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CASE STUDY

Asia • Philippines

Manila Water Company: Improving Water and Wastewater Services for the Urban Poor

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Summary

Manila Water Company, Inc. (Manila Water) is a water and wastewater concessionaire operating in the east service zone of Metro Manila. Since assuming operations in 1997, Manila Water has connected over 140,000 low-income households to the piped water system and provided access to clean water to over 860,000 low-income individuals. At the same time, Manila Water has improved water and wastewater services throughout their entire service area in terms of service coverage, reliability, customer service and water quality. The case examines the special challenges and opportunities of delivering water and wastewater services to the urban poor and the innovative approaches that Manila Water has adopted to expand coverage and protect the watershed from which the water is sourced.

"The success of our company is brought about by several unique elements, which, when combined, make Manila Water far greater than the sum of all its parts. One such unique element is the ability of the organization to align its sustainable development initiatives with its business objectives. There was a conscious effort to find this alignment, and in the process, we were able to improve the lives of more people, especially those in the poorer sectors of our society, while we also attain our own business goals."

Antonio T. Aquino, President, Manila Water

The Dismal State of Water and Wastewater Services in Metro Manila

Metro Manila has one of the oldest water systems in Asia, with some sections dating back to 1878. By 1997, Metro Manila's water system was losing almost two-thirds of the water it produced (so called non-revenue water) to leaks and illegal connections. The government utility, the Metropolitan Water and Sanitation System (MWSS) had the highest rate of non-revenue water among major cities in Asia. Piped water reached only about 60 percent of Manila households, with the poor - at least 40 percent of the population - disproportionably underserved by the network. Households with piped water received intermittent service, usually under low pressure. Less than 7 percent of the population was connected to sewerage services.

The government utility was heavily in debt, owing US$880 million to various creditors. Servicing the MWSS debt prohibited government spending on critical public goods and services, including improvements to the water and sewerage system. With 8000 employees, MWSS was also known to be overstaffed and inefficient. Various studies indicated that Metro Manila would soon face serious water supply shortages if nothing was done to correct operational inefficiencies and years of under-investment in the infrastructure.

Having achieved some level of recent success with the privatization of the Philippine power utility, President Ramos created the MWSS Privatization Committee in July 1994 with a view to improve the water and wastewater situation in Metro Manila through private sector participation. Congress passed the “Water Crisis Act” to allow privatization of the water utility under President Ramos in June 1995.

The 1997 privatization[1] of MWSS was the largest scale water utility privatization ever completed. It was undertaken to address chronic problems in the Metro Manila water system and the abject state of sewerage and sanitation services. Through a 25-year concession contract, the Philippine government sought private investors in order to achieve three main objectives:

1. Renew and expand water and wastewater service coverage;
2. Improve delivery of services; and
3. Increase the operating efficiency.

The Challenges of Water and Wastewater Services for the Urban Poor


Informal settlement of Areyenda on Laguna Lake in Metro Manila

In addition to the challenges faced by MWSS overall, there was an even greater crisis in improving access to water and wastewater services for the poor. The poor were disproportionately underserved by the MWSS water network and relied on alternative water providers[2], public standpipes or illegal connections for their water. Many alternative water providers charged higher tariffs per litre, because of higher transaction costs in the provision of their service.

Inadequate provision of water and wastewater services to the urban poor is not uncommon around the world. Some of the reasons behind the inferior service include:

- Rapid urbanization arising from the migration of poor people from rural areas in search of employment has resulted in many informal settlements. The lack of planning in these communities makes services more difficult to install.
- Many poor do not own title to their land or have a formal lease agreement, which is often a requirement for service connections.
- Poor communities are often located on undesirable land that is physically difficult to service (rocky, swampy, etc.)

[1] The term privatization is used interchangeably with what is actually a contract type – the concession contract – consistent with the terminology of MWSS, and Manila Water. By some definitions, privatization would imply a full divestiture of the system to private investors but here it is meant to refer to the Concession.

[2] Alternative water providers include local entrepreneurs, cooperatives, water truckers, and to a lesser extent for the poor, housing estate providers. Water sources for alternative water providers include wells, surface water and illegal connections to the MWSS network.

Public utilities in developing countries tend to be underfinanced so extensions to the existing infrastructure is unlikely to happen at all - but even less likely in poor communities with little political power or ability to pay bribes to water officials.

Privatization of Water is Controversial

Privatization of water is a contentious and polarizing topic, raising many complex political, social and economic issues. Opponents of water privatization frequently claim access to water as a basic need and public good. In contrast, supporters often claim that greater efficiencies may be generated by involving the private sector. The main points of complexity around the subject of water privatization hinge around the following facts:

Water is essential for life. Water is unlike other goods produced by utilities because it is a biological necessity. Some campaign groups see water as a human right and believe that no one should make a profit from the provision of water services.

Water directly impacts human development. Providing clean and reliable water and wastewater services to people, especially to the poor, has a significant and direct development impact. Preventable water and sanitation related illness are mitigated; time previously spent fetching water (usually women) is freed to pursue other activities. Thus improving water and sanitation services contributes to poverty reduction and growth through impacts on health, gender equity, private sector development and environment and water resource management.

The poor are the biggest and most challenging untapped market. In Metro Manila, the rich were already largely connected to the MWSS system. About 40 percent of Metro Manila are poor and the vast majority of urbanization arises from inward migration of the rural poor in search of employment. So the poor represent a significant unserved market for water and sanitation services. However, difficulties in servicing unplanned communities, perceptions around ability to pay for services and other regulatory barriers have traditionally dissuaded service providers from directly addressing the needs of the poor.

As a result of these complex issues, the privatization of MWSS, and hence, Manila Water, remains under the watchful eye of the media and numerous civil society organizations. These organisations represent concerns about access to water and wastewater services for the poor, the environment, consumers, and other special interests.

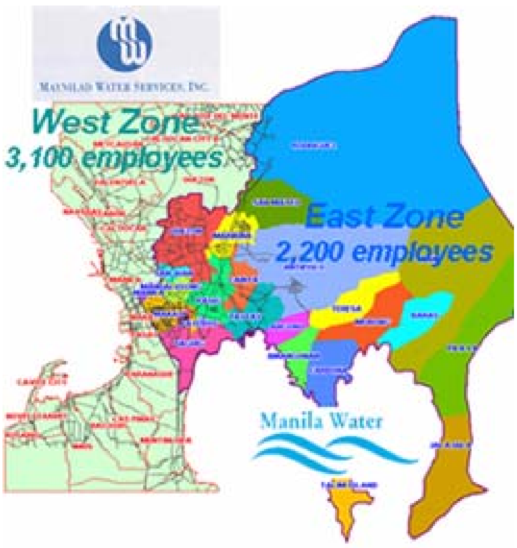
The terms of the Concession Agreement between the government and the Concessionaire were drafted with these issues in mind, as well as the government's objectives of expanded service coverage with improved service delivery and increased operating efficiency.

The Concession Agreement

The Concession Agreement clearly laid out the terms of the privatization, dividing MWSS's operations into east and west service zones. Based loosely on the Paris (France) model of water and sewerage provision, the division was designed to ensure greater competition during bidding and allow benchmarking of performance throughout operation.

Four companies bid for the right to operate and invest in the two 25-year water concessions. The concessions were won on the basis of the largest reduction in tariffs. Manila Water submitted the lowest bid for both concession areas; however, the privatization stipulated that each concession must be operated by a different concessionaire. Thus, Manila Water was awarded the east concession, and Maynilad Water Services Inc. (Maynilad) was awarded the west concession, at a 74 percent and 43 percent reduction in tariff respectively, from MWSS rates.

Figure 1: MWSS concession area



Under the terms of privatization, MWSS retained ownership of the assets (treatment plants, pumping stations, pipes, land, etc.) and established a regulatory body that would ensure that service standards were upheld and tariff rates were balanced. The concessionaires were granted the rights of use of MWSS assets at no cost, along with the right to collect revenues throughout the 25-year term, provided the service targets in the concession were met. For example, the 2006 service targets for the East zone required water service to 98 percent and sanitation and sewer service to 55 percent of residents. Non-performance would be met with financial penalties.

Some of the pro-poor elements of the Concession Agreement are outlined below.

Performance Targets

- Aggressive coverage targets for water and sewerage services set as a percent of the population served for each five-year period of concession
- Alternative service providers may contribute to achievement of coverage targets with the agreement of the Concessionaire
- Individual connections *or* standpipes may be used in low-income communities to meet coverage targets

Tariffs and connection fees

- Progressive block tariff structure – the first 20 cubic meters of water is cheapest, the price increases with greater volumes consumed
- Maximum price set for installation of a household connection
- Instalment payment plans permitted for new connections

The Manila Water Company

Manila Water operates in the East zone of Metro Manila which encompasses 23 cities and municipalities spanning approximately 1400 square kilometres and is home to approximately 5.3 million people. Manila Water's 1997 bid was designed and won by a consortium led by the Ayala Corporation - one of the oldest and largest business conglomerates in the Philippines - in partnership with United Utilities, the largest private operator of water and wastewater systems in the UK. Mitsubishi Corporation (Japan) and Bechtel Corporation[3] (USA) were investors in the consortium. Manila Water has been publicly traded on the Philippine Stock Exchange since March 2005. However, the Ayala Corporation remains the largest shareholder (30 percent), followed by United Utilities (12 percent).

Guided by the strong leadership of the President of Manila Water, Antonio (Tony) Aquino, the corporate culture centres on employee development. Not unlike the terms of the Concession Agreement, the company places a strong emphasis on performance, and every Manila Water employee has both individual and team targets on which they are continuously evaluated. In support of these objectives, Manila Water offers exceptional training and recognizes achievement with awards and ceremonies. Other benefits include an employee share-ownership plan, and health and safety programs based on international standards. Manila Water has won numerous awards in recognition of the company's exceptional human resource management. Manila Water consistently acknowledges that the employees are at the core of its success.

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[3] Bechtel sold all ownership shares in 2004

Service Performance in the East Zone

Since Manila Water took over the East zone in 1997, both the state of the infrastructure and customer service levels have improved. The company has invested more than 17.5 billion[4] pesos in capital works, which has paid off in terms of performance and efficiency. The customer base has doubled, the non-revenue water has decreased, availability of service is consistent and water quality is excellent. At the same time, the ratio of employees to service connections has significantly decreased. See Table 1: Manila Water Performance Indicators, 1997 to 2005.

Table 1: Manila Water Performance Indicators, 1997 to 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Low-income households connected ('000)	-	1.5	14	28	51	64	101	123	141
Households connected ('000)	325	340	390	409	428	441	515	556	600
Non-revenue water	63%	55%	53%	51%	52%	54%	51%	43%	36%
Billed volume (million l/day)	440	594	645	706	758	751	767	825	864
Total pipeline laid (kms)	-	-	5	30	174	235	424	793	1274
Population served (millions)[5]	3.0	3.1	3.6	3.76	3.96	4.05	4.7	5.1	5.5
Continuity of supply	26%	n/a	n/a	n/a	55%	83%	83%	89%	95%
Employees per 1000 connections	6.3	5.1	4.8	3.8	3.6	3.2	2.9	2.8	2.2
Revenues (US$ '000)[6]	13,965	24,212	33,372	32,449	31,815	50,480	67,965	76,116	108,597
Net income (US$ '000)	(1,260)	(1,639)	2,549	2,753	3,116	10,499	20,706	23,628	37,895

Source: Company files, 2005 Annual Report

Wastewater services have also improved, with a doubling of sewerage connections and sewerage treatment capacity since 1997. Manila Water is tackling sanitation services by offering free septic tank desludging to their customers – almost 20,000 since 1997.

[4] Around US$340 million at mid-2006 exchange rates
[5] Based on an average of 9.2 persons per household, as set by consultants to the Concession Agreement.
[6] Revenues, net income and assets are converted at December 31 exchange rates for each year

These operational improvements were achieved while maintaining a solid financial record. Manila Water was profitable by the third year of operation and has developed a reputation as a successful and efficient company. Because of the Company's track record, Manila Water has enjoyed the support of international investors and access to financing unavailable to the government (MWSS), or the West zone concessionaire (Maynilad). See Appendix A: The West Zone.

One of the most important outcomes in Metro Manila's East zone has been the increased provision of high-quality water services to the poor. Manila Water recognized early on that they would have to find innovative ways to operate in poor communities in order to meet their service coverage targets.

Clean Water for the Urban Poor

Similar to many urban centres worldwide, the population of Metro Manila is rapidly expanding as a result of migration from rural areas. Housing in the city has not kept pace with urban growth; as a result, many people live in slums, or squat in informal settlements, with inadequate or non-existent water and sanitation services. But poverty does not necessarily correlate with lack of willingness to pay for essential services such as water. In these low-income areas without service connections, people typically purchase water in jerry cans from street vendors (at a higher price than they would pay to Manila Water) or rely on illegal connections to the water system. In some cases the poor pay up to seven times[7] more per cubic metre of water than network-connected customers – for lower quality water and inconvenient service. Sewerage in low-income areas is non-existent and sanitation spotty.

An estimated 40 percent of Metro Manila's population are poor. Manila Water views the poor as potential new customers and sees the associated under-serviced areas as potential growth opportunities for expansion; excellent boosters for achieving the service targets of the Concession Agreement. Servicing low-income areas also represents an important source of cost savings through non-revenue water efficiency improvements. These were all drivers for Manila Water's flagship program, Tubig Para Sa Baranguy (TPSB) meaning 'Water for the Community'.

The TPSB projects rely on Manila Water's ability to identify or help organize local resident cooperatives to collectively take responsibility for a community water connection and metering scheme. With a community organization in place, Manila Water typically installs a "mother meter" to the whole community and individual sub-meters to serve four or five households each. The whole community is accountable for paying the gross water consumption read from the mother meter and each family settles its own bill with the community representative according to the sub-meters.

[7] A 1997 Asian Development Bank survey found the cost of water in Manila from water vendors to range from 7 to 16 times more per cubic metre than the cost for consumers with a house connection (i.e. to the piped water network). See Appendix B for a cost comparison.

For the company, the TPSB program has reduced illegal connections while lowering maintenance costs. For the poor, the TPSB program has provided clean water at a lower cost than these customers would otherwise pay, and with a better quality of service. By providing the poor with access to clean drinking water, health has improved and families no longer devote large amounts of time and energy to carry drinking water each day.

The number of poor households serviced by the MWSS network in the East zone increased from 1500 in 1997, to 144,000 in 2006 – estimated at 860,000 people. This number includes both those served by the MWSS network directly, as well as those served by alternative water providers in agreement with Manila Water.

The success of the TPSB program spawned other similar programs, such as the Kabuhayan Para Sa Barangay (KPSB) or Livelihoods Program. Manila Water partnered with Bank of the Philippine Islands to offer microfinance loans. KPSB has provided close to 1 million pesos in microfinancing and small loans to more than 350 low-income families for start-up businesses.

Alitaptap Multi-purpose Cooperative in the Villa Beatriz community of Metro Manila

Since 2005, the KPSB program has shifted focus to building capacity in local communities for Manila Water's supply chain. The first major partnership was with a pipe rethreading cooperative - Alitaptap Multipurpose Cooperative - who supplied meter protectors and other small piping components directly to Manila Water. The twelve employees of the Alitaptap Cooperative were previously unemployed and unskilled and were trained by Manila Water to undertake the pipe rethreading work. Manila Water also financed the Cooperative and leased them the major equipment at an affordable rate to avoid the otherwise prohibitively high start-up costs. A second partnership is being developed with a printing cooperative.

For the company, KPSB is developing capacity of local suppliers from whom they can directly source goods and services as well as enriching the livelihoods in the communities in which they operate, which helps develop the local economy and build the company's relationship with the community. For the community, KPSB is creating employment and building transferable skills.

Community sanitation or Sanitation Para Sa Barangay (SPSB) projects are also being developed for low-income areas, many of which have little or no wastewater services. Each community sanitation strategy is developed in consultation with the community to devise an affordable and desirable outcome. SPSB projects are especially challenging since informal settlements are typically situated on land where elevation and topography do not allow for communal septic systems. However, in partnership with the community and community based organizations, Manila Water is looking at various options on a case by case basis.

Success through Sustainability Strategies

Manila Water's success is underwritten by a strong technical team tasked with operating and maintaining the infrastructure and designing new systems to increase performance and reliability. But Manila Water also approaches the many social challenges of the privatized water industry as core business issues. Non-financial issues - quality of service, protection of water resources, ability to reach the poorest, employee empowerment, transparency and stakeholder consultation – are treated as integral to delivering shareholder value and fundamentally part of the organizational culture. The company devised a Sustainable Development framework to help approach social and environmental issues more strategically. Some of the sustainability initiatives are outlined below.

EXTERNAL STAKEHOLDERS

Manila Water has a deliberate and proactive stakeholder management strategy, valuing the importance of external stakeholders to their business.

- Manila Water is a large source of local employment; they estimate more than 10,000 jobs have been generated from their operations since 1997.
- The company nurtures supplier relationships by treating them as partners. Accredited service providers receive training through the vendor "Suki" program, building suppliers' capacity and quality of workmanship as well as increasing their marketability beyond Manila Water's supply chain.
- Financing for contractors is offered in partnership with a local bank, to promote the growth of local entrepreneurs.
- Relevant civil society organizations are proactively contacted for dialogue, and in some cases, partnerships. Some community groups have publicly endorsed Manila Water's request for tariff increases.
- For community relations, Manila Water does not announce profits without simultaneously citing operational accomplishments supported by facts and figures.
- Every employee including the Senior Management team is encouraged to be in touch with their customers - including low-income customers - by "walking the line" and listening to customer concerns in their neighbourhoods.

ENVIRONMENTAL INITIATIVES

Metro Manila has some serious environmental challenges including deforestation, poor air quality and polluted waterways. Some of Manila Water's environmental initiatives to address these issues include:

- Programs designed to protect the watersheds, for example planting trees to prevent erosion. This has the financial benefit of improving turbidity of the water source and reducing chemicals required in treatment.
- Biosolids (the dried cake from the sewage treatment process) are shipped from sewage treatment plants to the areas just outside Metro Manila most affected by Mount

Pinatubo's volcanic eruption, for application as a soil conditioner for reforestation and for non-food producing agriculture.

- Free greywater is provided for irrigation of boulevards and other green space in the city.
- The development of a waste-to-energy project from biogas at one of the sewage treatment plants. It will be registered as a Clean Development Mechanism (CDM) under Kyoto, and emission credits will be sold.

Challenges

Of course, Manila Water's success has not come without challenges. Some of the major non-technical challenges from the perspective of the business have included public relations, right-of-way encroachment and regulatory issues.

PUBLIC RELATIONS

Although Manila Water has been successful in the East zone – expanding service coverage and improving service quality – the West zone concessionaire (Maynilad) experienced serious financial difficulties and failed to meet service targets while simultaneously increasing tariffs. Many campaign groups and privatization critics have vocally pointed out the failures of the privatization in the West zone. As a result of much domestic and international publicity around Maynilad's shortcomings, many people hold a perception that the privatization of MWSS has been unsuccessful. Manila Water must constantly work to differentiate itself.

RIGHT-OF-WAY ENCROACHMENT

The rapid growth of Metro Manila resulted in many informal settlements being established along Manila Water's underground watermain right-of-ways (ROWs). In planned communities, minimum clearances along the pipe network, including air vents and valves, would be enforced. But the seemingly open land of MWSS ROWs was prime real estate for informal settlers to construct shanties. In some cases, bedrooms and kitchens have been constructed over and around air vents and valve chambers. The growing encroachment on these ROWs has created a number of public health risks such as pressure release at blow-off valves, and contamination of water by tampering. A worst case scenario played out in 2003, when tragically, a teenaged boy fell through an air vent cover and drowned in the water pipeline.

REGULATION

Manila Water operates in a highly regulated business environment. The Concession Agreement, overseen by the Regulatory Office dictates tariff prices. As a publicly traded company seeking growth and shareholder value, the company must look for other sources of revenue. Fortunately, Manila Water sees much opportunity for expansion on the foundation of success in the East zone.

Some of the challenges from the perspective of the poor include:

TARIFF STRUCTURE

Block tariffs designed to benefit the poor are actually penalizing them since many of the poor are being serviced through communal service connections. With multiple households connected to one meter, the total consumption is relatively high and thus the average tariff is at a higher rate than each household would pay if they had an individually metered connection (although still lower than the rates charged by small scale providers). Administration of the communal service connections incurs an additional cost not borne by individually connected households.

PARTIAL EXCLUSIVITY

The Concession Agreement allows for third party operators as legal water service providers, with the agreement of the Concessionaire. Many argue that an open market (i.e. no monopoly) would encourage greater competition and better services for the poor.

Business Development Opportunities

The East zone concession is Manila Water's core business. Within the East zone, the company aims to improve and expand service to reach still numerous unserviced or underserviced households. The East zone is projected to grow from 5.3 million in 2005 to 8.6 million by 2022; so there is also opportunity for expansion of the network to meet demand from population growth. Recently, Manila Water has expressed interest in bidding on the West zone (see Appendix A: The West Zone).

Beyond Metro Manila, Manila Water is looking to take on new business within the Philippines as well as internationally in Asia. The company is selectively marketing the provision of services including operations and maintenance contracts, bulk water source development, water distribution management, customer service process management, and commissioning of new water infrastructure systems.

Conclusion

Manila Water has significantly increased its customer base by focusing on customer service, coupled with innovative business models for the provision of services to low-income communities. At the same time Manila Water has reduced illegal connections and non-revenue water, fostered goodwill in the community, and instilled a sense of pride in their employees.

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Appendix A: The West Zone

The West zone has around 7 million customers, or 60 percent of the population of Metro Manila. The area includes old Manila and the majority of the city's poor. The Concession Agreement structured the West zone to inherit 90 percent of MWSS debt. There was a larger existing customer base, with less per capita investment required to meet the service targets in the West zone, therefore you would expect lower tariffs required. The debt burden was designed to equalize the tariffs between the two zones.

Maynilad Water Services Inc. was awarded the west concession in 1997. Benpres Holding Company was the Filipino majority owner (owned by the Lopez family of Manila) and the French multinational Suez Lyonnaise des Eaux (now Ondeo), the minority owner.

Benpres never recovered from the Asian Financial Crisis of the late 1990's, and debt problems resulted in Benpres' December 2002 announcement that they were pulling out of the concession. From 2003-2006 the government worked with Benpres to retain the concession. MWSS granted Maynilad tariff increases and forgave the payment of concession fees. But finally in 2006, Benpres handed the concession back to the government, along with millions of dollars of debt. Benpres' 84 percent stake in Maynilad is now held by the government (MWSS), and the remaining 16 percent retained by Ondeo/Suez.

The Regulatory Office (RO) was apparently satisfied enough with Manila Water's performance to change the terms of the Concession Agreement. They removed the clause requiring different Concessionaires to operate the two service zones (east and west), opening up the opportunity for Manila Water to bid for the West zone concession contract.

Appendix B: Comparison of Tariffs

	Average cost per cubic metre of water (Philippine pesos/m^3)
Manila Water customer [A,B]	13
TPSB customer [A,C]	23
Water vendor customer [D]	57 - 125

Notes:

A. Based on Manila Water Company tariffs for residential customers, effective 7 October, 2006

B. Based on monthly consumption of 50 m^3 (McIntosh and Yñigues survey reported the average monthly household consumption in Manila to be 44 m^3 /month)

C. Based on five households per network connection and an average monthly household consumption of 50 m^3 for a total of 250 m^3

D. Based on available data. The McIntosh and Yñigues 1997 survey found the unit price of water from water vendors to range from P57 to P125/m^3. A 2004 Asian Development Bank case study cites one East zone resident that paid P100/m^3 before Manila Water introduced the TPSB program to their community in 2000; she paid P15/m^3 under the community-managed water connection at the time of the study. Interviews with Manila Water and MWSS-RO in May 2006 reported water vendor rates of P50/m^3 and P100-P150/m^3 respectively.

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The information presented in this case study has been reviewed and signed-off by the company to ensure its accuracy. The views expressed in the case study are the ones of the author and do not necessarily reflect those of the UN, UNDP or their Member States.

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