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REFORMING THE WATER AND SANITATION SECTOR

CHALLENGES IN CORPORATIZING SERVICE PROVISION
THE CASE OF JORDAN

JULY 2009

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THE CASE OF JORDAN

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ACRONYMS

AWC	Aqaba Water Company
ASEZ	Aqaba Special Economic Zone
ASEZA	Aqaba Special Economic Zone Authority
GAM	Greater Amman Municipality
GDP	Gross domestic product
GPS	Global Positioning System
JD	Jordanian dinar
JVA	Jordan Valley Authority
LEMA	Suez Lyonnaise, Montgomery Watson Arabtech. Private consortium in charge of management contract in Greater Amman
LLC	Limited Liability Company
MIYAHUNA	GreaterAmman Water Company
MOU	Memorandum of understanding
MWI	Ministry of Water and Irrigation
N/A	Not available or not applicable
NRW	Nonrevenue water
O&M	Operation and maintenance
PDT	Project Development Team
PMU	Project Management Unit
PPP	Purchasing power parity
PSP	Private sector participation
TA	Technical assistance
USAID	United States Agency for International Development
WAJ	Water Authority of Jordan

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UNITS

KWH	Kilowatt-hour
Sq km	Square kilometer

CURRENCY EQUIVALENTS

(Exchange rate effective June 2009)

1 US\$ = JD 0.70

1 JD = US\$ 1.42

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PREFACE

USAID is pleased to present this case study on how the water and sanitation utilities in Aqaba and Greater Amman (Amman) were corporatized. The study is addressed to leaders in Jordan and abroad who wish to reflect on experiences of others in carrying out reform. It is part of a broader USAID initiative to analyze and disseminate practices in public water utility corporatization.

Organizational learning is an essential part of USAID's mission. The goal of this learning is not only to improve individual projects but also to make the results available to a wide audience, so as to stimulate the thinking of potential reformers and generate tentative conclusions about the elements of successful and unsuccessful reforms.

This study is neither an example of a success story nor of the most promising solutions to issues facing the sector. It is a study that illustrates both the potential and limitations of public policies and attempts to reform. Of course, these potential and limitations vary significantly from one country to another. Nevertheless, there are lessons that can be learned by decision makers from exchanging views on their experiences.

SEGURA/IP3 was the author of the case study and the consultant for Amman. Chemonics International Inc. was the consultant for Aqaba. The study draws heavily on the SEGURA/IP3 and Chemonics reports mentioned in the bibliography.

July 2009

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INTRODUCTION

“...a major motivation of institutional change could be thought of as reallocating economic opportunity.”¹

In 2000, the government of Jordan set up the Aqaba Special Economic Zone (ASEZ). The institutional changes embedded in the establishment of the Zone opened the doors for other significant changes in Jordan, some of which were to affect the water and sanitation sector.

Before the Zone was set up, central government agencies were responsible for developing and managing the port, the airport, and the utility services, including water and sanitation. The law establishing the Zone brought about a direct challenge to the status quo as it explicitly allocated this responsibility to the Aqaba Special Economic Zone Authority (ASEZA).

The opportunities opened up by the ASEZ law for entrepreneurs² in economic and political organizations in Aqaba were also perceived by many as a threat to central government organizations operating in the city. Consequently, intense negotiations were held between the parties to find ways to implement the law while protecting their respective interests. The corporatization of water and sanitation services was part of these negotiations. The negotiating parties were the Ministry of Water and Irrigation (MWI) and the Water Authority of Jordan (WAJ) on one side, and ASEZA on the other.

The Aqaba precedent had ripple effects in the water sector as it was a major factor in the corporatization of Amman services. Aqaba's services were corporatized in 2004 and Amman's in 2007.

Corporatization, in the context of this study, means creating government-owned water and sanitation companies to replace existing organizations. In Aqaba, the government set up the Aqaba Water Company (AWC) to replace a local agency from the Water Authority of Jordan (WAJ), while in Amman the government created MIYAHUNA to replace LEMA, a private company operating under a management contract with WAJ.

⁸ The study on corporatization carried out by USAID/ARD in 2006 presents a relevant definition of corporatization and its key principle. See boxes 1 and 2. The same study presents experiences of seven corporatized water utilities, including Aqaba. Others were: AQUA, Poland; COPASA, Brasil; Johannesburg Water, South Africa; National Water and Sewerage Company, Uganda; and Sidney Water, Australia.

¹ Bromley, Daniel W. *Sufficient Reason, Volitional Pragmatism and the Meaning of Economic Institutions*. Princeton University Press, 2006. p 9.

² The term entrepreneur in this study refers to individuals and group of individuals able to influence the sector's decision making processes. See North, Douglass C. *Understanding the Process of Economic Change*. Princeton University Press, 2005.

Box 1 **Corporatization - Concept**

Corporatization is a process by which a public sector service provider is transformed to one with the commercial orientation of a private company. The transformation would typically include three ring-fencing activities: (1) establishment of a distinct legal identity for the company under which the government's role is clearly identified as owner; (2) segregation of the company's assets, finances, and operations from other government operations; and (3) development of a commercial orientation and managerial independence while remaining accountable to the government or the electorate.

Source: USAID/ARD. op. cit.

Box 2 **Corporatization – Key Principle**

The guiding principle of corporatization is the intent to capture the advantages of a privately run company – including efficiency, productivity, and financial sustainability – while retaining government accountability. A successfully corporatized company will be able to demonstrate positive or improved performance results.

Source: USAID/ARD. op. cit.

The corporatization in Aqaba and Amman was a complex process. It involved high-level government officials, technical assistance, and disciplined and cooperative work among government agencies, USAID, and consultants. Often, the required negotiations were mediated by the prime minister's office and the cabinet of ministers. This study starts from the premise

that the key to understanding the process of reform is to appreciate the intentions of the entrepreneurs enacting it and their comprehension of the issues.³ Accordingly, after setting the context for the country, and for Aqaba and Amman in particular, the study describes the issues the sector faced before corporatization,

and then looks at how the process took place: the leaders, the organization, and the choices made. It concludes by reviewing the challenges ahead and the lessons learned, in the hope that they may guide policymakers and practitioners both in Jordan and abroad.

Corporatization was a complex process. Negotiations were often mediated by the prime minister's office and the cabinet of ministers.

³This approach was chosen following Bromley, op. cit. and North op. cit.



CHAPTER I

JORDAN: LITTLE WATER, NEGLECTED ECONOMIC DIMENSION

“Let us start with the political market, the most crucial market of all.”⁴

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The corporatization of water and sanitation services in Aqaba and Amman did not take place in a vacuum. It took place in a country poor in water resources and with a highly centralized public administration. It is also a country where successive governments have considered the management of water resources a primary duty. In this context, the government has experimented throughout the years with a number of water policies and organizational arrangements. These policies have, however, not always been successful. Perhaps one of their most significant shortcomings has been the lack of balance between the administrative and economic dimensions of the issues. The policies have been strongly biased toward transactions in

the political markets, and in favor of bureaucratic allocation of available resources, rather than toward economic markets, including effective water policies.

Water policies have been biased toward transactions in political markets, and bureaucratic allocation of available resources, rather than toward economic markets.

Country with a rapidly growing population

The Hashemite Kingdom of Jordan is a small country (92,300 km²) strategically located in the heart of the Middle East.⁵ It is bordered by Syria to the north, Israel and the West Bank to the west, the Red Sea to the south, Saudi Arabia to the southeast and Iraq to the east. The country has a young and rapidly

growing population. About 32 percent of its 6.2 million inhabitants in 2008 were under 14 years of age. Population growth is estimated at 2.4 percent a year. This rapid growth is the result not only of the predominantly young population and high fertility rate but also of the significant immigration flows from neighboring countries. About 80 percent of the population resides in urban areas.⁶

The per capita income is the equivalent of about \$4,700 per year. In terms of share of GDP, 86 percent is generated in the services sector, mainly government, tourism and financial services. The industrial sector generates 10 percent and the agricultural sector 4 percent. The latter uses about 65 percent of available water resources.

⁴ Liebenthal, Andres, Feinstein, Osvaldo N., and Ingram, Gregory K. Evaluation and Development. The Partnership Dimension. The World Bank, 2004, p.5. The political markets consist of the formal and informal rules needed to play the political game, together with the required enforcement mechanisms.

⁵ Unless otherwise noted, this chapter is based on two sources: The United States Central Intelligence web page on Jordan, and Haddadin, Munther J (Ed.) Water Resources in Jordan. Evolving Policies for Development, the Environment, and Conflict Resolution. Resources for the Future and RFP Press, 2006.

⁶ Towns of 5,000 inhabitants or more, as defined in the Population and Housing Census of 2004.

Highly centralized public administration

Jordan is a constitutional monarchy with executive powers vested in the king, who exercises his powers through his ministers. The ministers, in turn, exercise their power through twelve governorates, which are extensions of the central government. Each governorate is headed by a governor appointed by the king and supervised by the Ministry of Interior. The country enjoys significant political and economic stability.

Legislative power is vested in the bicameral National Assembly, consisting of a Chamber of Deputies and a Senate. The Chamber of Deputies' members are elected in direct elections while the Senate's members are appointed by the king.

Important environmental constraint

Water scarcity is a key constraint to Jordan's economic development. On a per capita basis, it has one of the lowest levels of water resources in the world. The government estimated available water at 145 m³ per capita per year, in 2007⁷ and gradually falling as a result of population growth. A country is considered water-poor when its water resources are less than 1,000 m³ per capita per year.

The government estimated available water at 145 m³ per capita per year in 2007. A country is considered water poor when its water resources are less than 1,000 m³ per capita per year.

Neglected economic dimension

At the heart of Jordan's water resources policies and management is how to optimize the national economic, social, and environmental benefits from its scarce water resources. Optimization is important because economic development itself depends critically on water sector performance.

Other concerns are the imbalance between supply and demand and the increasing competition among users for scarce resources. These characteristics of the sector, taken together, have demanded the attention of the central government throughout the country's history, as shown by its pervasive intervention in all elements of the water cycle, aiming at balancing supply and demand and at mediating among conflicting interests.

Despite the economic dimension of water-related issues (imbalance between supply and demand), the emphasis of the government's interventions in the sector has

been on regulating transactions in political markets, and on allocating available water resources administratively. An important element of these interventions has been the government practice of setting water prices and allocating water resources on the basis of political rather than economic and financial criteria. This practice has resulted in tariff levels too low to cover financial costs, much less environmental and opportunity costs. Borrowing from The Economist it could be said that the problem with water in Jordan is not that it is too scarce but that it is too cheap.⁸

The problem with water in Jordan is not that it is too scarce but that it is too cheap.

⁷ The Hashemite Kingdom of Jordan, Ministry of Water and Irrigation. Water for Life 2008-2022, February 2009. Opening Statement.

⁸ The Economist, March 7, 2009, page 39, in reference to water issues in California.

The subsidies, which are prevalent throughout the system, help to increase the imbalance between supply and demand and are not justified by their contribution to economic development or by their distributive or poverty alleviation impacts. Most sector investments are financed through loans and grants from bilateral and multilateral agencies and are not recovered through tariffs because they are low and insufficient to generate enough revenues to service loans. Hence, the loans are serviced by the government. This practice represents an increasing fiscal burden that at the same time jeopardizes efficient maintenance of infrastructure and future investments in water development projects.

Water political markets

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One result of the government's policies in the water sector throughout the years has been the development of political markets made up of a complex structure of institutions (formal and informal norms) and the organizations that have come into existence as a result of these norms.⁹ This structure determines who the political and economic entrepreneurs are,

whose choices matter, and how such choices get implemented.

At present, the main organization responsible for water issues is the Ministry of Water and Irrigation (MWI), which discharges its responsibilities through two decentralized agencies: the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA).

Political markets determine who the political and economic entrepreneurs are, whose choices matter, and how such choices get implemented.

Ministry of Water and Irrigation

MWI was created in 1992 to manage the country's water resources. It formulates and implements water and wastewater development programs and recommends water sector policies to the cabinet of ministers.

Water Authority of Jordan

WAJ was set up in 1988 as an autonomous agency, which was later incorporated into the MWI. Because of its mandate, WAJ played a leading role in the corporatization processes

in Aqaba and Amman. It is in charge of implementing government policies related to providing domestic and municipal water and wastewater disposal and treatment. Its responsibilities are broad. They include designing, constructing, and operating municipal services, supervising and constructing public and private wells, licensing well drilling rigs and drillers, and issuing permits to engineers and other professionals performing water and wastewater related-activities.¹⁰ WAJ also submits, through the minister of water and irrigation, recommendations to the cabinet of ministers to set water policies, including tariffs. Governed by a ten-member board of directors, WAJ is chaired by the minister of water and irrigation and made up of representatives of the ministries of planning, agriculture, and health, as well as the secretaries general of WAJ and JVA.

Jordan Valley Authority

JVA was also established in 1988 as an autonomous agency and was also later incorporated into the MWI. JVA is charged with developing water resources, towns and villages, infrastructure, and tourism facilities in the Jordan River Valley.

⁹ For more on the distinction between "institutions" and "organizations," see: North, Douglass C. *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, 1990.

¹⁰ Although by Law they should issue permits, WAJ has not done it.

JVA is governed by a ten-member board of directors chaired by the minister of water and irrigation and made up of representatives of the ministries of planning, agriculture, and health, as well as the secretaries general of WAJ and JVA.

Box 3 shows how the institutional arrangements have evolved since Jordan's independence in 1946.

Box 3

Managing Water Resources and Providing Water and Sanitation Services The Pendulum Swings¹¹

In Jordan, organizational arrangements for water have swung from centralization of water resources management in the early years of the country to decentralization in later years and back to centralization today. The arrangements for providing municipal water and sanitation services have also been highly centralized. Most of the systems have been operated directly by central government departments. In Amman, however, the government – though maintaining control of the services – has experimented with various organizational arrangements. First, in 1973, it established a government-owned water and sewerage company. Ten years later, it started to operate the water and sanitation services directly through WAJ. Then, in 1999, the government contracted with a private operator to provide the services and created the Project Management Unit (PMU) within WAJ to monitor the performance of the private operator and to oversee the investment program in network rehabilitation for the Amman area. Finally, when the private operator contract expired, the services were corporatized.

Roughly at the same time as the corporatization of the Amman and Aqaba services, the government attempted to enter into a management contract to provide water and sanitation services in the Northern Governorates. This initiative was, however, not successful because there were not enough bidders.

¹¹ For further information see Haddadin, Munther J. op. cit.



CHAPTER 2

AQABA AND AMMAN: WHY REFORM?

“... where conflicting beliefs have evolved, the dominant organizations (and their entrepreneurs) may view the necessary changes as a threat to their survival. To the degree that the entrepreneurs of such organizations control decision making they can thwart the necessary changes.”¹²

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Public policy is concerned with debating the reasons for collective action. Starting from this premise, this chapter explores the question of why the government of Jordan undertook the reform of the water and sanitation services in Aqaba and Amman. In answering the question, it is useful to know what the cities are like and whether the demand for reform came from outside or inside the sector. The answer appears to be a combination of both. An important outside factor was the reallocation of economic development responsibilities from the central government to the Aqaba Special Economic Zone Authority (ASEZA). This institutional change gave impetus to initiatives aiming at a more autonomous water and sanitation service. An

important inside factor was ASEZA's interest in ensuring a timely expansion of water supply capacity originally thought necessary by 2007.

Two important cities with substantial differences

Aqaba, the fifth largest city in the country, is strategically important because it is the country's only seaport. Amman is important because it is the largest city and the country's administrative capital and commercial center. It is also the capital of the Amman Governorate.

Aqaba

Aqaba is located at the head of the Gulf of Aqaba. In 2008, its population was estimated at

127,000 inhabitants, growing at 3.5 percent a year.

Aqaba, the fifth largest city in the country, is important because it is the country's only seaport. Amman, the largest city, is the country's administrative capital and commercial center.



¹² North, Douglas C 2005, p. 117.

Aqaba and its environs were transformed into the Aqaba Special Economic Zone (ASEZ) in 2000. The transformation faced strong opposition because it was perceived by many as a threat to the centralized public administration prevalent in the country. The opposition was neutralized, however, by the strong support of the king himself and by the establishment of a government body for the zone (ASEZA) made up of six members, all appointed by the cabinet and reporting to the prime minister (Law No. 32 of the year 2000). USAID was a strong supporter of the zone.¹³

The Aqaba Special Economic Zone faced strong opposition because it was perceived as a threat to Jordan's centralized public administration.

The law, in Article 17, assigns broad powers to ASEZA including the responsibility for developing the Aqaba port, airport, and utility services inside the Zone. This broad delegation is, however, balanced by a provision under which major decisions (like contracting with third parties to provide the services or borrowing to finance projects and activities) require the approval of the cabinet of ministers.

Amman

In 2004, Amman's population was about 2 million or 37 percent of the country's total population of 5.4 million. The city is governed by a municipal council and a mayor, who heads the municipal administration.

The government has a strong influence in the administration since it appoints the mayor and half of the council. The other half is elected by popular vote. The population growth rate of Amman is estimated at 2.5 percent a year and inhabitants are expected to increase to about 3 million by 2020.

The law empowers ASEZA to develop infrastructure and provide services. Not surprisingly, it triggered negotiations between ASEZA and government agencies with branches in Aqaba.

Despite the broad powers vested by the law in ASEZA, the scope of the reform in the water and sanitation sector was incremental and "path dependent" rather than large-scale. It was incremental because the MWI and WAJ led a strong and effective opposition to large-scale changes allowed by the law. It was path dependent because the direction of the incremental change was broadly consistent with Jordan's centralized public administration. Also, in line with this direction, the negotiations between ASEZA and WAJ were often mediated by the prime minister's office or the cabinet of ministers. USAID provided assistance to the parties during the negotiations as well. In Amman, the reform was arguably generated by the coincidence of two factors: first, the experience of Aqaba and, second, the end of the management contract with the private operator (LEMA). This coincidence provided government officials who did

¹³ For further information on ASEZA see: Kardoosh, Marwan A. *The Aqaba Special Economic Zone, Jordan: A Case Study of Governance*. Universitat Bonn. Center for Development Research, January 2005.

¹⁴ WAJ's law confers special powers to negotiate, different from other governmental entities.

not support the management contract with the opportunity to make a case for ending it. Their case was based on the limitations of the management contract discussed later in this chapter and the potential benefits of creating a government-owned company modeled in the successful experience in Aqaba. This meant that the rewards of the change were high, as they could create the conditions for further improvement in the services. It also would allow central government organizations to take control of the services again. It was also a low-risk approach inasmuch as it was based on an experience broadly perceived as successful by many in the government.

Government as major player in the water and sanitation sector

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Before the corporatization, the role of the government in the water and sanitation services in Aqaba and Amman was important but substantially different in each city. In Aqaba, the services were provided by a local branch of WAJ, while in Amman they were provided by a private company under contract with WAJ. Despite this major difference, both arrangements had a common element: the strong influence of government's

policies and decisions on the operation of the two services and, thus, on their quality and sustainability.

The arrangements had a common element: the influence of government policies and decisions on the operation and maintenance of the services and on their quality and sustainability.

As a framework for the analysis of the services before corporatization, this report uses six operational attributes: Customer base, Quality of services, Infrastructure stability, Water resources adequacy, Financial viability, and Employee and leadership development.¹⁵

The operational attributes of the two utilities were largely similar; despite the different roles of the government. One major difference was the continuity of the water services; Aqaba had a continuous water supply while Amman had only intermittent service. The other difference was the size of the companies. The main attributes of the two utilities are described below.

Aqaba: a branch office with little autonomy and good service quality

Water and sanitation services before the corporatization were provided by WAJ through the local branch known as

WAJ-Aqaba. The authority WAJ delegated to the local branch was limited to day-to-day operations, and the resources allocated to it were scarce and closely controlled by headquarters. An example of this limited delegation and tight control was the management of the services' cash flows and the investment program. Cash collected from the customers was deposited in a WAJ headquarters account, from which WAJ headquarters periodically transferred funds to the branch, in accordance with headquarters' estimates of the branch cash requirements. WAJ headquarters also reserved the authority to implement and finance investment programs.

The authority WAJ delegated to its local branch in Aqaba was limited to day-to-day operations, with scarce resources tightly controlled by headquarters.

¹⁵ The attributes used to describe the utilities were adapted from *Effective Utility Management. A Primer for Water and Wastewater Utilities*, June 2008. Association of Metropolitan Water Agencies, American Public Works Association, American Waterworks Association, National Association of Water Companies, United States Environmental Agency, and Water Environment Federation. The data about the services are from the corporatization consultants' reports.

Customer base

The customer base for water and sanitation services in Aqaba is much smaller than Amman in terms of both number of customers and volume of water supplied, as seen in Table I below.¹⁶

Table I
Aqaba Customer Base 2002

Item	Water	Sewerage
Total population service area (000)	67	
Total customers (000)	18	13
Population served (% of total)	99	73
Breakdown of water customers		
o Residential (% of total)	97	N/A
o Non-residential (% of total)	3	N/A
Water supplied (million m ³)	15	

An interesting characteristic of the Aqaba customer base is the weight of nonresidential customers on volume and value of the water billed.

Nonresidential customers, 3 percent of the total number of customers, account for about 75 percent of the water billed and 85 percent of the value of the bills. The difference between the relative weights of the volume and value of water billed is due to the differential tariffs between the residential and nonresidential users and the progressive tariffs according to consumption.

Aqaba's nonresidential water customers are few but account for a disproportionate share of volume and value of water billed.

Quality of services

The quality of water supply and sewerage services in Aqaba was generally good. The water supply was continuous, and customers' complaints about water service interruptions or sewer backups were resolved promptly (about three hours on average). This service standard was accomplished with the help of substantial investments in system expansion and rehabilitation, and with the installation of a computerized maintenance management system in the two or three years before corporatization. The investments were financed by a USAID grant to WAJ.

Most of the wastewater was discharged into a treatment lagoon located in the northwest part of the city, while smaller quantities of wastewater on the south coast were treated in underground septic systems and percolated into the ground. Additional wastewater collection and treatment facilities were under construction to satisfy demand until about 2030.

Infrastructure stability

The utility's performance under this attribute was not satisfactory. The coverage of the fixed assets inventory was incomplete, and there were no defined plans, schedules, or standards for replacing and rehabilitating assets. Despite investments in system rehabilitation in early 2000 and the favorable topography (no significant differences in elevation within the service area), the number of water pipeline leaks and breaks and the frequency of sewage collection system failures were higher than best practice. For example, nonrevenue water was estimated at 37 percent¹⁷ of water production compared to less than 20 percent best practice, and the number of bursts/leaks per year per km of water main was estimated at 2 compared to less than 0.2 best practices.

¹⁶ Additional indicators of the attributes for both Aqaba and Amman are shown in Annexes 1 and 2.

¹⁷ A contributing factor to this high number is the free delivery of water to various Bedouin villages located near the well field.

Despite investments in system rehabilitation in early 2000, the number of water pipeline leaks and breaks and the frequency of sewage collection system failures were high.

Water resources adequacy

The main source of water (Disi well field¹⁸) for Aqaba should satisfy demand until about 2013. Additional sources were expected to come from desalinated water. At the time of this study, desalination projects were still under consideration as well as other alternatives such as a second pipeline from Disi to Aqaba.

Financial viability

The government's financial policy for Aqaba water supply and sanitation services did not provide for their financial viability. The operating revenues were to be sufficient to cover operating expenditures but not full maintenance or investment requirements. Any operational cash surplus was to be absorbed by WAJ. Capital expenditures were to be financed by government subsidies, which in turn were to be financed by loans and grants from multilateral and bilateral organizations, internal debt, and current government revenues.

In practice, tariffs in Aqaba before the corporatization allowed the service to generate an operational cash flow to transfer to WAJ¹⁹. This cash flow was made possible by four main factors. First, the high volume of water sales to large nondomestic consumers, which paid high tariffs; second, the low operating cost of the system, which required little or no pumping; third, the good groundwater quality coming from the Disi aquifer, which required only chlorination; and, fourth, WAJ's practice of postponing infrastructure rehabilitation and maintenance.

The practice of postponing infrastructure rehabilitation and maintenance was one way to help generate an operational cash flow in Aqaba to be transferred to WAJ's headquarters.

Employee and leadership development

Personnel management was one of the issues confronting WAJ-Aqaba. The salary scale was not competitive with the industry due to limitations mandated by MWI/WAJ primarily related to their own salary caps. WAJ-Aqaba managers lacked authority to staff the utility, and the existing personnel lacked qualifications.

Only five had university degrees. Training programs were limited, and there were no performance incentives in place.

Amman: inadequate incentives, autonomy and quality of services

Before they were corporatized, water and wastewater services in Amman were the responsibility of a private company (LEMA), under a management contract awarded by WAJ in 1999 through competitive bidding, with World Bank assistance. The bidding process started with ten qualified bidders and ended with only two offers²⁰. LEMA was a private consortium formed by Suez Lyonnaise des Eaux (currently Suez Environment) and Montgomery Watson Arabtech. The original four-year contract was extended twice until December 2006.

The responsibility for supervising contract performance was WAJ's, which discharged this responsibility through the Project Management Unit (PMU). LEMA's technical and financial performance was also audited once a year by independent auditors funded by USAID.

The terms of the management contract, however did not include enough incentives to promote excellence in the provision of services. This was

18 The Disi well field extracts water from a fossil aquifer underlying southeastern Jordan and northwestern Saudi Arabia.

19 Aqaba's cash transfers to WAJ proved later to be one of the major obstacles to corporatization due to WAJ reluctance to relinquish those in favor of the new company.

20 Odeh, Nancy. *Towards Improved Partnerships in the Water Sector in the Middle East: A Case Study of Jordan*, Ph.D. dissertation, Massachusetts Institute of Technology, June 2009. Page 93.

primarily because the fixed management fee constituted the bulk of the contractor's remuneration, while the incentives and penalties based on performance were small in relation to the management fee. The performance incentive ended up being 5% of the improvements in financial performance²¹.

Under the management contract, WAJ reserved for itself important functions related to bulk water supply and capital investment decisions leaving LEMA's management without enough tools and conditions to make a major difference in services. This imbalance in the distribution of functions and authority had significantly negative implications. First, there were coordination and accountability issues like in any other management contract. WAJ delegated to LEMA authority for the daily operations of the water and sanitation services but retained for itself the authority for financing and implementing capital investment programs. The issues arising from this split authority were highly disruptive to the day-to-day operation of the service and to the planning for growth and modernization.

The second effect of the imbalance in functions was that LEMA's management had

WAJ reserved for itself important functions related to bulk water supply and capital investment decisions leaving LEMA's management without enough tools and conditions to make a major difference in services.

limited authority to manage its working capital. Cash collected from customers was deposited in a WAJ account and then WAJ transferred the funds to LEMA. This process significantly extended the time required for LEMA to receive cash from its customers and, thus, affected its capability to meet its obligations, particularly with suppliers.

Third, there were uncertainties for LEMA's management regarding the availability of water resources. These uncertainties were not only the result of the country's water poverty but rather the result of WAJ's and JVA's control of bulk water without an adequate protocol

for providing water to LEMA.

Measuring Amman's water and sanitation services using the six attributes used for Aqaba, it is clear that services before corporatization were below best practice and below Aqaba standards. To be fair it is, however, important to mention that the differences in topography between the two cities have a substantial impact on the operation of the services. Aqaba is a city with minor differences in elevation while Amman has an elevation difference of about 400 meters between the highest and lowest points.

²¹ Odeh, Nancy, Op cit. P. 124.

Customer base

Amman's customer base for water and sanitation services during recent years has grown rapidly as a consequence of natural population growth and immigration. The city has been able to incorporate the additional population into its water customer base but is lagging in sewerage services. The main characteristics of the 2004 customer base are as shown in Table 2.

Table 2
Amman - Customer Base 2004

Item	Water	Sewerage
Total population service area (million)	2.0	
Total customers (000)	365	260
Population served (% of total)	97	78
Breakdown of water customers		
o Residential (% of total)	92	N/A
o Non-residential (% of total)	8	N/A
Water supplied (million m ³)	126	

Quality of services

Despite the significant administrative and operational improvements introduced by LEMA under the management contract, the overall quality of the water and sanitation services in Amman before the corporatization was still deficient. Improvements included the reduction of NRW from 54% to 43%, the establishment and consolidation of a modern call-center, the reduction of the ratio of employees per subscriber, the introduction of computerized meter-reading devices, and the establishment of decentralized customer service centers. These accomplishments contributed

to cost rationalization and, most importantly, increased customer satisfaction. But, the quality of the water supply services was deficient, mainly because of the company's inability to overcome the rotation delivery of water to customers that started in the 1970s in response to the central government's allocation of insufficient water supplies to urban areas combined with extremely high water losses. The operational practice of rotating water supply among the different zones into which the distribution system is divided leads to most zones receiving water two consecutive days a week and a few receiving continuous supply. Rationing in Amman means

rotating the water supply among the different zones into which the distribution system is divided. Most zones receive water only two consecutive days per week.

Since customers have always lived with the rotating system, they have learned to cope by investing in internal networks in their houses including roof and ground or underground tanks, pumps, valves, and, in some cases filtration systems. They also may purchase water from trucks between the days of supply and carry out the most water-intensive activities, like laundry, on the days water supplies come.

Middle- and high-income customers with high water-storage capacity (up to 10 to 20 m³) are less affected by the rotation. Conversely, low-income customers with low storage capacity (1 to 3 m³) face significant shortages.

Another drawback of a rotating water supply is damage to the distribution network as a consequence of the sudden changes in water flows ("water-hammer effect"). The rotation practice also adds to operating costs (including staff to open and close valves), to the complexities of operating pressure-reducing valves in some 330 distribution zones, and to the difficulties of detecting and repairing water leaks.

Customers have learned to cope by storing water in roof and ground or underground water tanks and by carrying out the most water-intensive activities, like laundry, on the supply days.

The company's inability to reduce water losses and inadequate control of the water distribution system has resulted in a worrisome decline in the hours of service, as shown in Table 3.

Table 3
Amman – Declining Service Hours

Year	Hours per Week
2005	66
2006	51
2007	47
2008	44

Wastewater service coverage under LEMA and Miyahuna is low. Only 78 percent of the population had access to the network in 2006 and was increased to 80% in 2008. Most of the sewage was pretreated in a lagoon plant, and the rest in two secondary treatment plants. In addition, WAJ was building a large secondary treatment plant (As Samra) which entered into full operation in 2008.

Infrastructure stability

WAJ and LEMA's performance under this attribute was not satisfactory, as observed through three quantitative and qualitative proxy indicators. The fixed assets inventory, including conditions assessment, was insufficient to build an effective asset management program. Further, the company did not have defined standards for renewing and replacing assets and, thus, decisions on asset renewal and replacement were driven by availability of funds, including loan proceeds for this purpose²². For example, after years of neglecting the infrastructure, WAJ replaced about 10 percent of Amman's tertiary network during the life of the management contract. This investment was financed with a World Bank loan and the program stopped once the World Bank funds were used. USAID and other donors funded additional programs to replace a significant portion of the primary and secondary supply system around the city.

As another indication of weak performance, the number of water pipeline leaks and breaks and the frequency of sewage collection system failures were much higher than best practice indicators. For example, in 2004 nonrevenue water was estimated

at 43 percent of the water introduced into the distribution system and there were 11 burst/leaks per year per km of water main²³. Both estimates compare unfavorably with best practice (less than 20 percent nonrevenue water and less than 0.2 burst/leaks per year per km of water main). This represented an enormous waste of resources. The treated water lost or consumed without generating revenue for the water provider exacerbated the water delivery problem.

Sewer back-ups and overflows by far exceed best international practices of <0.1 per km of network per year. They amounted to about 18,900 cases in 2004, or 9 stoppages per km of network per year. This problem presents an increasing bottleneck to the development of new real estate projects. It also signals the need for urgent system rehabilitation.

Water resources adequacy

Water resources were a major issue for Amman because water usage (127 million m³ in 2004) was close to the capacity of the sources (150 million m³ in a year of average rainfall). For the medium term (less than ten years), Amman's water sources were expected to be augmented by WAJ through the new

²² LEMA managed three investment budgets: i) funded by WAJ for the O&M investments, ii) financed by WAJ for investments outside of LEMA contract, and iii) investments financed by a loan from the World Bank.

²³ Currently there is no information available of the breakdown of losses between commercial and technical causes.

Zara-Ma'in source which began operations in 2008.

For the longer term, WAJ just finalized a BOT contract to bring 100 million cubic meters per year from the Disi aquifer in 2013. The capital cost of this project is about JD 800 million.

Financial viability

Owing to the government's policies in the water and sanitation sector, and the terms of LEMA's management contract, the provision of water services in Amman were not financially viable. They were dependent on LEMA's operating revenues and on government subsidies. Broadly speaking, the company's own revenues should cover operation and maintenance expenditures, while government subsidies should cover investment requirements. The government subsidies were financed by loans and grants from multilateral and bilateral organizations, internal debt, and current government revenues. The timing and amount of the investments in system expansion and rehabilitation were dictated by the availability of external and budgetary funds and not by the requirements of the service.

In addition to the constraints on financing capital expenditures, the financial model did not

provide for a good balance between operation and maintenance expenditures on one side, and revenues on the other. This lack of balance was due to tariff levels set by the cabinet of ministers on the basis of political considerations and without explicit rules, and without enough discussion of whether the tariffs were sufficient to cover maintenance and rehabilitation.

Employee and leadership development

Personnel management was another difficult issue under the management contract because there were two groups of employees. One group

consisted of people hired directly by LEMA with market-driven salaries and benefits; the other comprised WAJ-seconded employees with civil servant salaries and benefits. This lack of coherence in salaries and benefits naturally created dissatisfaction among employees. Despite these difficulties, LEMA recruited and retained an increasingly competent workforce. It also significantly increased opportunities for professional and leadership development through training. Unfortunately, what was achieved was insufficient to close the gap between current performance and the continuous improvement required to raise service standards.





CHAPTER 3

THE PROCESS: A DISCIPLINED APPROACH TO REFORM

*"For any given project, knowledge creation has to happen in a caring atmosphere, one in which organizational members take an active interest in applying the insights provided by others."*²⁴

Water and sanitation sector reform is a complex and risky process. Reformers, to be successful, should display not only a strong commitment but also put in place a systematic and disciplined approach to designing and implementing reform. What made the reform processes in Aqaba and Amman so expeditious? The answer to this question appears to lie in an unusual combination of factors that included strong demand for reform; political support accompanied by a clear mandate to the staff responsible for designing and implementing the reform; and highly structured decision-making processes to ensure that the outcome of the reform was consistent with the intentions of the decision makers.

Demand for reform

The law establishing ASEZ appears to have provided strong impetus for water and sanitation reform in Aqaba. The law made ASEZA responsible for the development of all utilities to accompany the ambitious process of development in the Zone. The impetus for reform was further encouraged by the perception in Aqaba that WAJ would be unable to develop a new source of water that the entrepreneurs in Aqaba estimated necessary by 2007. Later during the process it was demonstrated that the new source would be required only by 2013²⁵.

The perceived success of the reform in Aqaba was, arguably a major factor in stimulating the demand for reform in Amman. These two cases, in turn, are likely to lead the government to experiment with organizational arrangements in other parts of the country, particularly in the Northern and Middle Governorates.

Strong political support

The reform in both Aqaba and Amman was led by the cabinet of ministers through the Ministry of Water and Irrigation, which heads the water sector in the country. The cabinet of ministers, according to Jordan's legislation, is the decision maker.

The ASEZA law provoked strong demand for water and sanitation reform in Aqaba.

²⁴ Von Krogh Georg, Ichijo, Kazuo, and Nonaka, Ikujiro. *Enabling Knowledge Creation. How to Unlock the Mystery of Tacit Knowledge and Release the Power of Information*. Oxford University Press, 2000, p. 9.

²⁵ The Water Resources and Demand Assessment published in 1998 by Montgomery Watson/Arabtech Jardaneh estimated that in 2007 the population growth would require additional water resources. An updated demand projection made by the TAPS project in 2003 postponed the date for additional demand until

The government understood that the corporatization process needed continuous, strong political support, as well as high-level government experts and officials leading the process from day to day and making recommendations to the cabinet of ministers. It also understood that the organizational arrangements for the reform had to be adapted to the political and administrative realities in the two cities. In Aqaba, the process was carried out by a coordinating committee made up of representatives of both ASEZA and the government authorities, while in Amman it was handled by a committee (Project Development Team) made up only of WAJ representatives²⁶. Representatives from USAID and the consultants participated in both committees.

The different composition of the committees in Aqaba and Amman reflects differences in the political and organizational relationships between the government and the two cities. In both cities, there was a tradition of government control of the water and sanitation services. Yet the economic zone had created a novel situation in Aqaba because the law had

vested authority in ASEZA to develop utilities services. This law conflicted with WAJ's authority in the water and sanitation sector and, thus, the government and Aqaba needed to find a political solution. The solution they found was to appoint WAJ and ASEZA representatives to the reform committee.

The ASEZA law conflicted with WAJ's authority, and thus the government and Aqaba needed to find a political solution to the conflict.

Safe spaces to share knowledge

The committees established by the government to help in the reforms represented a practical, realistic, and innovative approach to carry out reform. They were expected to be "safe spaces" in which the participants could share, create, and apply sector knowledge relevant to the corporatization. This idea is reflected in their role, which was to develop a collective vision of the organizational arrangements for the entities that provide water and wastewater services.

The committees represented a practical, realistic, and innovative approach to carry out reform. They were expected to be "safe spaces" to share, create, and apply sector knowledge.

In addition, high-level government officials participated in the committees. This was essential for timely and effective communication with the decision makers: the prime minister and the cabinet of ministers through the minister of water and irrigation. It was also critical in making sure that the committee's recommendations were politically feasible.

Specialized assistance

The MWI and USAID hired specialized consultants to assist the government in the reform. The consulting firms, under contract with USAID, were responsible for analyzing various organizational models and recommending to the committees one suitable for water and wastewater services. To accomplish their assignments, the firms used multidisciplinary teams made up of expatriate and local experts, specialists in sector reform, utility management, regulation, engineering, economics, law, finances, human resources, information technology, communications, and training.

²⁶ In this study committee and Project Development Team are synonymous.

Systematic approach to reform

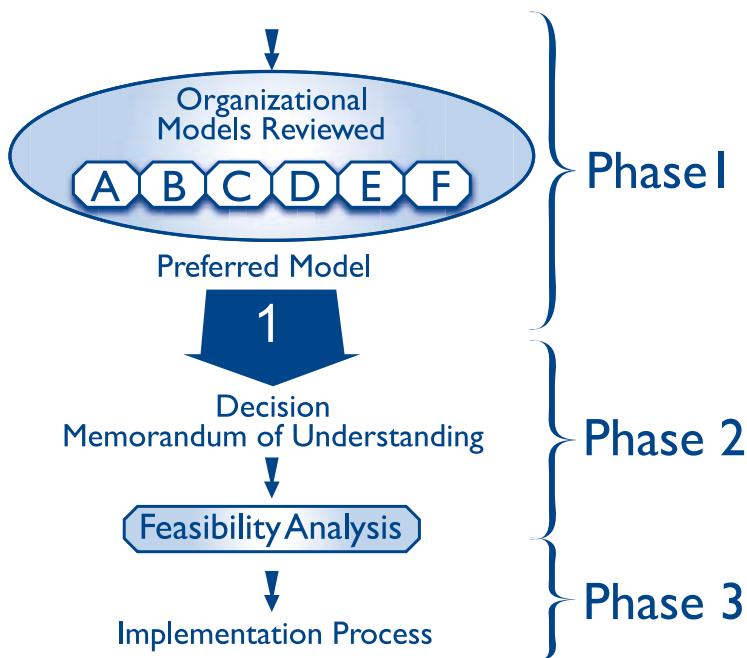
On the basis of consultants' technical proposals, the committees organized the reforms and the work of the consultants in three phases. In phase one, the committees, with the help of the consultants, analyzed organizational options and identified a recommended

option to provide the services. In phase two, the consultants, in collaboration with committee members, prepared a feasibility study and a detailed road map for implementing the selected option. And in phase three, the consultants helped the committees implement the option. These project phases and the methodology are shown below in Graph No. I²⁷

This phased methodology sought to ensure that both the committees and the government could gradually and systematically generate insights and agreements useful in shaping the corporatization. In other words, the final decisions were facilitated by a "no-surprises" approach.

The final decisions were facilitated by a "no-surprises" approach to decision making.

Graph I
Project phases and methodology



The committees also set up highly effective working practices. They maintained the momentum of the reforms by keeping a rigorous schedule for the meetings²⁸, which were well organized and productive, with agendas proposed by the consultants and approved by the committee at the beginning of each session. The deliberations among members were informed by documents distributed beforehand by the consultants or by power point presentations during the meetings.

The committees, USAID, and the consultants created "collaborative advantage" during the process. This is reflected in the guiding principle of the consultants' work:

²⁷ Consultant's power point presentation of the Feasibility Report to the PDT on July 10, 2006.

²⁸ The Aqaba Water Company (AWC) Committee met 12 times in 18 months while the MIYAHUNA Committee had 19 meetings in 14 months.

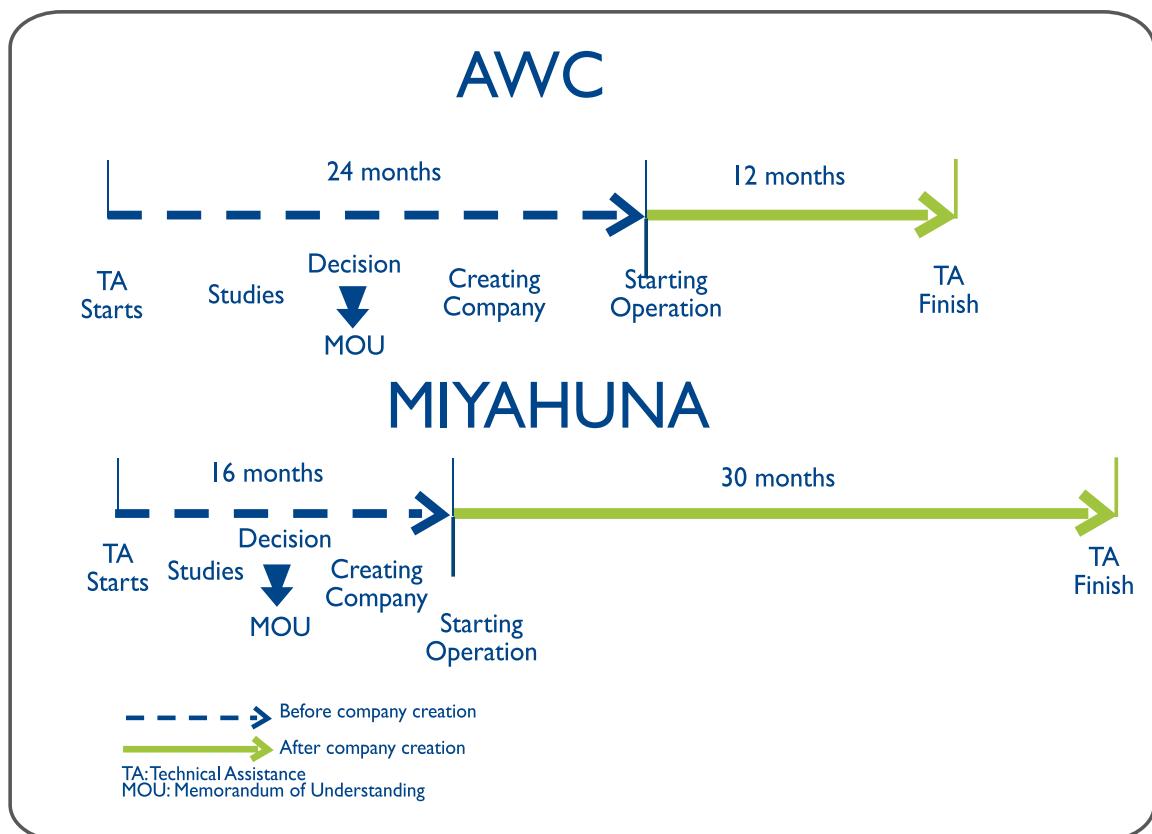
"Collaborative advantage will be achieved when something unusually creative is produced; perhaps an objective is met that no organization could have produced on its own and when each organization, through the collaboration, is able to achieve its own objectives better than it could alone."²⁹

At another level, the committees were also effective in keeping key ministers and officials informed about the work-in-progress, including the recommendations being considered in the committees. This communication included not only the informal feedback that the government officials in the committees provided to higher level officials but also the consultants' formal

presentations to key ministers. In addition, the deliberations of the committees were recorded in minutes distributed to all members.

The above approach paid off as the government was able to implement the reform on schedule. The process, however, takes time as can be seen in the timeline presented in Graph No. 2 below.

Graph 2
Corporatization Timeline



²⁹ Huxham, Chris. (Ed). *Creating Collaborative Advantage*. Sage, London 1996. The quote is part of the consultant's power point presentation to the PDT on October 26, 2005.



CHAPTER 4

MAKING CHOICES: WHOSE INTERESTS WILL BE AFFECTED?

*"Despite the importance of economic factors, ... institutional change is essentially an outcome of the prevailing power balance among interest groups."*³⁰

Choosing among alternative organizational arrangements for water and sanitation services is a sensitive undertaking. It requires a good understanding of the physical characteristics of the services and of the economic, institutional, political, and social environment in the service area. This study suggests that, in line with Jordan's centralized public administration, the fundamental choices in Aqaba and Amman were made by the government as the dominant player in the water political markets in the country. It also suggests that the main decisions sought to preserve the status quo as much as possible so as to not threaten the interests of the main sector organizations.

The main decisions sought to preserve the status quo as much as possible so as to not threaten the interests of key sector organizations.

Choosing between the public and private sectors

The Aqaba and Amman cases differed in the process and criteria for choosing between the public and private sectors to provide water and sanitation services. In Aqaba, the choice was driven by ASEZA's perception of when a new source of water should enter into operation and by its assessment of WAJ's capability to finance, construct, and put into operation a new source by 2007. As ASEZA was skeptical about WAJ's capability to achieve this goal, its initial interest was a concession contract with a private operator able to achieve it. Later in the process it became clear that a new source was

required only about 2013 and, based on this information, the reform committee decided that the concession contract was not necessary since there was plenty of time to construct the new source. Under these circumstances the committee adopted the corporatization model.

In Amman the reform committee considered several organizational arrangements, ranging from full concession to a private sector entity to a fully-owned government company. The record of the discussions in the committee and interviews with government officials suggests, however, that the intention of the most influential players in the government was always to establish a government-owned company along the lines of the Aqaba model. This was

³⁰ Saleth, R. Maria and Dinar, Ariel. *The Institutional Economics of Water: A Cross-Country Analysis of Institutions and Performance*, The World Bank, 2004, p. 40.

consistent with the centralized approach to water resources and water utilities management in Jordan. Thus, the committee recommended, without much discussion, the government-owned company.

The intention of the most influential players in the government was to establish a government-owned company in Amman along the lines of the Aqaba model.

Nevertheless, the committee discussions about organizational models with private sector participation considered several important factors. First, specialized international investors and operators were showing little interest in new projects at the time of the corporatization of Amman services.³¹ And, second, potential private investors would charge a high price for their services, consistent with the high risks involved in the Amman project. These risks, according to the corporatization consultants and the committee, were due to the lack of an explicit government tariff policy and to the uncertain availability of water resources, particularly in Amman.

In any event, the option of a government-owned company

does not preclude future private sector involvement through outsourcing services when the government considers it appropriate. The Jordanian government understands that the corporatization, as implemented, is part of an evolutionary process for sector institutional arrangements and policies and not necessarily the “ultimate solution” to sector issues. There are no magic formulas for ensuring good quality water and sanitation service provision.

Rhetoric and reality: preserving the status quo

The government established both AWC and MIYAHUNA as limited liability companies under the companies' law of Jordan. In adopting this legal form, the government's intention was to provide the companies with a framework consistent with the requirements of an entity managed under modern commercial principles and private sector practices. This intention is explicit in the memorandum of understanding in which the parties agree that the water company will be “operated as a financially viable, self-sustaining entity that will be run under commercial principles and promote private sector participation.”

But the government took a cautious approach by making limited use, so far, of the possibilities offered by the companies' legal framework. This limited use is reflected mainly in the ownership structure of the companies, which allows WAJ to tightly control their operations and to amend their bylaws unilaterally. In Aqaba, the shareholders of the water company are WAJ with 85 percent of the shares and ASEZA with 15 percent. In Amman, WAJ owns 100 percent of MIYAHUNA's shares. The law empowers whoever owns 75 percent of the shares to amend the bylaws.

The relationship between the government and the water companies was one of the most critical issues discussed by the corporatization committees in Amman and Aqaba. This relationship, combined with the ownership structure, would determine how power would be distributed between government officials and the board and management of the new companies.

How power would be distributed between government officials and the board and management of the new companies was one of the most critical issues discussed during corporatization.

³¹ Several large concession contracts throughout the world had been rescinded in recent years, creating uncertainty for potential investors and governments alike.

The government's decisions about the relationship were summarized in legal documents, which are similar for the two companies: the Articles and Memorandum of Association and the Assignment and Development Agreement. The documents were signed by representatives of the water companies and WAJ and approved by the cabinet of ministers. In Aqaba, the documents were also signed by an ASEZA representative.

The Articles and Memorandum of Association are required to create a limited liability company in accordance with the Companies Law. These are relatively simple documents that include the name of the company, its main objectives and powers, capital, management authorities, and shareholders' responsibilities. The Assignment and Development Agreement is a more detailed document addressing specific aspects of the water companies operations. It includes, for example, assignment of assets and assumption of liabilities, revenues, transfer of control of existing assets, expansion and development of the system, scope of services, reporting, and quality standards.

What were the main choices made by the government? They focus mainly on four areas: Companies Governance; Financial Arrangements; Operations; and Regulation.

Companies Governance

In line with the tradition of centralized management of the water and sanitation utilities, the government and WAJ chose to retain tight control of the companies' operations through the rights to appoint the members of the companies' main governing bodies; to implement and finance the capital investment programs; and to set tariffs for the companies' services.

The government and WAJ chose to retain tight control of the companies.

WAJ, as the majority or single shareholder in the companies, controls the general assembly, which is the highest authority of the companies. It also controls the board of directors³² whose members are appointed by the general assembly in accordance with the Articles of Association. Five of the seven members of the AWC board of directors are nominated by WAJ; the other two are nominated by ASEZA. In the case of MIYAHUNA, WAJ

nominates the seven members of the board. And finally, the board, which is controlled by WAJ, appoints the general manager and second level executives and has the right to appoint and dismiss anyone in the company.

Financial Arrangements

Financial arrangements adopted by the government for both AWC and MIYAHUNA delegated more authority to the companies' managements to make day-to-day financial decisions than they had had before the corporatization. The government, however, retained the authority to make strategic financial decisions.

One example of increased delegation to the companies is the authority to manage the services' cash flows that before the corporatization was concentrated in WAJ. Now the water companies' managements collect revenues and use them autonomously within the parameters established in annual budgets. In addition, MIYAHUNA receives the proceeds from the 3 percent sewerage tax collected by GAM, which amounts to about JD 9 million or the equivalent to 12 percent of the company's total revenues.

³² In Jordan, the equivalent of the board of directors for limited liability companies is known as the management committee. This study uses board of directors rather than management committee because it is addressed to an international audience.

In the area of strategic financial decisions, the government retained the authority to set tariffs, and therefore, to determine the revenues of the water companies. This is a legitimate role for the government in the water and sanitation sector because of the monopoly character of the industry. The problem lies not in the government retaining this authority but in retaining it without explicit rules for tariff setting³³. This lack of rules often leads to opportunistic government behavior to the detriment of the water companies.

The government retained the authority to set tariffs without explicit rules.

30

WAJ kept for itself the authority for financing and implementing major capital investments in MIYAHUNA. These are investments in rehabilitation and expansion of the bulk water systems and wastewater treatment plants outside the service area. The authority WAJ delegated to MIYAHUNA is related to investments in maintenance, rehabilitation and expansion of the water and sewerage networks, maintenance of wells, conveyance systems, and wastewater treatment plants in the service area. These

investments have an annual limit to be agreed between WAJ and MIYAHUNA.

WAJ kept for itself the authority for financing and implementing major capital investments in MIYAHUNA.

AWC enjoys full discretion to finance and implement its investment programs within its financial constraints.

Consistent with the government interest in controlling the capital investment program, WAJ retained ownership of the fixed assets in Amman and made them available to MIYAHUNA for use and operation under the terms of the Assignment and Development Agreement. These terms include

MIYAHUNA's obligation to operate and maintain the assets in accordance with industry standards. The assets contributed by the government as part of MIYAHUNA's equity were the accounts receivable, LEMA's inventories, vehicles, and operational equipment.

The ownership of fixed assets is unlikely to make any difference in the management's ability to provide the water and sanitation services. Yet the lack of financial statements incorporating all the assets and liabilities of the service does make a significant

difference in the transparency of the financial reporting system. Without consolidated information on the value of the assets that are generating the companies' revenues, the reader of the financial statements cannot judge the efficiency of the capital investments. In addition, the lack of depreciation charges results in the profits of the service being overstated. This has also resulted in MIYAHUNA being assessed income tax on profits and WAJ taking several million Jordanian dinars from MIYAHUNA bank account.

Operations

In choosing how the new companies would operate and how the responsibilities would be allocated, the government took into account constraints imposed by Jordan's historical institutions and political practices and by the physical aspects of the water and sanitation systems.

Provision of services. Choosing to allocate to the new water companies the responsibility for managing and operating the water supply and sanitation networks was relatively straightforward. The service areas were well defined, there were no competing interests outside WAJ that historically had had full responsibility for the services, and the cabinet of

³³ Various initiatives to address the tariff setting reform were frustrated by the frequent change of leadership in the Ministry.

ministers had the legal authority to delegate the provision of such services to any public or private sector entity totally or partially owned by WAJ.

Water resources. Decisions about managing and allocating water resources were more complex than the ones about networks. This is because of Jordan's water scarcity and wide annual variability in water supplies and the government's tradition of arbitrating and deciding on water allocation among users. The solution adopted in both Aqaba and Amman was to allow the new water companies to operate

and maintain the water supply systems and well fields located within the service area of the companies. WAJ and JVA continue to provide bulk water from sources outside these service areas, which by their nature are shared with other urban and rural users. The commitment of WAJ regarding the amounts of water to be provided to the companies and the methods used to set prices for bulk water are specified in the bulk water agreements signed with AWC and MIYAHUNA. JVA did not sign the agreements.

AWC and MIYAHUNA are allowed to operate and maintain the water supply sources located within their service areas. WAJ and JVA provide water from sources outside the service areas.

Wastewater treatment. The government's choices regarding wastewater treatment responsibilities took into account existing rights of other parties. In Amman, for example, the largest wastewater treatment plant (As Samra) is to be operated by a private contractor who built the plant through a "build, operate, and transfer" arrangement with WAJ. MIYAHUNA should pay WAJ for this service. In Aqaba, the company operates the recently built treatment plant financed with a USAID grant.



Personnel policies. The government, by establishing limited liability companies, allows the board of directors and management to introduce changes in personnel systems and policies consistent with the requirements of a public utility rather than with those of the civil service. The first step taken

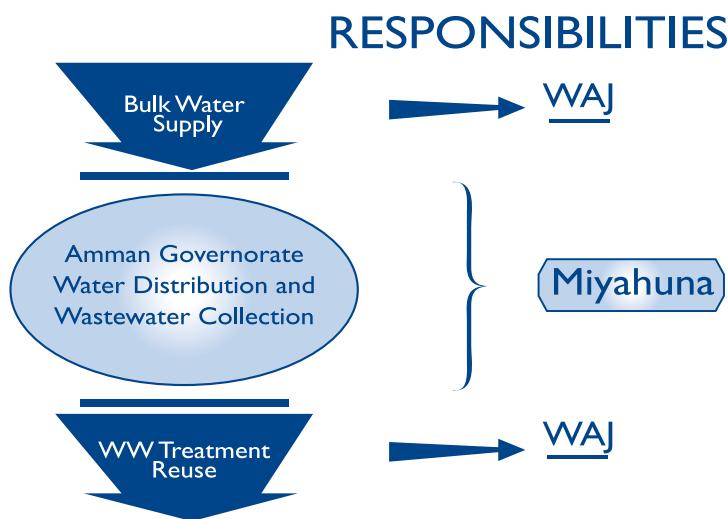
by the companies' boards in this direction was to enter into new contracts with all employees and increase their salaries in line with the private sector.

Procurement policies. This area marked a major departure from the past. Both AWC and MIYAHUNA follow

private sector procurement practices. The government audit bureau audits procurement to ensure that the purchases and acquisitions are done following the companies' rules.

The graph below illustrates the decisions made by the government about how MIYAHUNA would operate

Graph 3
MIYAHUNA's Business Model.



Regulation

In addition to its role as shareholder and financier of the new water companies, WAJ chose also to continue exercising regulation by contract through the Project Management Unit (PMU), which was originally created to monitor the Amman management contract. The main performance standards are established in the Assignment and Development Agreements. These agreements also require the companies to issue annual reports to the shareholders, including audited financial statements.

The roles of WAJ as majority shareholder, financier, and regulator of the new water companies present major risks because of the inherent difficulties in harmonizing conflicting objectives. An example of these difficulties is related to the standards of service and the availability of financial resources. WAJ must reconcile the government's desire to maintain low tariff levels and minimize the cost of service provision while at the same time meeting high service standards.



CHAPTER 5

STARTING UP THE COMPANIES: PAYING ATTENTION TO DETAIL

*"Plans often fail because the planners have not factored in all the irksome little conditions, or frictions... that have to be dealt with if the plan is to succeed. The plan may be simple; carrying it out is the hard part."*³⁴

An important message in chapters three and four was the government's disciplined and pragmatic approach to the most fundamental decisions during the reform. This chapter has a similar message about the starting-up of the companies. The government carefully planned the steps, decisions, and activities required to enable the companies to assume full responsibility and be accountable for operations from day one. It has, however, been less effective in taking the necessary actions to get the companies ready for the medium and long term.

Preoperational stage: a pragmatic approach

During the preoperational stage, the committees

responsible for the reform maintained the same disciplined approach to the work that characterized the initial stages. The committees' membership was the same. There were well-formulated plans and firm deadlines to complete the tasks. The timetable to establish MIYAHUNA, for example, was driven largely by the government's determination to take over the services from LEMA on January 1, 2007, that is, immediately after the ongoing management contract expired.

The transition path for both companies included three key elements: appointing members to the board of directors, appointing key personnel, and seeking support for the new companies.

Appointing the members of the board of directors

As a first step along the path of transition, the government convened the first general assembly of the companies once they were legally established. The task of the general assembly was to appoint the members of the board of directors. In Amman, WAJ, using the authority conferred by the Articles and Memorandum of Association, appointed a board made up of four staff members of the ministry of water and irrigation, one of the ministry of planning and two outside members.

The convenience of having a diversified board including representatives of the private sector and civil society was discussed early on. However,

³⁴ Dorner, Dietrich. *The Logic of Failure. Recognizing and Avoiding Errors in Complex Situations*. Perseus Books, 1996, p. 167.

only three members were selected outside MWI/WAJ. One of the outside members represents the Greater Amman Municipality as an important stakeholder. Another outside member, the director general of Jordan Electric Power Company, brings to the board the perspective and background of another type of utility. The third member from the ministry of planning brings a broader perspective of the economy.

MIYAHUNA's board of directors is made up of four staff members from the ministry of water and irrigation, one from the ministry of planning, and two outside members.

The case of AWC is similar to MIYAHUNA. Five members represent the Ministry of Water and Irrigation and two represent the Aqaba Development Corporation, which is ASEZA's development arm.

Appointing key personnel

Another important step was selecting managers for the new water companies. This step is important for this study as it illustrates not only the approach to setting up the companies but also WAJ's bias toward preserving the status quo. The first general manager for both companies was a WAJ

high-level official. He was first appointed general manager of AWC and two years later CEO of MIYAHUNA. When this manager moved from AWC to MIYAHUNA, the board of directors promoted the deputy who, before corporatization, was the head of WAJ's branch office in Aqaba. To be sure, WAJ in the case of MIYAHUNA considered the possibility of bringing someone from the private sector but in the end decided to appoint someone close to the sector.

WAJ's bias toward the status quo was confirmed two years after the creation of MIYAHUNA when its general manager retired and was replaced by another WAJ official.

WAJ made sure that the persons who were going to be appointed general managers of the new companies were part of the teams transitioning from old to new administration. In the case of MIYAHUNA, for instance, the prospective manager was appointed in a consultative capacity before the company was established and was tasked with making critical decisions, including how the company would be organized, what the terms and conditions would be for contracting the staff, and how to receive the assets from WAJ and from LEMA.

Other key personnel, with the exception of the Human Resources Director in MIYAHUNA and the Finance Director in AWC, were also from WAJ or LEMA.

Seeking support for the new companies

During the six-month period between the signing of the memorandum of understanding mentioned before and the starting of operations, the reform committees and the government sought support from stakeholders in the reform. This was done through several means, including meetings with unions and staff of the services and with representatives of local authorities.

In addition, LEMA stayed on under a new six-month operations management contract.

Preparing the companies for the future

The government and USAID agreed to extend the contract with the consultants on the reform to design and implement initiatives to promote change and modernization of the new companies' management and operations. The examples below illustrate the type of

The government and USAID extended the contract with the reform consultants to design initiatives to promote change and modernization of the new companies' management and operations.

Improving customer services

The management of both AWC and MIYAHUNA focused from the initiation of operations on improving customer services. Box 4 outlines the actions taken by AWC.

Box 4 AWC - Customer Services and Outreach

The company's management took measures to improve customer services and outreach including:

- Issuing an information sheet explaining why the company was established and how it operates;
- Remodeling the customer services center and operating it 24 hours a day, seven days a week;
- Training staff about their new roles, the importance of customer services, and ways to communicate with customers;
- Developing guidelines for customers on how to apply for new connections, the importance of paying their bills on time, and other matters of interest for the customer; and
- Computerizing the billing system.

Adapted from USAID/ARD. op. cit.

5. Partnering with Greater Amman Municipality

6. Enhancing MIYAHUNA's capabilities

Each initiative is supported by specific projects to be executed according to a priority order. Each project was defined by a team of employees from one or more directorates. The team leader is the person responsible for keeping track of project implementation using Microsoft Project software. Each project has a summary document (Project Charter) that includes the main components of the project: project overview and objectives, organization and management responsibilities, budget and resources, and risk and implementation constraints.

initiatives implemented or under consideration at the time of this report.

Preparing MIYAHUNA business plans

One of the important areas of collaboration of the consultant with MIYAHUNA's management was the preparation and implementation of the company's first business plan (2007-2011).

The business plan is organized around Six Strategic Initiatives as listed .

1. Managing water scarcity
2. Establishing customer confidence
3. Meeting the demands of growth
4. Building planning and technical capacity

In addition to the substance of the plan it is important to highlight that its preparation involved the collaboration of staff at all levels and thus it was a good training on the job. Also, MIYAHUNA institutionalized the concept of the business plan by establishing an office for following up the implementation of the plan and coordinating the preparation of future plans. At the time of this report, the company was updating its business plan. The scope and

the methodology followed for preparing the first business plan is presented in Annex 3.

Encouraging organizational learning

The consultant also assisted MIYAHUNA in organizing study tours for small groups of the company's management team and government officials.³⁵ The study tours were to Colombia, Spain, and the United States. The groups visited well-run water and sanitation companies and other water organizations like the sector regulator in Colombia and the Water Technology Institute of the University of Valencia in Spain. In selecting the places to visit, USAID and the Consultants sought to provide the participants with vivid examples of the flexibility required to approach the challenges of recently established water companies and of companies operating in water-scarce environments. The lessons learned during the study tour were documented by MIYAHUNA's staff and the consultants to provide guidance for replicating some of the approaches observed.

Reorganizing the human resources system

The consultant also assisted MIYAHUNA in designing and implementing a homogeneous

human resources system, including job reclassification and compensation plan to replace the one under LEMA, which, as seen before, divided the employees in two categories; employees hired directly by LEMA with market-driven salaries and benefits and WAJ-seconded employees. Both LEMA and WAJ-seconded employees signed new employment contracts with MIYAHUNA effective since the first day of operation of the new company. Annex 4 includes a description of the changes in compensation plans.

Building a brand identity

MIYAHUNA with the help of local specialized consultants started a program to build a brand or corporate image. The program includes three main areas: improvement of services, enhancement of communications, and design and introduction of visual identity carriers (logo and colors). The branding process, which is a continuous activity in MIYAHUNA, has been based on research conducted by the company to understand the expectations of different stakeholders. Annex 5 describes in more detail the branding components and process.

Reducing non-revenue water

MIYAHUNA entered recently

into three one-year pilot contracts with private firms to reduce non-revenue water losses. Each firm will work in a district of Amman. Based on the outcome of this experience, MIYAHUNA intends to enter into a long-term large-scale contract. This type of contract would represent a significant innovation in the water sector in Jordan as the payments are expected to be predominantly performance based.

Modernizing and expanding the customer database

MIYAHUNA also entered into a contract with a local company to modernize and expand its customer database. The up-to-date database will expand from 7 fields to 32 fields of information for each customer including GPS location of the property, number of residents, elevation, contact data, storage capacity, etc.

Designing a new pricing policy

Another area of technical support has been helping the government in formulating a new pricing policy aiming at ensuring the financial viability of the companies, the efficient utilization of water resources, and the explicit allocation of subsidies from mid- and high-income to poor families. The implementation of this policy is under consideration by MIYAHUNA and WAJ.

³⁵ The general manager of Aqaba Water Company participated in the study tours to Spain and the United States.

Will AWC and MIYA HUNA be able to meet expectations?

The government has been successful in establishing AWC and MIYAHUNA, with the intention of providing excellent service to customers. Through this reform, the government created an organizational framework with the potential of providing the companies' management teams with more degrees of autonomy and financial resources. The latter is particularly true in the case of MIYAHUNA with the transfer of the proceeds of the sewerage tax collected by GAM.

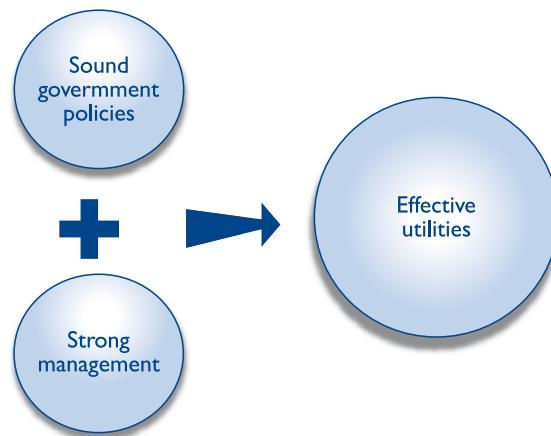
The government has also taken action to prepare the companies to display the attributes of highly effective utilities. Ongoing credibility and success of AWC and MIYAHUNA in displaying these attributes is, however, hardly a foregone conclusion as it depends on the interaction of government policies and the quality of the companies' management. The government policies are related to the companies' finances, managerial autonomy, water resources adequacy, and possibility of providing continuous water supply in the case of Amman.

Ongoing credibility and success of AWC and MIYAHUNA is hardly a foregone conclusion as it depends on the interaction of government policies and the quality of the companies' management.

The attributes of effectively managed utilities are similar to the ones used in Chapter 2 to assess the services in both Aqaba and Amman, and include items like product quality, customer satisfaction, financial viability, operational resilience, and others. Further details of the attributes and their definitions are presented in Annex 6. Evaluating progress in companies' performance along the above attributes should

be a primary task of AWC's and MIYAHUNA's board of directors, senior management, and other stakeholders. As there are many ways to achieve progress each utility should find its own way based on its own strategic objectives, priorities, and the needs of the community it serves. Many utilities choose to start small and make improvements step by step, perhaps by working on projects that will yield early successes. Some prefer to enhance their strengths, while others will prefer to focus on addressing weaknesses. The interrelationship between government policies, the companies' management and the operational attributes is shown Graph 4 below.

Graph 4
Interrelationship between Government Policies, Companies' Management, And Operational Attributes



The more relevant government policies and keys to management success are discussed in the next chapter.



CHAPTER 6

THE CHALLENGE:

IMPLEMENTING RESPONSIVE POLICIES AND EFFECTIVE MANAGEMENT

“...will a commitment to the present institutional structure get us where we wish to be in the future? If the answer is not promising, then a new institutional set-up is called for.”³⁶

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The government's intention of providing excellent water and sanitation services to AWC and MIYAHUNA customers poses substantial challenges for both the government and AWC's and MIYAHUNA's management teams. The challenge for the government is to demonstrate that its policies provide a supportive climate for the utilities as they work toward the outcomes outlined in the *attributes*, or otherwise, that it has the capacity to adapt them when they fail or when the circumstances change. The challenge for AWC and MIYAHUNA's management teams is to put in place adequate management approaches and systems.

This chapter examines four policy issues not fully addressed by the corporatization and

that, most likely, will determine the success or failure of AWC and MIYAHUNA. These issues revolve around the financial arrangements, autonomy of the companies, availability of water, and MIYAHUNA's ability to provide a continuous water supply. The chapter also outlines the keys to management success, which are, as mentioned before, leadership, strategic business planning, organizational approaches, and measurement.

Policy issues

Policy issue 1. Will MIYAHUNA and AWC be able to meet the challenges ahead under the existing financial arrangements?

The creation of MIYAHUNA and AWC was not accompanied by a revision of the tariff system or the policies for financing and implementing major capital

investment programs. Major changes in those areas are needed to achieve financial viability.

The prospects of tariff reform are encouraging as the government is actively considering a substantial revision of both the structure and the tariff levels as mentioned in Chapter 5.

Nevertheless, pricing reform particularly in the case of MIYAHUNA may not be sufficient if capital investments in bulk water and wastewater treatment, for which WAJ is responsible, are not timely implemented. This is a major risk because WAJ's chronic tight financial situation combines with the negative fiscal impact of continuing government subsidies to the sector.

³⁶ Bromley, Daniel W. op. cit., p.13.

Policy issue 2. Will the government be able to ensure that the companies operate independently?

This is a tough challenge as the government has little experience with water companies operating independently³⁷. In addition, the multiple roles of WAJ as majority shareholder of AWC and MIYAHUNA, bulk water supplier, financier; and regulator - make it a too powerful organization that can make unilateral decisions with little formal and transparent consultation and agreement with others. The question becomes again whether the government and WAJ will be willing to implement a system with checks and balances, in which several organizations have separate and independent powers and areas of responsibility. And still other questions remain. Would the government and WAJ, as a majority shareholder be willing to appoint members of the boards of directors of the companies in line with required autonomy and diversity? Box 5 provides an example of principles for formulating policies regarding the composition of board of directors. Would the government be willing to establish an independent regulator of quality and pricing of services?

Box 5

An Independent and Diversified Board of Directors³⁸

In any corporation, the board of directors is typically central to corporate governance or structure and relationships that determine corporate direction and performance. The aim is to align as nearly as possible the interests of individuals, corporations, and society. Within this context, the issue of the board composition is a central one that is widely discussed in both the public and private sectors. Below are sample guidelines for determining the competencies and composition of an effective board of a water company.

Majority. The majority of the members of the board should be independent of the main shareholder and of government agencies.

Selection of the members of the board. They should be selected in light of an evaluation of the water companies' need for expertise, capacity, and balanced decision making, and with the aim of ensuring that the board can operate independently of any special interests and function effectively as a collegial body. The chair of the board should demonstrate strong leadership capability and independence.

Personal attributes every member should bring to the board's work. Examples of those attributes are a demonstrated commitment to community service, support for the water companies' mission and values, personal integrity, and an understanding of the difference between the role of management and of the board.

Professional and technical backgrounds and skills of the members of the board. The board should combine skills and expertise in areas such as finance and business management, community needs, information technology, water resources management, and marketing.

Diversity of membership in the board. Members should be drawn from diverse community groups, gender, and generations. Look for senior executives in large corporations and industries to join local business and community leaders. In essence, look for members who bring a needed competency or skill and also add diversity to the board.

³⁷ However, in the electricity sector the government owns companies with boards chaired and mainly integrated by private sector representatives.

³⁸ This section was adapted from [Great Boards: Promoting Excellence in Healthcare Governance](#), Internet page.

WAJ is a powerful organization able to make decisions with little formal consultation or agreement with others.

Policy issue 3. Can the government provide reliable and adequate volumes of bulk water to MIYAHUNA and AWC in the medium to long term?

There is a high probability that WAJ cannot deliver additional water on time if the current policies of not recovering the full cost, particularly of ever increasing costs of new sources of raw water are not changed.

Policy issue 4. Can MIYAHUNA provide continuous water supply to its customers?

This is also a major challenge. Facing it will require a long-term commitment to substantially reduce water losses, as well as changes in deeply rooted ways of thinking of sector leaders. Policy makers and managers should recognize that the current level of non revenue water is not compatible with the extreme water scarcity in Jordan and, thus, that it is essential to act swiftly to improve performance. They should also recognize evidence in other parts of the world³⁹ that suggests that MIYAHUNA with the gross per capita water availability in Amman could provide continuous supply to

customers. The reports on the study tours to California, Spain and Colombia provide ample evidence of this possibility. The required changes in way of thinking are difficult as the current practice of rotating supply among different zones in the city has a long history, and neither water customers nor officials have experience with continuous water supply in Amman. For them, the rotational system is a way of life emerging from the country's water scarcity.

Keys to management success

A strong management team is essential for the success of both AWC and MIYAHUNA. The team should be able to create a supportive climate for the utility as it works towards the outcomes outlined in the *attributes*.

As indicated earlier in this report, ensuring the presence of a qualified management team should be one of the fundamental responsibilities of the companies' board of directors. Discharging these responsibilities requires careful selection of senior managers, effective working relationship between board and management, and systematic appraisal of senior managers' performance.

Frequently used management approaches and systems that experience indicates help water utilities manage more effectively are outlined below.⁴⁰

Leadership

Leadership refers both to individuals who can be effective champions for improvement, and to teams that provide resilient, day-to-day management continuity and direction. Effective leadership ensures that the utility's direction is understood, embraced, and followed on an ongoing basis throughout the management cycle. Leadership has an important responsibility to communicate with the utility's stakeholders and customers. It further reflects a commitment to organizational excellence, leading by example to establish and reinforce an organizational culture that embraces positive change and strives for continual improvement.

³⁹ The experiences in Dakar, Senegal and Conakry, Guinea provide additional support to this possibility.

⁴⁰ Source: The Attributes of Effectively Managed Water Utilities. Op.cit.

Strategic business planning

Strategic business planning is an important tool for achieving balance and cohesion across the attributes. A strategic plan provides a framework for decision making by:

- o Assessing current conditions, strengths and weaknesses;
- o Assessing underlying causes and effects; and
- o Establishing vision, objectives, and strategies.

Organizational approaches

There are a variety of organizational approaches that contribute to effective utility management. These include:

- o Actively engaging employees in improvement efforts (helping to identify improvement opportunities, participating in cross-functional improvement teams);
- o Deploying an explicit change management process that anticipates and plans for change and encourages staff at all levels to embrace change; and
- o Utilizing implementation strategies that seek, identify, and celebrate early, step-by-step victories.

Measurement and incentives

Measurement and incentives are critical tools to management improvement efforts associated with the attributes and is the backbone of successful continual improvement.





CHAPTER 7

LESSONS LEARNED: SHARE RESULTS AND LEARN MORE

“...except for a few countries where powerful economic pressure and political commitment played a key role, institutional reform...consists mainly of statements of intention, ceremonial changes or cosmetic adjustments.⁴¹

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What are the lessons and recommendations that can be drawn from the corporatization of the water and sanitation services in Amman and Aqaba? They are multiple because the success or failure of a reform like this is affected by the interrelationship of many variables. Nevertheless, this chapter focuses only on three broad themes that seem to be of particular interest for potential reformers: the supply and demand sides of reform; political support and the disciplined approach to reform; and feedback loops.

Supply and demand sides of reform require attention

Lesson 1. The demand for reform may come from inside or outside the water and

sanitation sector. It is essential, therefore, that reformers remain continuously on the alert for events signaling that demand. Aqaba and Amman are examples of these external/internal sources of reform. Aqaba's source appears to be from outside the sector, while Amman's appears to be from inside. The impetus for reform in Aqaba came from the law establishing the economic zone because the law introduced the potential for broad institutional change with a direct impact on the water sector. On the other hand, Amman's push for reform emerged from inside the sector in view of the role played by the experience of Aqaba water services, and the experience with the water and sanitation services in Amman under the management contract.

Lesson 2. Donor agencies affect the supply and demand sides of institutional reform. In Aqaba and Amman, USAID worked with the government on both sides of the equation by providing encouragement, and technical and financial support to the corporatization process including hiring consultants to assist in the reform process. The World Bank had a similar role in the management contract in Amman.

Political support and a disciplined approach are critical

Lesson 3. Reformers should engage and sustain strong political support for reform. They should also ensure the continuous involvement of high-level government experts and officials on a day-to-day

⁴¹ Saleth, R. Maria and Dinar, Ariel. op. cit. p. 183.

basis. Aqaba and Amman are examples of this approach, through the creation of reform committees led by high-level government officials with a clear mandate and with easy access to the highest levels in government. The highest level officials in the committees were the “champions” of the reform. It was important to appoint them early in the program to ensure their commitment to the process.

Lesson 4. Reformers should anticipate opposition from existing organizations and individuals that may feel threatened, and then develop a strategy to deal with their interests and concerns. This strategy should include elements like the extent, depth, methodology, and pace of the reform process. Reformers should be prepared to balance their objectives with those of the opposition to reach a satisfactory outcome.

Lesson 5. A disciplined approach to reform is essential. The committees carrying out the reform in both Aqaba and Amman set up highly effective working practices: keeping a rigorous schedule for meetings, maintaining a “safe space” in which the participants could share, create, and apply

sector knowledge relevant to corporatization, deliberating on the basis of papers and power point presentations prepared beforehand, preparing of notes to document deliberations and agreements, and maintaining a highly cooperative environment.

Lesson 6. Careful planning is critical for the transition from the old to the new organizational arrangements because there is no guarantee of success in setting up the new company. It is also important that the membership of the team responsible for setting up the new company be fundamentally the same as during the design of the reform. Moreover, continued technical support during the initial years of operation is important in assisting the management team to prepare for the future through innovative management programs.

Lesson 7. Consultants can provide an important ingredient in the reform by helping the government in conceptualizing it, in bringing specialized talent, in supporting reform implementation, and in bringing to the discussions issues not necessarily identified at the beginning of the process. The continuous presence of the consultants in the field make a significant difference.

Feedback loops need to be set up

Lesson 8. Reformers should also keep in mind that in the real world things frequently do not work as expected by decision makers. Public policies must be adapted when they fail or when circumstances change. This adaptability requires setting up systematic feedback loops helping to determine whether the reform is producing the intended results. Are the government and the new corporations truly delivering on promises made by the reformers? Are water companies meeting the challenge of providing high quality services and recovering the true cost of services? If the answers are no, how should the water companies and the government adjust their policies and practices, taking into account up-to-date performance data?



ANNEX I

AWC - Benchmark Indicators Fiscal Year 2004 and 2008

Indicador	2004	2008	Best practice
I. General information			
Total Population (000)	110	130	N/A.
Size of Governorate (Km2)	6,900	6,900	N/A
2. Operations			
Water Customers (000)	18	22	N/A
Wastewater Customers (000)	15	19	
Total Water Supplied (mm ³ /year)	14	17	
Total Water Sold (mm ³ /year)	11	13	
Water mains (kms)	530	553	
• Meters of pipes/customer	37	25	N/A
Wastewater collection mains (kms)	276	325	
• Meters of pipes/customer	19	17	N/A
Service Bursts/Leaks (No.)	1,379	2,361	
Employees (No.)	133	222	
Revenue Billed (M\$JD)	N/A	11	
Revenue Collected (M\$JD)	N/A	11	
3. Performance Indicators			
Population served (%)			
• With public water	99	99	100
• Public wastewater	73	93	100
Employees			
• Per (000) customers (W+WW)	4 13	5 17	< 1
Bursts/leaks per year			
• No. per km of water main	2	4	< 0.2
Water losses			
• % of water supplied	27	20	< 20
• m ³ /day/km of pipe	10	9	< 10
Financial			
• Collection ratio	N/A	1	1 (long term)
• Current ratio	3.2	N/A	> 2
• Accounts receivable (months)	7.2	N/A	< 2

N/A: Not applicable/available

Source: Chemonics (July 2005 report, Op. Cit.) and AWC financial statements

ANNEX 2

LEMA - MIYAHUNA Benchmark Indicators Fiscal Years 2004 and 2008

Indicador	2004	2008	Best practice
1. General information			
Total Population (000)	2,000	2,265	N/A
Size of Governorate (Km2)	7,579	7,579	N/A
2. Operations			
Water Customers (000)	365	423	N/A
Wastewater Customers (000)	260	362	
Total Water Supplied (mm ³ /year)	114	129	
Total Water Sold (mm ³ /year)	66	77	
Water mains (kms)	6,150	7,640	
• Meters of pipes/customer	17	18	N/A
Wastewater collection mains	2,031	2,262	
• Meters of pipes/customer	8	8	N/A
Service Bursts/Leaks (No.)	55,650	39,975	
Employees (No.)	1,272	1,314	
Revenue Billed (M\$JD)	33	51	
Revenue Collected (M\$JD)	33	51	
3. Performance Indicators			
Population served (%)			
• With public water	97	99	100
• Public wastewater	78	79	100
Employees			
• Per (000) customers (W+WW)	2.0	1.7	< 1
Bursts/leaks per year			
• No. per km of water main	9	2	< 0.2
Water losses			
• % of water supplied	46	38	< 20
• m ³ /day/km of pipe	21	19	< 10
Financial			
• Collection ratio	1.1	1.0	1 (longterm)
• Current ratio	1.2		> 2
• Accounts receivable (months)	4.4		< 2

N/A: Not applicable/available

Source: SEGURA/IP3 (January 2006 report, Op. Cit.) and MIYAHUNAiyahuna financial statements

ANNEX 3

MIYAHUNA's First Business Plan Strategic Planning: Tools, Steps, Results and Challenges

In 2007 MIYAHUNA started to develop its first business plan in response to company leadership expectations and to integrate all existing and new projects into a coherent plan with objectives, measurable results, performance indicators and funding estimates. The exercise started from an initial "strategic envisioning" retreat for the Management Committee that provided the vision, mission and values to company management.

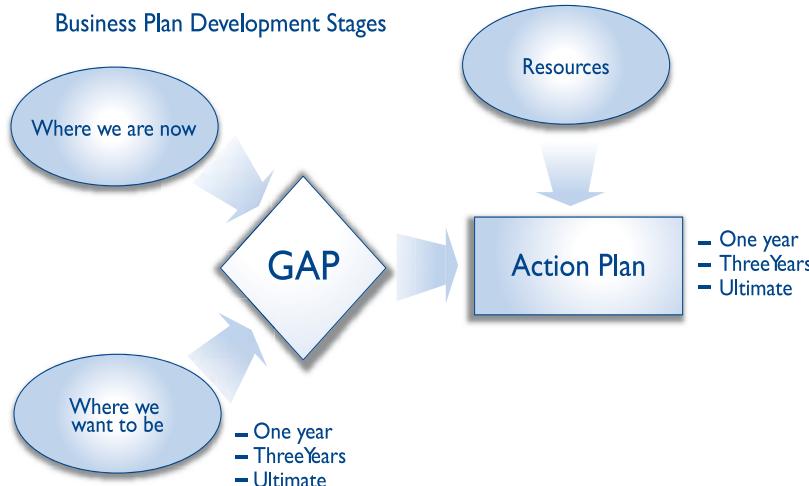
MIYAHUNA middle managers and heads of section worked for three months incorporating many perspectives and views

of the business plan and establishing a final selection of projects to incorporate in the plan. The business plan exercise was structured around three main steps as described in the graph below. An initial stage involved the collection and organization of data in each of the directorates. Subsequently, an exchange of ideas between multi-directorates teams provided a list of potential projects that later, in a third stage, were analyzed, the costs and benefits estimated and implementation plans developed in more detail.

The 2007-2011-business plan was organized around Six Strategic Initiatives as listed below.

1. Managing water scarcity
2. Establishing customer confidence
3. Meeting the demands of growth
4. Building planning and technical capacity
5. Partnering with Greater Amman Municipality
6. Enhancing MIYAHUNA's capabilities

Each initiative is supported by specific projects to be executed according to a priority order. Each project was defined by a team of employees from one or more directorates. The team leader was the person responsible for keeping track of project implementation using the Microsoft Project software. Each project had a summary document (Project Charter), and a summary document that included the main components of the project including the following four components: project overview and objectives, organization and management responsibilities, budget and resources, and risk and implementation constraints.



Project Charter:A Guide for Execution



During September and November of 2007, 19 projects were started in various areas of the company, as detailed in the table below. Capital investment projects included in the business plan were part of the launch in 2007.

BUSINESS PLAN PROJECTS LAUNCHED IN 2007

1. Internal and external communication and awareness program
2. General improvements for buildings, furniture and branding, construct new headquarters
3. Strengthen DZ management practices - technical and commercial
4. Improve the Customer Care Complaint Centre (CCCC)
5. Obtain laboratory accreditation and analyze consolidation of labs, improve and upgrade lab testing
6. Capital investment program in water/sewerage system
7. Develop and implement the IT Master Plan
8. Update and expand GIS data system
9. Improve customer service facilities
10. Improve response time for customer objections
11. Develop new finance & accounting system
12. Develop and implement a corporate training strategy
13. Develop human resource support systems
14. Build a protected location for archives and digital archive
15. Introduce preventive maintenance practices in sewer department
16. Develop energy saving program
17. Evaluate introduction of fluoride into water treatment process
18. Improve office to field communications and GPS/GIS tracking
19. Improve billing accuracy and reliability

CAPITAL INVESTMENT PROGRAMS LAUNCHED IN 2007

1. Rehabilitation of house connections and distribution pipes (KFW partial fund.)
2. Capital investment program in sewer extensions
3. South Amman water network rehabilitation
4. Capital investment program in water extensions
5. Backlog of new water and sewer installations
6. Implement program of sewer network recovery
7. Expedite backlog of sewer and water diversions
8. Overcome shortcomings of CIP projects
9. Water and wastewater master plans and hydraulic model (USAID funded)
10. Rehabilitation of Kharabashe pumping station
11. Increase capabilities of Technical Services Directorate
12. Improve material specifications

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Most of the projects listed above were to be funded in 2007. However, some projects were cancelled or postponed because of shifting of priorities and availability of funds.

Monitoring project implementation is the responsibility of the Business Planning Unit. Throughout the implementation period the Unit requests reports, following a pre-agreed format, from each team and keeps track of the MS Project files. A summary of business plan execution is presented monthly to the CEO. Meetings with each of the teams are conducted every two months.

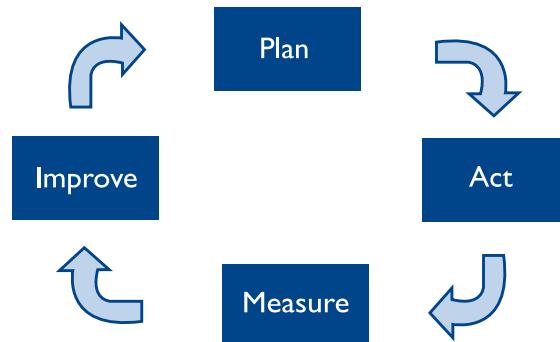
The following table summarizes the execution of business plan projects in 2008.

Business Plan Projects Executed in 2008

Initiatives	Total Projects	Projects in Execution	Initial Budget (JD Mill)	Obligated Funds (JD Mill)
1. Managing Water Scarcity	9	6	17.70	9.20
2. Establishing Customers Confidence	12	9	0.88	0.21
3. Meeting the Demands of Growth	7	6	18.10	23.58
4. Building Planning and Technical Capability	8	6	1.41	1.08
5. Improving Working Relationship with GAM	2	1	0.05	-
6. Enhancing MIYAHUNA Capabilities	21	13	3.64	1.34
Total	59	41	41.77	35.41

Although the brief period of execution shows positive results, the strategic planning program started at MIYAHUNA needs to work more on basic issues; such as the introduction of an incentive program for team members, directors and CEO; funding should be made available to assure plans' execution; and a clearer understanding of the importance and use of the business plan should take place at the level of the Management Committee.

- 48 The next business plan covering the period 2009 – 2013 is scheduled to be defined by mid 2009. Completed projects will be taken off the list, new projects will be included and an update of implementation schedules, fund availability projections and a list of targets will be included in the second version of the plan. The continuous improvement program, a main component of a modern corporate organization aspiration for MIYAHUNA, is principally located at the heart of the business plan implementation.



ANNEX 4

MIYAHUNA

Changing Employees' Compensation Plans

During the 7-year-management contract LEMA managed to deal with compensation restrictions to WAJ-seconded staff by awarding a series of allowances, basically developing an ad-hoc system to minimize the compensation gaps between private (LEMA-hired staff) and public employees (WAJ-seconded staff). Parallel to that, LEMA used position titling as a way to provide additional compensation for WAJ-seconded staff. The use of both systems resulted in a complex and unmanageable human resources structure that severely impacted work performance and management.

The reform of the compensation plan was part of the process of establishing MIYAHUNA. The reform included two main elements: the homogenization of salaries and allowances and the design and implementation of benefits in line with private sector practices. The latter included the provision of health insurance for all employees under a private sector system and the establishment of a saving fund with a company contribution.

The top management received additional benefits like car or a transportation bonus and a cell phone.

The 10 compensatory allowances to almost half of the employees were reduced to three targeted to specific posts: meter readers, cashiers, and exposed wastewater activities. The two boxes below show LEMA and MIYAHUNA's salary structures.

LEMA-WAJ SALARY STRUCTURE

Basic Salary:

Allowances:

1. Fixed Overtime
2. Additional Allowance
3. Basic Allowance
4. Personal Allowance
5. Reader Allowance:
6. Cashier Allowance
7. Family Allowance
8. Lemma Reward
9. WW Allowance
10. Car/Transportation Allowance

Total Gross:

Deductions:

- Social Security (5.5%)

Net Pay:

Company contributions:

- Social Security (11.5%)

- Health and life insurance

MIYAHUNA SALARY STRUCTURE

New Basic Salary:

Allowances:

1. Reader Allowance
2. Cashier Allowance
3. WW Allowance

Increases:

- Health Insurance (4%)
Cost of living (3%)

Total Gross:

Deductions:

- Social Security (5.5%)
Health Insurance (4%)
Savings Fund (5%)

Net Pay:

Company contributions:

- Social Security (11.5%)
Health Insurance (8%)
Savings Fund (5%)

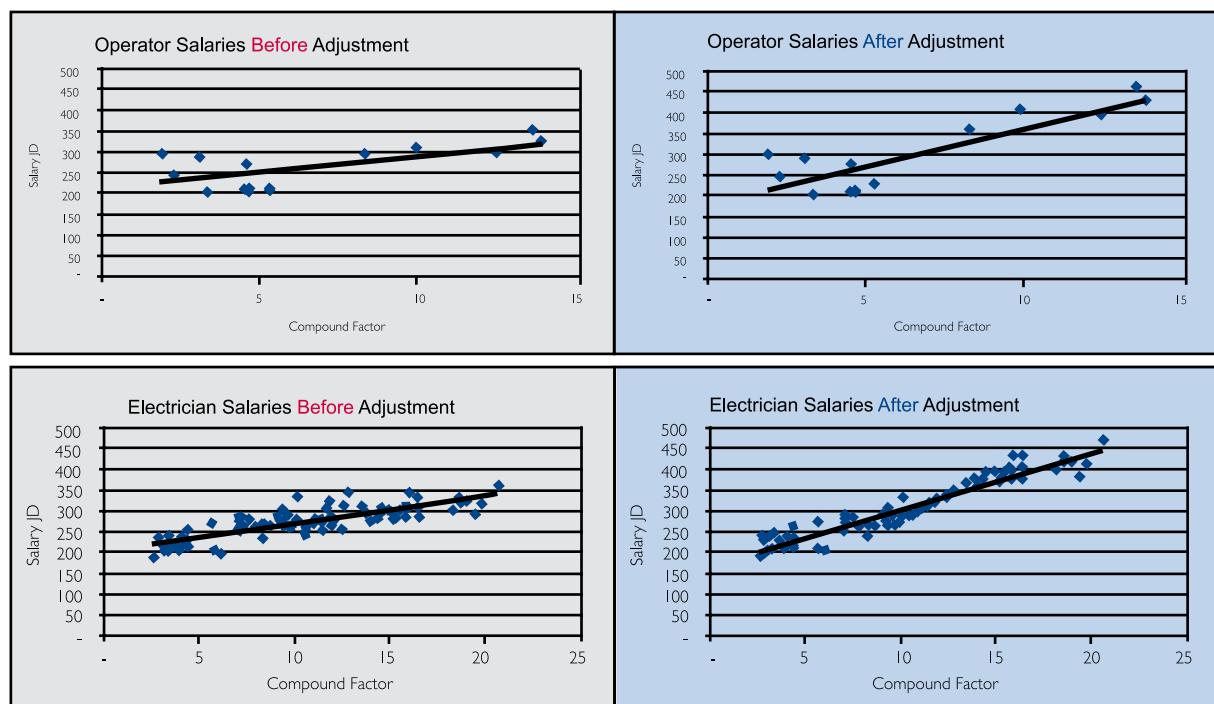
In addition, to reduce the gaps between private and public employees as well as to correct clear inequalities, the basic salaries were adjusted by a system that took into consideration three factors:

employee's job position, years of experience and education. Each of the factors was assigned a weight according to the level of requirements between education and experience as detailed in the examples in the table below.

The combined weighting factors of experience and education resulted in a compound factor that was applied to each salary level based on the average salary of a defined position. New basic salaries were plotted with the combined factor creating an average curve for the category. Each employee's salary corrected by the compound factor was then compared to the average of the category calculated with compound factors and an increase was calculated to reach a relatively comparable level between employees within the same work position. The adjustment results can be seen in the graphs below.

Weights Used for Basic Salary Adjustment

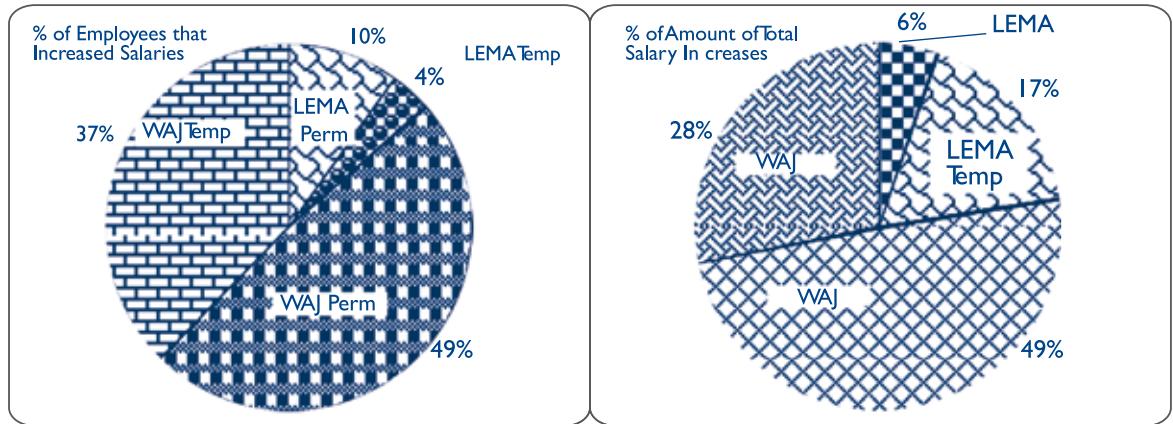
Position	Education Weight	Experience Weight
Accountant	60%	40%
Fitter	50%	50%
Guard	40%	60%
Manager	60%	40%



Salaries were increased relatively more for more educated/experienced people rendering a higher slope for the regressed curve in the graphs above.

The outcome of the adjustment can be seen in the graphs below that compare the impact on LEMA and WAJ employees. The former WAJ employees caught up with salary levels of their colleagues from the private sector.

Impact of Basic Salary Adjustment



As a result of the adjustment process, 86% of the total number of employees that had salary adjustments belonged to the WAJ group of employees and 76% of the total value of salary increases was to adjust basic salaries of WAJ employees.

ANNEX 5

MIYAHUNA

Branding Components and Process

MIYAHUNA's branding program includes three main areas: improving services; enhancing communications with stakeholders; and designing and introducing visual carriers (logos and colors). The three components of the branding are presented below.

Branding Components

Understanding	Brand Development	Visualization
<ul style="list-style-type: none">- Focus groups with customers- Focus groups with employees- Focus groups with decision makers- Company site visitsFinal report	<ul style="list-style-type: none">- Discussions with employees and customers- Critical words, critical images, critical messages- Other activities to identify the brand	<ul style="list-style-type: none">- Logo- Corporate design- Stationary- Vehicles- Uniforms- Digital media (emails, presentations)- Website

MIYAHUNA's logo and design selection counted on the participation of staff. A competition for best name, logo and slogan generated tens of responses that were taken into account by the branding advisors and were used to generate the final options. Once the design was defined and approved, adoption of the logo, stationary, car signage, signs, identification cards, and all media and visual production was completed in 2007.

- 52 The branding process continues on many fronts through communication activities, a new code of conduct for employees, rules and regulations, office and plant improvements, and the implementation of longer term projects, like construction of a new building and improvement of all customer services facilities.



ANNEX 6

Ten Attributes of Effectively Managed Water Utilities⁴²

Product Quality

Produces potable water; treated effluent, and process residuals in full compliance with regulatory and reliability requirements and consistent with customer, public health, and ecological needs.

Customer Satisfaction

Provides reliable, responsive, and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.

Employee and Leadership Development

Recruits and retains a workforce that is competent, motivated, adaptive, and safe-working. Establishes a participatory, collaborative organization dedicated to continual learning and improvement. Ensures employee institutional knowledge is retained and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development and strives to create an integrated and well-coordinated senior leadership team.

Operational Optimization

Ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations. Minimizes resource use, loss, and impacts from day-to-day operations. Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.

Financial Viability

Understands the full life-cycle cost of the utility and establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates—consistent with community expectations and acceptability—adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.

Infrastructure Stability

Understands the condition of and costs associated with critical infrastructure assets. Maintains and enhances the condition of all assets over the long-term at the lowest possible

life-cycle cost and acceptable risk consistent with customer, community, and regulator-supported service levels, and consistent with anticipated growth and system reliability goals. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.

Operational Resiliency

Ensures utility leadership and staff work together to anticipate and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and effectively manages a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.

Community Sustainability

Is explicitly cognizant of and attentive to the impacts its decisions have on current and long-term future community and watershed health and welfare. Manages operations, infrastructure, and investments

⁴² Source: Effective Utility Management. A Primer for Water and Wastewater Utilities, page 4.

to protect, restore, and enhance the natural environment; efficiently uses water and energy resources; promotes economic vitality; and engenders overall community improvement. Explicitly considers a variety of pollution prevention, watershed, and source water protection approaches as part of an overall strategy to maintain and enhance ecological and community sustainability.

Water Resource Adequacy

Ensures water availability consistent with current and future customer needs through long-term resource supply and demand analysis, conservation, and public education. Explicitly considers its role in water availability and manages operations to provide for long-term aquifer and surface water sustainability and replenishment.

Stakeholder Understanding and Support

Engenders understanding and support from oversight bodies, community and watershed interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. Actively involves stakeholders in the decisions that will affect them.



ANNEX 7

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