager, a dynamic individual with a clearly articulated vision and the management acumen to achieve it. In 1996, under his leadership, the Trade and Credit Bank, one of Hungary's largest commercial banks, signed a HUF 829 million line of credit with Debrecen Water Works, with a guarantee provided by the European Investment Bank. The company applied this financing, combined with revenues from increased tariffs and grant funds from a variety of international and Hungarian sources, to implement an investment program of extending and improving its sewer and wastewater infrastructure base.

In 1999, the Debrecen city council placed control of Debrecen Water Works under a new company formed to manage a number of the city's assets, including public transportation and communications. This new company, Debrecen Asset Managing Shareholding Company, was established as a public share company with all shares owned by the city government.

In June 1999, the asset management company brought on a new general manager to Debrecen Water Works. Under his leadership, an assessment was undertaken to formulate the company's vision for the future. The assessment found that the utility had largely met the targets in its 1996–2000 strategic plan and had made considerable improvements in profitability and cost-effectiveness.

Nevertheless, the assessment found that there was still a significant need to address long-term financial sustainability by streamlining the organization and improving productivity. One issue that needed to be addressed was that the corporate organization remained largely unchanged from that of its pre-1995 predecessor. The three-person senior management team—chief executive officer, director of engineering, and financial director—remained in place, with the departments and groups below them. This vertical organization, combined with a management model based on centralized decision-making, tended to inhibit the flow of information throughout the company.

Additionally, productivity remained a concern. Most operational functions were carried out by in-house staff, with little consideration of potential improvements that could be made through outsourcing specific needs or bringing in specialized expertise from the outside companies. With the exception of a few ancillary services, such as cleaning and legal services, the potential for efficiency improvements through service contracting had been largely overlooked. Although limited reductions in full-time staff had been made (largely through attrition) between 1995 and 1999, reductions were not based on an analysis of skill and expertise requirements.

A strategic plan for 2000 to 2005 was drawn up in response to the assessment. With approval of the city council, the company then embarked on the rationalization and improvement of the organizational and operational structures provided in the plan, including the following measures:

- Former ancillary activities in the areas of construction management, mechanical plant management, and transportation were severed from the organization, and two limited liability companies were formed to implement these tasks. Additional functions were assumed by independent contractors under highly directed service contracts (including energy management, equipment inspection, industrial and environmental safety, reading of the water meters, billing, and preparation and delivery of invoices).

- A management information system was employed to more closely integrate business and financial records.
- Management organization was changed to provide for three new chief engineering positions in the areas of water supply, sewer and wastewater treatment, and development.
- The size of the staff was adjusted to fit the new business management and integrated management system. As a result of reorganization, total staff was reduced by 21 percent, from 542 in 1999 to 426 by the end of 2000. To the greatest extent possible, terminations were conducted based on mutual consent between the employees and the company. Terminated employees were provided with severance pay.
- Additional employee benefits were provided to the remaining employees to reflect the expected increases in productivity that resulted from the restructuring of the company.

The major staff reduction in 2000 was largely a one-time event. During the period of 2001 to 2004, staff terminations have averaged 28.5 per year, primarily through attrition.

In addition to these internal company changes, modifications to the tariff structure for commercial customers were approved by the city council in late 1999 to more accurately reflect the incremental costs of servicing this sector of the customer base. Commercial water supply fees were reduced to the level of residential water supply fees, while the fees for commercial sewer services were increased to reflect the fact that management and treatment of sewage produced by commercial customers is more difficult and costly than that of residential customers.

6.2.2 Summary of Performance Improvements

The results of the transformation measures put into place by Debrecen Water Works resulted in impressive improvements in the company's performance, summarized in Table 6.1.

From 1995 to 2001, the company's revenues from sales increased from HUF 1.2 billion to HUF 3.1 billion, despite a decrease in water sales of 13.8 percent during this period. When the company was established in 1995, pre-tax earnings were at a net loss of HUF 22 million. Subsequently, in 1996, Debrecen Water Works achieved a moderate pre-tax profit of HUF 23 million. Pre-tax earnings rose every year from 1996 to 1999, at an average rate of 125.1 percent. During the second phase of transformation period of 1999 to 2001, pre-tax earnings increased at an average annual rate of 66.4 percent.

As a result of the sewage improvement program implemented by the Debrecen Water Works, the sewer network was expanded by 37 percent, resulting in an increase in direct sewerage coverage from 33.9 percent to 45.8 percent of the company's water service base. This included an increase in residential sewer connections from 76.8 percent to 85.7 percent. In addition, company's wastewater treatment facilities underwent the substantial upgrading required to meet more stringent environmental requirements, and wastewater treatment capacity was increased from 40,000 to 60,000 cubic meters per day.

TABLE 6.1. OBSERVED PERFORMANCE CHANGES^a

Performance Indicator	Pre-Transformation (1995)	Post-Transformation (2001)
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	Limited customer database	Service plan for customer groups (residential, institutional, and commercial). In 1999, surveys of institutional customers were initiated to provide information for advanced planning
Number of registered customer complaints/ Number of complaints considered justified	800/80	1100/100
% of population served with drinking water	99.2	99.9
Number of drinking water connections (thousands)	27.0	29.0
Compliance with Applicable Government Policies and Standards:		
Potable water standards compliance ^b	N/A	Bacteria: 3.8% unsatisfactory Chemical: 1.2% unsatisfactory (2002)
Environmental compliance ^c	Sewer fines paid: HUF 661,000	Sewer fines paid: HUF 4,531,000
Technical Capacity:		
General infrastructure condition	559 km of water supply lines; 267 km of sewer lines	594 km of water supply lines; 367.2 km of sewer lines
Direct sewerage coverage (%)	33.9	45.8
Unaccounted for water (%)	Not available	19.5
Management:		
Employees per 1000 drinking water connections	23.4	12.6
Implementation of transparent management/administrative structure and policies	Chaotic, due to management turnover	Transparent structure and policies in place
Financial:		
Annual revenue (million HUF)	1202.2	3101.1
Annual operating costs (million HUF)	2506.0	2968.6
Annual operating costs/annual operating revenues (%)	208.4	95.7
Pre-tax earnings (million HUF)	-22.1	490.7
Liabilities/assets (%)	98.4	71.8
Collection ratio (%)	94.0	98.2
Implementation of multiyear financial forecasting	Not implemented	5-year strategic plans developed
Ability to mobilize private capital	Poor	Approved commercial line of credit for capital investments

^a Currency exchange rates: 1 US dollar = 136.68 Hungarian forints (1/1/96); 1 US dollar = 281.15 Hungarian forints (1/1/01). (Source: FX Converter, <http://www.oanda.com>)

^b According to Debrecen Water Works, compliance figures for 2004 are more representative of performance due to changes in the water supply system: bacteriological: 0.35% unsatisfactory; chemical: 0.0% unsatisfactory.

^c Changes in requirements between 1995 and 2002 render year-to-year comparisons meaningless.

6.2.3 Governance

Debrecen Water Works is an autonomous public stock company, with 100 percent of its shares owned by the City of Debrecen. The company owns all assets of the city's water and sanitation system. It is managed by an independent board of directors and a supervisory board. The responsibilities of the board of directors include the internal approval of annual business plans, codes of practice, annual report, and preparation of comments on tariff revisions proposed by the city council.

The city government retains control over approval of the company's annual report, proposed capital investments that deviate from the strategic plan, non-cash capital contributions, loans exceeding HUF 100 million, and real estate transactions exceeding HUF 20 million.

6.2.4 Regulatory/Oversight Framework

The city government is charged with the authority to establish water and sewer tariffs and fees. As there is no distinct administrative body within the government to carry out this authority, tariff decisions are made by the city council.

Environmental quality and potable water standards are regulated by the Environment and Water Management Ministries. Significant changes were made in the domestic regulation of water protection between 2000 and 2002 to harmonize Hungarian law with requirements of the European Union (EU), as a condition of the accession of Hungary into the EU.

6.2.5 Capital Finance

During the period of 1995 to 2001, the utility invested a total of about HUF 9.1 billion (\$50 million) into capital improvements. While grants and subsidies comprised about 42 percent of this amount (including EU and bilateral donor sources and national and city government sources), commercial lending was an important finance source. In 1996, the Trade and Credit Bank signed a HUF 829 million line of credit with Debrecen Water Works. A repayment guarantee was provided by the European Investment Bank. A crucial condition of the agreement was that the financial management remain under the control of the company rather than the city government.

The company continues to seek out innovative ways to tap private capital markets. For example, in November 2000, the company took one of its largest industrial customers out of the collateral base of earlier loans and assigned revenues received from the customer to a new HUF 300 million commercial loan for the rehabilitation of the Debrecen drinking water supply system.

6.3 ANALYSIS OF THE TRANSFORMATION

6.3.1 Success

The ability of Debrecen Water Works to transform from a state of net revenue loss and lack of cost recovery to one with a sound balance sheet, to secure financing for its wastewater network and treatment facilities, and to do so during a period of declining demand for water supply constitutes a true success. These achievements are particularly notable given the fact that the transformation of the utility took place during a time of difficult political and economic transition of the country to a market economy.

6.3.2 Key Elements of the Transformation Process

External factors as drivers of transformation: The transformation of Debrecen Water Works was largely imposed on the utility as a result of a variety of external political and economic factors. The drastic reduction in government subsidies between the years 1990 and 1994, decreased water consumption and resulting low utilization rate of the city's water infrastructure, and increasingly stringent environmental regulations forced the city government and utility management to make difficult and often controversial decisions.

A sound legal framework: Establishment of Debrecen Water Works as an autonomous public share company required a clear and effective legal framework. Delegation of authority from the national government to municipal governments, in such areas as tariff establishment and assignment of public assets ownership were essential preconditions to the transformation process.

Strong leadership: The two general managers who guided the utility through their respective phases of the transformation were both strong leaders who were willing to take risks to achieve clear objectives and had the management and leadership skills to mobilize support for their initiatives.

Grant financing and subsidies: While Debrecen Water Works has been successful in accessing private capital, it is important to note that 42 percent of the funds for its investments over the past ten years have come from grants and subsidies from international and Hungarian sources. The company continues to aggressively seek grant funding as a component of its capital budgeting.

Streamlined decision making: Organization of the utility follows a management style based on decentralized operational decision-making. Senior managers provide overall direction to the line managers who, in turn, are empowered to make operational decisions consistent with this direction, but they are held accountable for reporting progress and problems to management.

Multi-year strategic planning: The five-year strategic plan sets a clear course for senior managers, provides the city government with a baseline from which progress can be monitored, and helps to assure prospective lenders that proposed investments are truly supportive of the utility's business objectives. The targets established in the plan, such as achieving a two percent return on assets, instill discipline in the organization to continue to focus on these objectives.

Insulation of business decisions from the political process: While the city government still has an ownership stake in the utility (as a 100 percent shareholder), Debrecen Water Works was structured to provide a large degree of management autonomy. Key decisions in areas such as personnel, operations, and investments (except for exceptionally large investments) are in the hands of the general manager.

6.3.3 Sustainability of the Transformation

Debrecen Water Works appears to be on a path to long-term financial sustainability. The measures taken by Debrecen Water Works since 1995 have resulted in a dramatic turnaround of the company, from a negative after-tax income during its first year to increasing profitability each subsequent year. The company appears to be on a sound financial footing, has developed a solid credit history, and has made investments that have increased its productivity and the net value of its assets. In addition, the fact that long-term sustainability was a major driver for recent organizational and personnel changes indicates senior management's commitment to long-term sustainability.

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7.0 COLOMBIA: AGUAS DE CARTAGENA

7.1 INTRODUCTION

Cartagena was the first municipality in Colombia to transform its water service under a new legal framework put in place in the early 1990s. The Cartagena Waterworks (*Aguas de Cartagena*, or ACUACAR) provides water and wastewater services to the 900,000 residents of the District of Cartagena (referred to in this case study as “the District”). ACUACAR was established in 1995 as a public-private mixed capital company (with 50 percent of shares owned by the District, 44.8 percent by a private company, *Aguas de Barcelona* [AGBAR], and the remainder by local private shareholders). Of its original capitalization of around \$4 million, some \$2.4 million came from AGBAR, with the remaining capital supplied by other private and public sources.

As the provider of water and sewerage services for Cartagena, ACUACAR replaced a public service business (*Empresas públicas distritales*, or EPD) that was liquidated in the mid-1990s. The World Bank characterized the EPD as “an overstuffed and extremely inefficient public utility, which suffered from continually increasing financial problems.”²⁹ Others report that the undercapitalized EPD failed even to cover its operating costs and was subject to political interference in its investment decisions.

ACUACAR operates under a form of operation and management contract with the District. Under this arrangement, ACUACAR is responsible for operating and managing the utility in return for a management fee calculated as a percentage of revenue. Yet at the same time, the contract divides responsibility for capital expenditures between the company and the District. Under this arrangement, ACUACAR must invest in improvements to the current system, while the District is responsible for extending and expanding the scope of the system. At the same time, ACUACAR has the right to use existing and future assets at no cost during the contract life.

Since its establishment, ACUACAR has focused management attention on setting the utility on a sound financial footing and operating it in accordance with business principles. ACUACAR’s management initiatives, coupled with substantial loans from international financial institutions (IFIs), have led to significant service improvements.

7.2 DESCRIPTION OF THE TRANSFORMATION

7.2.1 Summary of the Transformation Process

A new legal framework embodied in the 1986 Decentralization Law and the 1994 Public Services Law set the stage for the transformation. The World Bank provided ongoing advice and encouragement to local elected officials in effecting this change³⁰. The immediate outcome of the transformation, however, was inadequate water service resulting from the EPD’s inefficiencies and underinvestment. In the early 1990s, many residents had no water connections, while those who did suffered from frequent water shortages. ACUACAR officials characterize conditions at that time as a “crisis.” Citizens demanded change.

²⁹ World Bank, Project Appraisal Document (PAD) for the “Cartegena Water Supply, Sewerage and Environmental Management Project,” p. 4.

³⁰ The World Bank described its early role in the process of reforming the water sector in Cartagena as one of “promoting ideas, providing a framework for considering different [private sector participation] options, extending technical assistance, convincing political decision makers to support worthwhile institutional changes, acting as an important catalyst to accelerate process implementation, and serving as a mediator in the negotiations.” *Ibid.*, p. 14.

Frustrated with the poor performance of the EPD, the mayor of Cartagena decided, in 1994, to liquidate that entity and create a new public-private mixed capital enterprise. Through an international bidding process the District selected AGBAR. Parties agreed to the formation of a mixed-capital company, ACUACAR. The outgoing mayor signed the contract for ACUACAR on December 30, 1994, his last day in office.

The incoming mayor had actively campaigned against the restructuring initiative. With World Bank encouragement, however, he contented himself with renegotiating the arrangement rather than abandoning it altogether. In June 1995, he signed a 26-year operation and management contract with ACUACAR. Under the renegotiated agreement, the municipality's ownership share in the company increased from the 10 percent originally envisioned to 50 percent.

This renegotiation, however, did not end conflict. The arrangement had been strongly opposed by labor unions and other groups. When the contract with ACUACAR became effective, all EPD staff were made redundant and, although they were invited to reapply for their former jobs, protests erupted. ACUACAR's new management team required military protection to enter their new offices. (Eventually, the company rehired 270 former employees from the original staff of 1800.)

Following its creation, ACUACAR undertook a series of measures to improve service and put the company on a sound business footing. The company undertook major cost reduction initiatives, including a "breaks and background estimates" approach to identifying unaccounted for water, implementation of measures to more quickly respond to pipe breaks, and eliminating nonessential staff. The company institutionalized a performance indicator system. It adopted an aggressive commercial policy, including the practices of metering customers, disconnecting service from those who did not pay, and pinpointing and terminating illegal connections.

During this period, ACUACAR was able to provide justification and win approval from the government for annual requests to increase its tariff levels. From a base level equivalent to \$0.46 per cubic meter in 1996, approved tariff levels steadily rose between three and ten percent a year to reach \$0.59 per cubic meter in 2001.

In 1999, the World Bank signed a loan for \$85 million with the District, backed with a sovereign guarantee from the Government of Colombia. While this loan was primarily directed toward infrastructure investment, it also provided for improved administration of existing infrastructure (e.g., control instrumentation) and sectorization and optimization of the distribution networks, leading to a better understanding of system dynamics.

In 1998, the District awarded AGBAR a separate contract to manage its capital investments. Due to the importance of IFI funding in improving service provision, a project implementation unit established by the World Bank and the Inter-American Development Bank (IADB) assumed an important role in management. This unit operated under the joint auspices of the District and ACUACAR's board of directors. These organizations established solid working relationships to harmonize their respective investments for improving the existing system (ACUACAR's responsibility) and expand it (the District's responsibility), with the IFIs providing the majority of financial resources.

7.2.2 Summary of Performance Improvements

As shown in Table 7.1, the management reforms implemented by ACUACAR, coupled with significant capital investment largely financed through IFI loans to the District of Cartagena, led to impressive improvements in utility performance. In the decade following the transformation, the number of clients served increased by 72 percent, from about 84,000 in 1994 to more than 145,000 in 2004. Likewise, water production capacity and service continuity sharply increased.

TABLE 7.1 OBSERVED PERFORMANCE CHANGES^a

Performance Indicator	Pre-Transformation (1994)	Post-Transformation (2001) ^b
Customer & Community Characteristics:		
Diversification/stratification of customer marketing and service	—	Citizen surveys used to understand community needs
Quality of customer relations	—	Community outreach department established
% of population served (water) ^c	68	91
% of population service (wastewater) ^c	56	72
Number of clients (thousands)	84,143	117,194
Compliance with Applicable Government Policies and Standards:		
Management systems for quality and environmental management	—	Quality Control System certified (1998) ^d
Technical Capacity:		
Water production capacity (m ³ /day)	160,000	260–270,000
Metered connections (%)	30	99
Unaccounted for water (%)	60	41
Time to respond to pipe breaks (days)	6	1.3 (1998)
Service continuity (%) ^e	60	92 (1998)
Management:		
Number of employees	1300	280 (1998)
Employees per 1000 connections	15	4 (1998)
Financial:		
Annual revenue (current [1999] US\$ million)	15.1 (1995)	34.7 (1998)
Annual operating margin (%)	6 (1995)	15 (1998)
Return on equity (%)	16 (1995)	17 (1998)
Accounts receivable (days) (not including current bills)	216	88 (1998)
Ability to mobilize private capital	No	Yes

^a Currency exchange rates: 1 US Dollar = 987.0 Colombian pesos (1/1/96); 1 US Dollar = 2,240.0 Colombian pesos (1/1/01). (Source: FX Converter, <http://www.oanda.com>)

^b Unless otherwise indicated.

^c These proportions have been criticized as being "based on a gross underestimation of the target population, because they ignore those citizens who reside outside the legally-defined 'urbanized' area of the municipality." Nickson, as cited in University of Greenwich PSIRU, "Dogmatic Development: Privatisation and Conditionalities in Six Countries," 2004, p. 18.

^d ACUACAR website, February 2005.

^e Total hours of service of clients surveyed / (24 hours × number of clients). World Bank PAD, p. 68.

Sources (unless otherwise noted): 1994, 2001: World Bank, "Energy & Water for Sustainable Living," pp. 56-57; and PAD, pp. 68 ff. 2004: ACUACAR Website.

Compliance with environmental standards also improved. ACUACAR reports that, in 1998, it was the first public service business in Latin America with a quality management system to receive ISO 9001 certification. The company also adopted an environmental management system in accordance with ISO 14001.

At the same time that quality was improving, ACUACAR began to improve the efficiency of service provision. Over a four-year period, the average time required to respond to pipe breaks dropped from 6 to 1.3 days. Various management initiatives (including those mentioned earlier) helped to put the enterprise on a more solid commercial footing. The company achieved improvements even while reducing staff from fifteen employees per 1000 connections in 1994 to four per 1000 connections in 1998.

7.2.3 Governance

The shareholders in ACUACAR are shown in the following table:

SHAREHOLDERS	PERCENTAGE
District of Cartagena	50.0 %
Water and Sewerage Company of Barcelona (<i>Grupo AGBAR</i>) (operator)	45.9 %
Private investors	4.1 %
TOTAL	100.0 %

The District of Cartagena employs an audit supervision team to annually audit ACUACAR. When performance targets are not met, the District can impose penalties, as stipulated in the contract.

Elected community committees play active roles in promoting good governance. *Juntas de acción comunal* (JAC) operate at the barrio level. Three *juntas administradores locales* (JALs) cover the three major geographic areas of the District. The JALs play roles in prioritizing capital investments. Customers represented by the committees have signed service agreements with ACUACAR. Relations with committees and customers are facilitated by the District's Office of Community Participation and by ACUACAR's Department of Community Outreach. The 1999 World Bank loan package included provisions for training community leaders and personnel in these units.

Colombia's Law on Participation provides for citizen entities, known as *veedurías*, to exercise social control over government units and activities. The 1999 World Bank loan envisioned such *veedurías* to be the main link with the bank's project implementation unit and ACUACAR for the purpose of addressing citizen complaints. In addition, the non-profit public advocacy and anticorruption group, Honest Cartagena Corporation, has actively played a watchdog role in Cartagena.

7.2.4 Regulatory/Oversight Framework

The 1994 Public Services Law 142 established the legal and regulatory framework for the sector under which private operators or community organizations could participate in public utility management and ownership. The law emphasized the efficiency of service provision through the introduction of competition and private sector participation. The law also mandates the use of a tariff setting methodology based on recovery of full economic cost of service. The *Comisión reguladora del agua* has national responsibility for promoting competition among service providers, defines tariff setting methodologies, and establishes quality of service standards. The Superintendency of Public Enterprises is responsible for monitoring utility operations, establishing uniform accounting systems, administering subsidies, and overseeing the general administration of public service companies in all sectors. Boards of municipal utilities have the ultimate power to set tariffs but are obliged to do so within the regulatory framework set down by the Water Regulatory Commission.

7.2.5 Capital Finance

The creation of ACUACAR and the ongoing support of the World Bank and IADB in Cartagena have led to substantial public capital investment and additional private investment. Cartagena residents have benefited from World Bank and IADB loan programs that are aimed primarily at capital investment as these programs have mobilized significant public resources.

However, private capital to support new investments has lagged public sources. For example, in the 1999 World Bank loan package of \$117.2 million, 96 percent (\$112.6 million) came from public sources: the World Bank (\$85 million), the national government (\$20 million), and the District of Cartagena (\$7.6 million). Only four percent (\$4.6 million) came from the mixed company ACUACAR.

On the other hand, ACUACAR has invested substantial resources in the existing system, in keeping with its responsibilities and the desire to operate the system efficiently and at a profit. The company has taken local loans for this purpose. In 1999, the World Bank reported that during the previous three years, the mixed-capital company had invested some \$27 million in the existing system.

7.3 ANALYSIS OF THE TRANSFORMATION

7.3.1 Success

From the perspective of improved service provision, the institutional transformation and the public loans have had a very positive impact. The transformation in ownership has led to a more efficient provision of services. The IFI loans to the District have allowed for considerable extension and expansion of the system.

7.3.2 Key Features of the Transformation Process

Several elements contributed to the success of the transformation:

- **An adequate legal/regulatory framework:** This framework provided for the transformation and creation of ACUACAR. Likewise, legal provisions that allow (under proscribed conditions) a creditor to directly access an income stream of the borrower without its approval via a “revenue intercept” mechanism made loans to the District more viable. The normative framework similarly protects service providers and investors against excessive political influence. The tariff methodology prescribed under Law 142 also requires tariffs be set at levels that allow the utility to recover full economic costs of service delivery.
- **Political support:** Local and nationally-elected officials made the decision to liquidate the EPD, bid out a management contract, create ACUACAR, and undertake loans from IFIs. While some political forces have opposed the reform, supporters of the reorganization generally have carried the day.
- **Sustained support from IFIs:** The support offered by the World Bank and the IADB, both in terms of advice, technical assistance (e.g., in implementing a public bid process), and financial resources, resulted in a generally successful transformation and subsequent improvements to the water system.
- **Establishment of a mixed-capital company:** The mix of public and private ownership of ACUACAR introduced the profit motive into Cartagena’s water system, thereby providing motivation for efficiency, while tempering this motivation with the concern of the majority shareholder (the District itself) in the broader interests of the community.
- **Social considerations built into the terms of IFI loans:** Loans have provided for the expansion of the infrastructure network into new areas in order to serve poor families that were previously without basic services.
- **Mechanisms for citizen participation:** The use of customer surveys and community committees, as well as the active presence of a citizen watchdog group, have led to improved governance.

7.3.3 Sustainability of the Transformation

The transformation and subsequent lending activity appear to have had, at best, a mixed effect on the creditworthiness of the District of Cartagena, the entity most concerned with borrowing for capital investment. In fact, the immediate impact of the transformation was negative. From 1995 to 1996, the District’s personnel costs nearly doubled as it struggled to absorb about 1500 former public water and

sanitation employees who were not transferred to ACUACAR. The District took on high levels of debt during that period to cover operational deficits.

Further, the 1999 World Bank loan did not have a significant impact on the District's underlying creditworthiness. With a sovereign guarantee from the Government of Colombia, the World Bank had little incentive to strengthen the district's creditworthiness. While the World Bank conducted financial management assessments of both ACUACAR and the District, it did not require an independent evaluation of the District's credit quality by an international rating agency prior to signing the contract.

Offsetting this situation, the entity with a secondary role in capital investment, ACUACAR, has been able to develop a positive credit history on its own merits with few if any external enhancements. This development holds promise for the long-term sustainability of the utility itself.

The management and investment model for the utility, whereby the District is responsible for expanding the infrastructure while the mixed-capital company invests in improving the existing system, raises potential concerns regarding sustainability. While investments between these two entities appear to have been reasonably coordinated to date, there is clearly a potential for sub-optimal capital investment if this coordination diminishes over time. This risk will increase when lending from the international community eventually ceases.

Another set of concerns regarding the Cartagena experience relates to possible conflicts of interest and improper sharing of risk. The District of Cartagena both oversees the provision of water services and receives dividend payments from service provision. This dual role becomes more of a concern the less other regulators fulfill their responsibilities. Another possible conflict of interest stems from the fact that AGBAR, a major shareholder, also receives money from management fees. These rose from 2.94 percent of gross income in 1995 to 4.25 percent in 1999. Critics correctly point out that, "under this complex arrangement, the private sector partner will carry out the functions normally found in a French-style concession contract, but with protection from the financial risks inherent in such an arrangement."³¹

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8.0 MEXICO: MUNICIPALITY OF TLALNEPANTLA DE BAZ

8.1 INTRODUCTION

The *Organismo Publico Descentralizado para la prestacion de los servicios de agua potable, alcantarillado y saneamiento del Municipio de Tlalnepantla* (OPDM) was created in 1991 as a decentralized agency of the Municipality of Tlalnepantla. The utility services one of the most economically important municipalities in the State of Mexico, Tlalnepantla de Baz. OPDM is fully owned by the municipality. Relying upon a staff of about 1,000 employees, the utility is responsible for the provision of potable water distribution and sewerage services to Tlalnepantla's 862,000 residents.

Tlalnepantla is located near the metropolitan area of Mexico City. As the most industrialized municipality in Mexico, it accounts for over 20 percent of the State of Mexico's gross domestic product. Tlalnepantla's manufacturing production in 15 industrial zones exceeds \$3.5 billion annually. Tlalnepantla has been a national leader in tax collection, financial and fiscal management, and achievement of ISO 9001 quality certification, which helped to attract investors to its municipal water utility. When investors began discussions with OPDM, Tlalnepantla's proportion of own-source revenues to total revenues was 54.7 percent—a high figure, considering that most municipalities in Mexico were critically dependent on transfers from the federal and state governments.

OPDM and the Municipality of Tlalnepantla de Baz made national history when, in order to finance new infrastructure, they finalized the first ever municipal bond offering in Mexico that was not secured by a federal guarantee or assigned federal transfers³². The arrangement was also a milestone for its international financiers, the International Finance Corporation and Dexia Credit Local Agency (Dexia Bank). This represented the IFC's first direct municipal finance deal and led Dexia to establish a local subsidiary in Mexico. This arrangement was a response to constraints that prohibited municipalities from borrowing foreign currency.

OPDM's ability to secure this new financing independent of the federal government centered on several factors that created an enabling framework for the utility to proceed. These include legal reform, financial incentives provided by the National Water Agency (NWA), and dedicated donor assistance. In 2003, OPDM secured \$9.6 million to finance the construction and operation of a wastewater treatment plant and the survey and rehabilitation of a water distribution network.

Through the process of securing financing, OPDM improved aspects of its financial management. Ultimately, OPDM presents a case wherein dedicated attempts at legal reform and creative financing arrangements can significantly affect a utility's financial standing and influence performance. In the long term, this may lead to service improvements that coincide with infrastructure improvements, as well as advances in fiscal discipline.

8.2 DESCRIPTION OF THE TRANSFORMATION

8.2.1 Summary of the Transformation Process

OPDM's success in acquiring financing independent of the national government was possible because of a lengthy process that altered Mexico's institutional and legal environment. With the assistance of the

³² This bond offering is dependent on the full faith and credit of the local municipality, with no federal guarantee or assigned federal transfers.

international community, this environment shifted in favor of municipalities' capacity to issue debt in order to finance infrastructure. Key milestones of this process included:

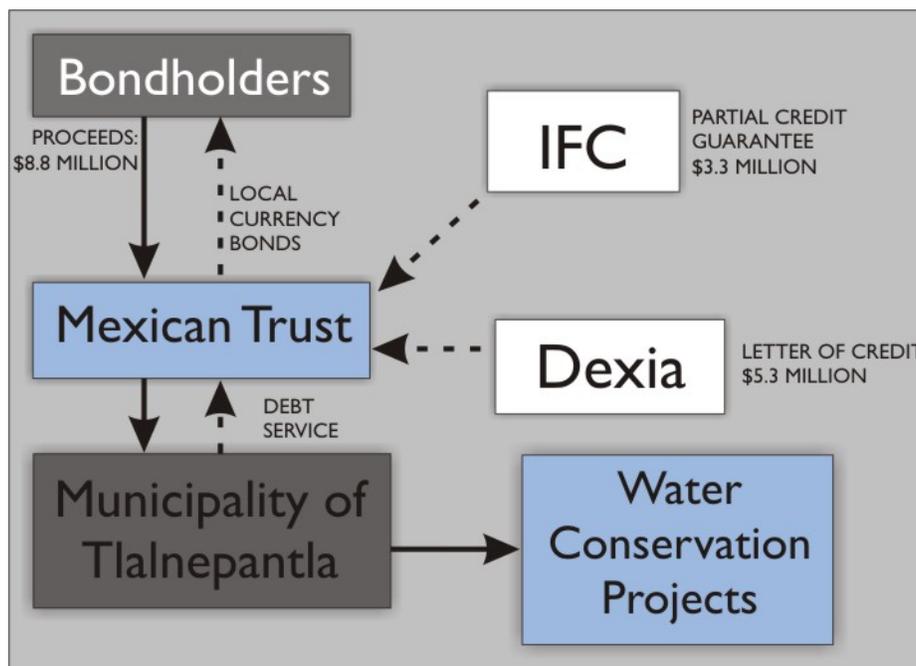
Legal reform to increase financial autonomy of subnational governments: In April 2000, a new national law was enacted that enabled subnational governments to issue debt based on their own financial practices. The new law provided a mechanism to diminish the dependence of subnational governments on the federal government. It also allowed for the emergence of an incipient subnational credit market. This provided an incentive and an opportunity for OPDM to explore novel financing options.

Further reform was achieved in July 2001, when subnational governments were empowered to issue peso denominated bonds. This change prompted several state and local governments to consider issuing bonds instead of simply applying for loans.

Incentive from the NWA: The NWA launched an initiative that also had a significant impact on OPDM's financial standing and its ability to acquire further financing. The NWA offered to forgive old debt to municipal and state water agencies in exchange for investments in environmental improvement activities, to be carried out by subnational governments and agencies. The Municipality of Tlalnepantla de Baz accepted this offer, planning to utilize a new IFC-Dexia financing scheme to develop a water conservation program. This move significantly improved the municipality's balance sheet.

Creative financing structure: The new national law did not allow subnational governments to borrow from foreign banks or multilateral organizations. To address this issue, the IFC and Dexia devised a trust fund arrangement, illustrated in Figure 8.1. Under this arrangement, the trust fund would sit between the local government and the utility, and would serve as the recipient of funds from donors, as well as fees from water users. The trust would issue stock (*certificados bursatiles*) in the local capital market. Whereas water fees were committed to the trust fund, property taxes were not included as revenues to support the trust fund commitment. Since the trust fund receives tariff revenues, it has the power to enforce service improvement provisions written into its charter and agreement with OPDM.

FIGURE 8.1 OPDM FINANCE APPROACH UNDER TRUST FUND



Reference: Sumeet Thakur, International Finance Corporation

The trust fund design created a structure through which user fees would flow to the utility. Cash flows into the trust were pledged against debt, which the trust raised. Tlalnepantla assumed this debt through bonds issued on local capital markets. Thus, the trust served as a vehicle for mobilizing local capital. Debt raised by the trust was repaid from flows into it, while the proceeds of the borrowing were used for project finance. Finally, a third party guarantee backed this effort.

After about two and a half years of developing the financial transaction, Dexia established the trust fund. The municipality issued bonds in early 2003. By allowing a municipality to access local capital markets at affordable prices and creating a new asset class for the Mexican capital markets, this represented a groundbreaking transaction. The arrangement also broke new ground for the IFC by negotiating directly with a municipal water body in local currency through a regional bank³³.

8.2.2 Summary of Performance Improvement

Although processes of the trust fund development helped OPDM to realize substantial financial improvement between 2000 and 2003, recent reviews suggest that OPDM did not make a transformation in service delivery. In terms of coverage, OPDM was performing relatively well from the onset. In 2003, according to Standard & Poor's³⁴, OPDM was providing water services to about 98 percent of all urban residential and commercial dwellings. However, water losses were excessive. In the same year, it was estimated that 55 percent of the total water distributed by the OPDM was lost through leakages. Moody's reiterated this in 2004, when it deemed Tlalnepantla's water loss rates a "serious problem."

In addition to its lethargy in acting to reduce water losses, OPDM was slow to initiate infrastructure improvements after the trust fund had been established. Nine months after the municipal bonds were sold and financial resources were in hand, OPDM had not begun the process of implementing its investment program. Both the IFC and Dexia approached the municipality at this time and offered their assistance in the process.

Nonetheless, OPDM did begin to address certain weaknesses in its financial management, as highlighted through the process of arranging financing through the trust fund. OPDM's efforts resulted in significant improvements in the utility's financial performance between the period between 2000 to 2003. Table 5.1 offers a summary of OPDM financial history over the period of 1997 to 2002. Improvements include:

- OPDM implemented a new system of billing and collection. According to Standard and Poor's, poor financial management of the governing municipal administration during the period of 1997–1999 led to weak controls between the administration and employees who were in charge of collecting water fees. Improvements begun in 2000 were due in large part to improvement of these controls, in conjunction with a reduction of expenditures and an increase in tariffs.
- In 2003, OPDM implemented a new tariff schedule that began to lower the generalized subsidy to all clients in previous schedules. This schedule lowered the direct subsidy to poor households and increased the fees paid by commercial and industrial uses by a rate of 2 to 3 percent above the rate of annual inflation. OPDM made plans to progressively increase water tariffs towards a more realistic fee schedule.
- In addition, OPDM embarked upon a process for increasing collection by updating its database. It was estimated that water fees would increase by 50 percent when changes to the residential clients database were completed.

³³ Peter Woicke, Executive Vice President of IFC, stated, "This is introducing what we hope will be a promising new model of finance, whereby municipalities secure financing entirely through their own revenues rather than being dependent on the federal government, and they can do so in a way that allows mitigation of their foreign exchange risk." (<http://ifcn001.worldbank.org/ifcext/pressroom/ifcpressroom.nsf>)

³⁴ International bond rating agencies have an interest because international financial institutions are invested in the trust fund.

TABLE 8.1 HISTORICAL FINANCIAL HISTORY OF OPDM, IN THOUSANDS OF MEXICAN PESOS^a

Item	1997	1998	1999	2000	2001	2002
Gross revenues	255,592	287,052	248,292	314,398	384,099	427,850
Gross profits	(51,801)	(32,495)	(119,065)	4,774	45,282	67,760
Interest payments (and rent costs)	0.0	0.0	0.0	0.0	0.0	0.0
Net profits	(28,762)	(19,615)	(97,588)	4,327	6,342	25,177
Accounts payables	64,185	71,875	114,499	118,864	138,915	109,335
Total debt	19,768	14,721	9,674	4,627	0.0	0.0
Operating funds	(46,071)	(26,490)	(117,337)	4,774	45,282	67,760
Profits/sales	-20.27 %	-11.32 %	-47.95 %	1.52 %	11.79 %	15.84 %
Operating funds/debt	-227.31 %	-102.78 %	-744.72 %	57.05 %	0.0 %	0.0 %
Debt/capital	39.73 %	30.76 %	19.34 %	28.82 %	0.0 %	0.0 %

^a Currency exchange rates: 1 US Dollar = 7.88 Mexican pesos (1/1/97); 1 US Dollar = 9.15 Mexican pesos (1/1/02). (Source: FX Converter, <http://www.oanda.com>)

Source: *Análisis. Organismo de Agua Potable, Alcantarillado, y Saneamiento de Tlalnepantla de Baz (OPDM)*. Standard & Poor's, Agosto de 2003.

In spite of advances in financial management between 2000 and 2003, Tlalnepantla reached a “technical” default to the performance requirements agreed with Dexia Bank in the following year. Driven by a rapid increase in staffing, the municipality incurred significant increases in operating expenditures. Tlalnepantla had to borrow capital for short periods of time at high interest rates in order to pay a greater number of employees. Because the municipality violated the Dexia performance requirement ceiling of 6.5 percent of debt over total operating expenditures, Dexia froze the funds deposited monthly in the trust fund. This resulted in OPDM being unable to access the funds to cover operating expenditures, purchase water from the NWA, and carry out basic maintenance of existing infrastructure³⁵.

Fortunately, the OPDM had a reserve fund to access while Dexia and the municipality renegotiated an agreement to enable the municipality to meet the original financial performance requirements. Dexia proposed a series of conditions to lift the freeze in the trust fund. These conditions included lowering the municipality’s employment levels, reviewing the expenditure structure, improving financial management, and moderating current operating expenditures. The municipality changed treasurers and has since taken measures to bring its ratio of debt to operating expenditures to 6.5 percent. Dexia lifted the freeze on the trust fund in early March 2005.

8.2.3 Governance

OPDM is a decentralized agency of the Municipality of Tlalnepantla de Baz. The municipality controls the OPDM’s administrative board through mayoral appointments every three years. Members of OPDM’s board of directors represent the municipality, OPDM management, and the private sector. They include OPDM’s president and the treasurer, the municipality’s president and treasurer, and figures such as presidents of the Chamber of Commerce and the Association of Industrialists from the private sector.

Given the structure of the board, the municipality has significant power and influence over major management decisions of the utility. The OPDM has “effective” autonomy in day-to-day management issues and sets tariffs which, in turn, are approved by the board of directors. The position of the municipal government, however, tends to dominate other points of view. OPDM management is further complicated by the fact that, according to Mexican law, no elected official is allowed to seek reelection. The utility’s board is therefore subject to the cycles of the Mexican political system.

³⁵ Recall that the trust fund receives and controls tariff revenues used for ongoing operation and maintenance costs.

The federal government of Mexico (GOM) has implemented a decentralization process over the past ten years. However, the term “decentralization” does not fully describe the process, which is one of concentration of revenue-generating power by the GOM and the dispersal of federal budget execution to subnational governments. Taken at face value, direct GOM expenditures of federal funds declined from 67 percent in 1990 to only 37 percent in 2001. (These expenditures consisted mainly of pension and debt obligations.) In practice, because most federal funds relegated to subnational governments are earmarked, local government discretion is considerably curtailed in allocating budgetary resources.

8.2.4 Regulatory/Oversight Framework

The OPDM is under the authority of the national water commission, *Comisión nacional del agua* (CNA) as well as the water commission of the State of Mexico, *Comisión de agua del estado de México* (CAEN). The CNA regulates the utility’s rights to treat wastewater and residual waters. Furthermore, the CNA has given rights to the OPDM to extract water. The CAEM manages and extracts the State of Mexico’s water and sells blocks of this water to the OPDM.

8.2.5 Capital Finance

The law passed in April 2000 that increased financial autonomy for subnational government was critical to OPDM’s ability to overcome the restrictions to subsidiarity and to acquire financing independent of the national government. It did so by enabling subnational governments to assume debt. The law’s requirements for determining eligibility are key to its success. Factors assessed for eligibility, as established in the law, include:

- Percentage of own-source revenues as a proportion of total revenues (Total revenues include central and state level transfers to municipal governments.);
- Size, structure, and management of expenditures, savings, investment levels, financial balances (surplus/deficits), and financial liquidity; and
- Analysis of current and potential future debt to determine whether this debt is sustainable given revenue and expenditure commitments.

Under the framework established by the law, the trust fund established by the IFC and Dexia used the proceeds from an initial stock sale to make a loan to the Municipality of Tlalnepantla and the OPDM. The municipality, in turn, pledged the OPDM’s water fees to secure the loan from the trust. Through this loan, OPDM financed its \$ 9.6 million water conservation program. Of the total, \$7 million was directed to the design and construction of a wastewater treatment plant with a capacity of 200 liters per second, with the balance supporting the rehabilitation and maintenance of the water supply network to reduce water losses. The role of the IFC was to issue a partial guarantee to the trust, for an amount not exceeding \$3 million, from IFC’s own account. Dexia, in turn, issued a letter of credit for up to \$5.3 million for the benefit of the trust’s stockholders.

8.3 ANALYSIS OF THE TRANSFORMATION

8.3.1 Success

OPDM’s success in securing trust fund financing was the culmination of a series of measures taken by the utility to improve its financial position, by the national government to provide greater financial autonomy to municipal governments, and by the IFC and Dexia partnership to establish an innovative financing mechanism. At the same time, OPDM has been less successful in transforming its internal conditions to

ensure long-term financial sustainability. However, due to the structure of the trust fund agreement, the trust fund has the leverage to force performance improvement, and OPDM has the flexibility to make whatever improvements it feels are necessary to meet performance targets. The fact that the trust fund has used its power in response to staff increases that led to increased debt ratios is a significant indication of the value of the arrangement.

8.3.2 Key Features of the Transformation Process

Key features of OPDM's experience in acquiring and utilizing finance for infrastructure improvement include:

Autonomy of utility management from political process: OPDM was established as an autonomous entity so that management decisions need not be significantly dependent upon local government or changes in the elected officials that can significantly affect the utility's performance. However, this influence remains because of the governance structure of OPDM. The trust fund is structured to reduce this influence by controlling revenues critical to OPDM operation.

Conditionalities on finance to instill fiscal discipline: The trust fund requirements that the municipality must maintain financial ratios has forced the municipality to accept a challenging set of fiscal and financial measures. The ability and willingness of the trust fund to enforce these conditions is a strong incentive for the municipality and OPDM to act responsibly and to ensure fiscal discipline.

Provision for introduction of private sector expertise and experience: In addition to the regulatory, legal and financial engineering, a salient aspect of the OPDM arrangement is the structure of public-private partnership that it supports. Through this creative model, the private sector helps to bring commercial best practices to the utility, but is not expected to invest equity. Rather, bidders vie for the right to provide a package of services over an agreed period of time, as specified in prepared bid documents. To ensure that the successful respondent is committed and serious about its bid, the implementing company is required to post a performance bond, providing the debt holders, through the trust, with assurances that the work will be performed as specified.

Improved revenue collections: A major factor in OPDM's dramatically improved financial performance between 1999 and 2002 was its implementation of a set of measures to improve its billing and collection procedures, based on an improved customer database and the implementation of more rigorous management oversight of the billing and collections process.

8.3.3 Sustainability of the Transformation

Given the developments that arose in 2004, the prospects for OPDM's financial and quality of service sustainability remain an open question. Sustainability is largely dependent upon the trust fund's continued willingness to use the leverage it has to ensure performance and upon OPDM's ability to develop and maintain a sound management approach that weathers the influences of the political cycle. With appropriate financing, debt forgiveness, and a stable client base, OPDM has some key ingredients for success that many utilities do not.

Given the realities of the Mexican institutional, legal, and fiscal decentralization structure, as well as the experience of OPDM's lethargy in implementing service improvements with this transaction, the sustainability of the measures it has taken is still uncertain.

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