



ADB

IN THE
PIPELINE
WATER
FOR THE
POOR

INVESTING IN SMALL PIPED
WATER NETWORKS

Asian Development Bank



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Printed in the Philippines.

Publication Stock No. BBK189308
ISBN 978-971-561-747-5

Cataloging-In-Publication Data

Asian Development Bank.

In the pipeline: water for the poor – Investing in small piped water networks.
Mandaluyong City, Phil.: Asian Development Bank, 2008.

1. Water. 2. Water supply. 3. India. 4. Indonesia.
5. Philippines. 6. Viet Nam. 7. Case studies. I. Asian Development Bank.

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Acknowledgments

This tool kit was prepared by the Energy, Transport, and Water Division (RSID), Regional and Sustainable Development Department (RSDD) of the Asian Development Bank (ADB). The regional technical assistance (RETA) 6265: Implementing Small Piped Water Networks, was executed and managed by K.E. Seetharam, Director and Visiting Professor, Institute of Water Policy, Lee Kuan Yew School of Public Policy; Ma. Virginita A. Capulong, Senior Programs Officer, Central and West Asia Regional Department; and Theresa Audrey O. Esteban, Sector Officer, RSDD, through a project team headed by Antonio de Vera, Coordinator; Corinne Canlas, Events Management Specialist; Cirio Ernani Cruz, Water Supply Consultant (Philippines); Roberto Demigillo, Survey Consultant (Philippines); Le Anh Dao, Water Supply Consultant (Viet Nam); Anil Dutt Vyas, Water Supply Consultant (India); Madhu Sharma Bharti, Survey Consultant, (India); and Nam Phan Quoc and Phi Luu Van, Survey Consultants (Viet Nam). The SPWN Tool Kit further benefited from relevant comments by ADB staff and the following specialists: Jema Sy and Leila Elvas of WSP-IBRD; Foort Bustraan, Advisor, USAID-ESP; Dondi Alikpala and Nathaniel Santos of the National Water Resources Board, Philippines; Alma Porciuncula, USAID-PWRF Support Program Chief of Party; and Batdelger Luuzan, PPP Policy Specialist, UNDP through a review of drafts. The team would also like to acknowledge the participants of the Regional Forum on Innovations for Connecting the Poor: Small Piped Water Networks for their invaluable contributions to making the tool kit possible.

Abbreviations

ADB	–	Asian Development Bank
AMC	–	Ahmedabad Municipal Corporation
CBO	–	community-based organization
ESP	–	Environmental Services Program
GCS	–	government–corporate–society
HOA	–	homeowners’ association
LGU	–	local government unit
MWSS	–	Metropolitan Manila Waterworks Supply and Sewerage System
NGO	–	nongovernment organization
OBA	–	output-based aid
ODA	–	official development assistance
PDAM	–	Perusahaan Daerah Air Minum (local water utility in Medan, Indonesia)
PWP	–	piped water provider
RETA	–	regional technical assistance
SPWN	–	small piped water network
SSPWP	–	small-scale private water provider
SSWP	–	small-scale water provider
TGWSC	–	Tien Giang Water Supply Company
USAID	–	United States Agency for International Development
USAID-ESS	–	United States Agency for International Development-Environmental Services Program

Note

In this publication, “\$” refers to US dollars.

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Introduction

Introduction

The Small Piped Water Network (SPWN) tool kit was conceived and developed as a result of the lessons and experiences from the Asian Development Bank (ADB) regional technical assistance (RETA) 6265: Implementing Pilot Projects for Small Piped Water Networks, as well as the experiences of professionals and development agencies in implementing similar projects.

Objective of the Tool Kit

This tool kit is intended to be used as a guide for governments, development agencies, utilities, and civil society in putting up or implementing piped water projects using the SPWN concept for urban poor or rural communities without access to piped water systems.

Where the Tool Kit Can be Used

There are instances when the main water utility will not or cannot directly connect households to the system. These occur (i) when security of land tenure is an issue; (ii) where residents cannot afford the connection charges, even on a limited amortization basis; (iii) where the technical standards of the utility cannot be applied, which increases the risk of damage or theft; (iv) where the income characteristic of the household is not regular, jeopardizing the utility's monthly collections; and (v) when the utility's lines are far or water supply is limited. In many cases, the utility may put up bulk meters, assign someone to receive payments from those getting water from the bulk meters, and bill monthly for the bulk meter consumption. While beneficiaries of this model obtain water from the main utility itself, residents usually pay much more¹ and do not have the convenience of piped water services in their houses; they have to spend time in securing and storing supplies from the bulk metered connection. In some cases, residents resort to getting costly water from vendors. The tool kit can provide a quick and interim solution for these households, usually located in the urban fringe or rural areas, which do not have access to individual house connections from the main utility.

How to Use the Tool Kit

The tool kit contains five modules:

- **Project Study.** This module contains the preliminary agreements needed to be obtained from the different stakeholders during the initial stage of the project and the conduct of a project study.

- **Business Models and Instruments.** This module provides templates of implementation (business) models and contract documents that can be used by a main utility, small-scale water provider, or community-based organization in setting up the SPWN.
- **Financing.** This module assists proponents in where and how to secure financing.
- **Sustainability and Acceptability Measures.** This module provides measures to ensure the acceptability and sustainability of the SPWN.
- **Regulatory Measures.** This module gives the proponent the requirements for creating legal and contractual conditions (formalizing licenses, exit and take-out procedures) in order for the SPWNs to be integrated into the water supply chain to the extent possible.

Overview of Small Piped Water Networks

Overview of Small Piped Water Networks

Problem Identification

During 2002 and 2003, the Asian Development Bank (ADB) carried out regional studies to provide an overview of water suppliers beyond formal water utilities. The results, published by ADB in 2004, showed that millions of people, especially the poor, remain underserved or not served at all because of (i) poor and inadequate national and local government policies, (ii) poor utility governance, (iii) low and irrational tariffs that benefit the nonpoor and disadvantage the poor, and (iv) legal and other institutional impediments to serving the poor, especially lack of land tenure. Utility service levels are often not tailored to demand but are based on technical standards that increase service cost beyond the capacity of low-income families. Moreover, payment systems are not well adapted to the conditions and constraints of the poor, such as irregular income and small consumption capacity.

The report concluded that city officials, formal utilities, and local banks should work with small network entrepreneurs who can bring water supplies to the poor and disadvantaged immediately, on an agreed-upon interim basis until the utility is able to do so. These small networks should be included in city development strategies and formalized with licenses and exit strategies. The study concluded that ADB should refine the study recommendations. Thus, ADB implemented RETA 6265: Implementing Pilot Projects for Small Piped Water Networks.

Why are people, or even communities, not getting piped water supplies from the formal utilities? From the viewpoint of utility constraints, (i) the utility's network is far away, or (ii) the utility serves the area only from bulk meters or standposts because of nonlegal status of the area or perceived risks of water theft, or (iii) the piped network is already available but the cost and terms of an individual house connection are too high for poor families. Table 1 shows that households in some areas have been without piped water for a long time.

Table 1: Number of Years Without Piped Water from Utility

Country	Range	Average
Ahmedabad, India	2 – >40	40
Manila, Philippines	3 – 40	13
Tien Giang, Viet Nam	2 – 72	40

Source: RETA 6265 household surveys in 2006–2007.

Those without piped connections have to suffer a much higher cost for water, hence limiting consumption, not to mention the time and opportunities lost obtaining water. While the core issue is how to get everyone connected to piped water on affordable terms, the bigger issue is how to reach these unserved consumers as quickly as possible.

One option for reaching the unserved population is a small piped water network (SPWN).

What is a Small Piped Water Network?

The SPWN is the delivery of piped water services by a water provider, using materials conforming to the main utility's standards, operated legally to bring affordable, safe, and reliable water to a community until the main utility is able to reach these consumers directly.

Once connected to a piped system, beneficiaries pay a smaller amount for water than they paid for various nonpiped sources. With the use of SPWNs, ADB and others have demonstrated various implementation models wherein people not only pay less for their monthly water consumption, but also can afford the connection charges and get safe water on a regular and reliable basis.

These SPWN demonstration trials provided poor people with the same standard of service as any regular customer of the city utility: the water supply and pipes laid in the pilot communities, including the individual household meters, were all the same or had similar technical specifications, as those in areas served by the main utilities.

Innovative mechanisms to involve civil society for billing and collection significantly lower pilferage and ensure cost recovery, thus improving the overall level of governance. The SPWN model has also shown that it can be a stepping-stone to getting poor communities directly connected to the utility.

Why on an interim basis only? Government bears the responsibility for providing piped water services to its constituents. Government does this by giving authority (franchise) to government-owned utilities or private groups (either community-based or private businesses) to act as the main utility for certain towns or cities.

“Main utilities” are piped water providers given the franchise for an entire town/city or at least a major portion of it.

An SPWN operator is likely to operate within the franchise area of a main utility. Thus, it is prudent to assume that the main utility will reach the SPWN service area in the future;

hence, the interim nature of the SPWN. Take-out agreements should be built in at the start in order to prevent social, political, and legal conflicts in the future.

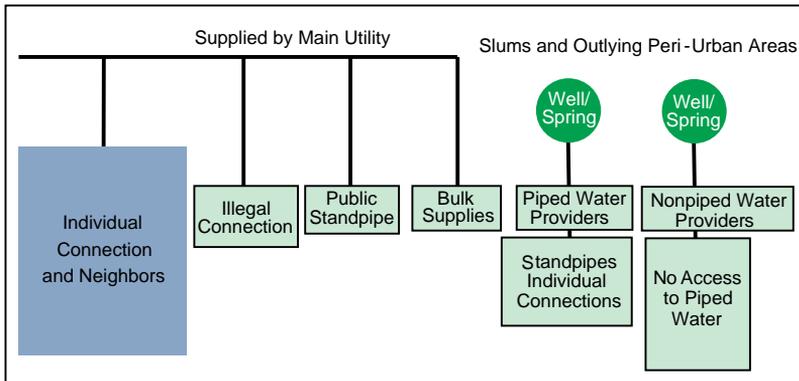
The various SPWN pilots have also demonstrated how the SPWN fills a gap by bringing safe drinking water to people quickly. This is in stark contrast to normal government projects that take years from design to project completion.

In sum, an SPWN is not only an option, but also a solution to meet the needs of people rapidly and to improve water governance until the main utility reaches them.

Who Can Benefit from Small Piped Water Networks?

Figure 1 illustrates the water market in a typical urban area. The SPWN concept can be used by those served by the main utility through standpipes or bulk supplies or for slums and outlying peri-urban areas without individual household piped water services.

Figure 1: A Typical Urban Area Water Market



Source: Author.

In a study² of 71 utilities in Southeast Asia in 2003–2005 (Table 2), the average coverage was about 74% in their service areas but only 58% in their franchise areas. This means that 26% of the population in areas with distribution networks (service areas) has no piped water and 42% of the population in the franchise areas has no access to piped water. In general, poor communities are at a disadvantage with respect to piped water connection.

Table 2: Percentage of Population with Piped Water in Southeast Asian Countries, 2005

Country (No. of Samples)	Percentage of Population Served	
	Franchise Area	Service Area
Malaysia (7)	91	100
Philippines (21)	49	70
Viet Nam (23)	58	72
Average	58	74

Source: ADB, Southeast Asian Water Utilities Network (SEAWUN). December 2007. Data Book of Southeast Asian Water Utilities 2005.

In India, the situation is similar: coverage of the 20 main utilities in the service areas is 81%.³ The balance of 19% can benefit from SPWNs. In addition, some of those already considered served are getting water only from public taps⁴ and can likewise benefit from SPWNs.

In the *2007 Asian Water Development Outlook* report, a review of 12 Asian countries indicated that six of them are unlikely to achieve both their urban and rural targets toward meeting the Millennium Development Goal Target 10 (Box 1). Most Asian cities with populations underserved by piped water services and a government that is open for a partnership with small-scale water providers (SSWPs) and civil society can benefit from SPWNs.

Role of Small-Scale Water Providers

SSWPs are basically entrepreneurs or service-oriented groups that take on the role of a surrogate utility in the SPWN concept. They step in to fill the void in the community by providing piped water services. While this is a common occurrence in many countries, in the SPWN concept, these SSWPs work with the main utilities in providing the service. They can also be described as small-scale investors that have supplemented trunk concessions or utilities in serving hard-to-reach parts of towns and in tailoring services to the poor.

Box 1: Millennium Development Goal Target 10

To halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Source: ADB. 2007. *Asian Water Development Outlook 2007*.

Lessons from Case Studies

Lessons from Case Studies

The ADB regional technical assistance (RETA) 6265 was implemented in three countries during 2005–2008. Four pilots were implemented: two in the Philippines and one each in Viet Nam and India. In addition, a United States Agency for International Development (USAID)-funded Environmental Services Program in Indonesia has conducted similar pilots in cities in Indonesia since 2006.

Philippines

The Metropolitan Manila Waterworks Supply and Sewerage System (MWSS) is the main government utility serving Metro Manila and its outlying areas. In 1997, MWSS awarded concession contracts to two private companies to manage and operate its water supply and sewerage facilities. Metro Manila was divided into East and West zones with the East Zone being managed by the Manila Water Company, Inc. (MWCI) and the West Zone under the Maynilad Water Services, Inc. (MWSI). Both concessionaires charge about \$173 for a water connection payable up-front or, in some cases, in six monthly installments. Because the poor cannot afford this charge, most are unable to get a piped water connection.

A 2006 survey by ADB of about 13,700 households in Manila unserved by MWSS revealed the following:

- Only 28% of these households have piped water connections from SSWPs and 72% rely on nonpiped sources. Water consumption is as low as 5 cubic meters (m³) per month per household for those relying on nonpiped sources.
- A typical household of five earns a decent income of \$261/month but almost half of the households surveyed earn less than \$170, barely above the poverty threshold. About 5% of income is spent for at least 6 m³ per month.

Pre-Project Conditions

Two pilot SPWN projects were done in Metro Manila using homeowner associations (HOAs) in the Manggahan Floodway area (East Zone) and a nongovernment organization (NGO) as an SSWP in Caloocan City (West Zone). In both pilots, the community could not afford to pay the connection fees up front while the concessionaires were reluctant to provide individual connection due to issues on land tenure. In both pilots, the residents were getting most of their water from vendors at \$2.31–2.90/m³, which is about 9 times the utility rate.

In both Philippine pilots, community-based organizations (CBOs) were used not only to galvanize the community into action but also to have leaders who could speak for and to the community in all negotiations with the beneficiaries, utility, banks, and the economic regulatory office. In the West Zone project, the beneficiaries are six contiguous HOAs. Each of the HOAs had to form its own CBO, and the six CBOs had to be formed into a “mother” CBO to represent them. In fact, the mother unit recommended the NGO that would eventually be the operator of the SPWN. In the East Zone pilot, the utility was the operator of the SPWN while the CBO handled the billing and collection of the connected households downstream of the bulk meter. Agreements in the use of bulk meter supplies, area coverage, project duration, implementation models, and cost-recovery schemes were drawn out in consultation with the main utility, its concessionaires, and other stakeholders (community based organization, SSWP, banks, local government units, and the economic regulatory office). In both pilots, the utilities provided the water supply from their main lines and provided the facilities up to and including the bulk meters at no extra cost to the SSWP or HOAs.

Post-Project Results

In just 4 months after the agreements were signed, 1,605 household beneficiaries had access to continuous piped water at notably lower rates. From an average of \$13.41 for 6 m³/month/household before the start of the project, beneficiaries were availing 10–17 m³ of water for \$10.36 per month—a cost reduction of 23% per month while doubling the consumption. The new cost includes the amortization of the connections over a 3-year period. At the end of the 3-year amortization period, monthly payments will be further reduced.

While technical operations and maintenance were still the responsibility of the main utility and its concessionaires, the commercial aspects of collection and billing were given to the

Box 2: Meters: Change Starts Here

For 3 weeks, Razel Espayos, president of the Ka-Bisig Homeowner Association, dug up the ground around his home along the Manggahan Floodway in Manila. Somewhere a pipe was leaking. There was no muddy ground to hint at the trouble spot but his meter told him a leak existed somewhere.

Two years ago, he never would have known such a thing. Like most people in this depressed area, he depended on a loose pipe network offering dirty water for 6 hours a day. A leaky pipe then could hemorrhage for years before being detected.

Now, system leaks have a billable address.

Source: Country Water Action, Philippines; Melissa Alipalo, ADB.

HOA or NGO. Under this scheme, the beneficiaries of the new reticulation system took some responsibility for maintaining integrity and service continuity. This was attained by homeowners' vigilance in reporting visible leaks immediately (Box 2), preventing illegal connections, and using peer pressure in convincing those in arrears to update their payments.

Figure 1



A Maynilad pilot Small Piped Water Network wherein some pipes were installed aboveground. This was requested by the small-scale water provider/homeowner associations to make leaks and illegal users easy to detect.

The pilot SPWNs in Metro Manila offer some important lessons: (i) because governments must be responsible for the 24-hour supply of adequate quantities of safe drinking water, communities can be mobilized to ensure proper water distribution to individual households following a distributor–retailer model between the utility and community groups; (ii) the urban poor are viable customers when offered flexible payment schemes for connections; and (iii) main utilities are no longer reluctant to deal with SSWPs because of the provision for exit or take-out agreements wherein the main utility can take over full technical and business operations of the facilities at no extra cost to the beneficiaries after a 3-year period. (*Refer to the included DVD showing the Manila SPWN experience.*)

Viet Nam

The SPWN sites in Viet Nam were in two communes in Chau Thanh, the third most populated district of Tien Giang Province.⁵ The Tien Giang Water Supply Company (TGWSC) is

the main utility providing piped water service, which reaches only 41% of the population in its service area (urban areas of eight districts and My Tho City). Tien Giang Province is subdivided into nine districts, with TGWSC serving the urban areas. The rural areas are served by the Tien Giang Water Exploitation and Rural Supply Company, responsible for the supply to small towns, and by 96 SSWPs of which 94 are private companies and 2 are cooperatives. The Government regulates both the water tariffs and connection charges of all piped water providers.

Pre-Project Conditions

The households in the pilot project site had to use ditch water or underground water from drilled/dug wells; many people stored rainwater for drinking or were supplied by water vendors whose prices were many times higher than utility tariffs.



Ditch water



Jar of rainwater



Dug well



Drilled well

The average monthly consumption ranged from 5 m³ per household from vendors up to 22 m³ per household for those with wells in the two communes, with water payments of 1–1.5% of monthly income. The average monthly consumption was equivalent to 15–20 m³ per household. However, the average monthly consumption from water vendors was only about 5 m³ because the cost was much higher. The poor used very little water and had to reuse it several times, i.e., water for washing rice was reused to wash dishes while water for bathing was reused for washing clothes.

In Tien Giang, the Government relies mainly on SSWPs to provide piped water to the rural population. Most of these SSWPs provide their own water sources (mostly wells) with almost no funding assistance from the Government. This is similar to the situation in Cambodia⁶ where many small to medium-sized towns are served mostly by private SSWPs.

Post-Project Results

Five hundred household beneficiaries were given continuous piped water in 3 months. There was reduced power cost for those using their own pumps. Two months after project completion, beneficiaries were consuming an average of 12 m³/month/household.

“We have stayed here for four generations already—my grandfather, my father, myself, and my children. But only in my children’s time can we have access to piped water. Before the Project, we used water from our drilled well but it is next to the stable. I’m happy now that we don’t have to use the same water as the cattle.”



“Come and have some tea with us. My family is so grateful to the project that brought piped water to us. Before, we used water from the ditch but you can see the quality. We cannot use it for drinking and had to buy some water from the vendor. It was expensive, but we had no choice. You cannot imagine how happy I am seeing water running from the tap in my yard after 47 years.” From interviews in 2008 with SPWN beneficiaries in Tien Giang, Viet Nam.

India

The pilot project in India was in Ahmedabad City in a slum area (Chamundanagar 1) that has 384 structures. The main utility in Ahmedabad is the Ahmedabad Municipal Corporation (AMC). Water connection costs \$46 and water consumption costs \$2.57 (Rs100) per year. Water supply throughout the city is for a maximum of only 2 hours/day.

Pre-Project Conditions

Prior to the project, every 10–15 households had one water connection. The connection was illegal and was tapped from the main water line. The residents had to pay even for these illegal connections. There were specific timings for the water. People had to get up very early in the morning and stand in long queues to collect water for their houses. This led to an immense waste of time and energy.

Similarly, toilets were constructed for every 15–20 households. The many users of the pay-and-use toilet, which is far from the area, had to form a long queue to use it. Aside from incurring additional expenses, the toilets were very dirty and unhygienic and had no water most of the time. There was no proper drainage system, which led to water clogging, especially during monsoons. This aggravated the incidence of diseases and poor hygiene.

An NGO (Saath) was contracted by ADB to construct water and sanitation facilities in coordination with AMC. A CBO was formed to galvanize savings from the beneficiaries for payment of the connection fees and the first annual water charge.

Post-Project Results

Through the project,

- 124 households were given piped water connections, even for only 2 hours a day;
- proper sanitation facilities in 30 community toilets with sewer connections were made;
- life was made easier and healthier, especially for women;
- there was positive social recognition and identity of the area; and
- \$4,375 of the target \$6,000 was collected from the 124 household beneficiaries.

Water clogging, which was common during monsoon seasons, will be a thing of the past. The lessons learned were 1) a mobilized community can pool its resources to initiate water and sewer connections, and 2) even the poor are willing to pay on a monthly basis for improved water services.

Indonesia

One of the main objectives of the United States Agency for International Development (USAID)-funded Environmental Services Program (ESP) is to increase access to piped water for poor (urban and peri-urban) people. As of mid-2008, projects were currently ongoing in Medan, Surabaya, and Bandung, and under preparation in Jakarta and Sidoarjo. In Medan, ESP has been collaborating with a local water utility (PDAM) and two NGOs to develop piped water supply systems for poor communities, piloting an innovative approach of collaboration between PDAM and the community. Most unconnected poor households rely on contaminated, shallow well water or buy water either from their neighbors or water vendors, for a much higher price, usually 15–30 times the average PDAM tariff. However, PDAMs are hesitant or even resistant to increase access to piped water in these poor neighborhoods because of problems related to illegal residents/land status, fear of water theft, leakages, inefficient water billing, and inability of poor households to pay the connection fee. The establishment of a CBO, responsible for a simple piped network system downstream of a

bulk/master meter, can solve all these problems: the PDAM would not lose water or money, while the community would receive more water at an affordable price.

This concept was successfully piloted in 2006–2007, on a small scale, in the poor areas of Medan, including Sungai Mati/Kampung Baru (54 households), Sunggal (50 households), and Panah Hijau (175 households). ESP selected and assisted JKM (a local, nonreligious, public health-oriented NGO) to be responsible for working with the community; establishing a CBO; designing the network; and providing financial, technical, and institutional training to the CBO and its community (Figure 2).

Early in 2007, the mayor of Medan promised 3,300 poor fisher families living in a very low-income area in Belawan (North Medan) that the city would provide them with water connections. On average, they consumed 300 liters/day/family for a cost of Rp3,000 or \$62 (Rp10,000/m³ or \$209/m³); this is 15 times the PDAM tariff for low-income families (Rp690/m³ or \$14/m³). Both the local government and PDAM committed budgets to cover the construction cost. However, PDAM was still unable to provide direct connections to all 3,300 households because families live in houses over the water (without formal land titles) and PDAM could not apply their technical construction standards.

Figure 2: Belawan–Medan, Indonesia



Both parties then requested ESP to introduce the “master meter” model for this area and to help mobilize and train the community through the local NGO. This model can be summarized as follows:

- NGO and PDAM introduce the concept to communities and conduct a technical survey to divide the 3,300 households into 70 smaller units of, on average, 50 households.
- PDAM installs all pipes from their main network to each unit, including the master meters.
- Local government provides funding for the construction of a simple (exposed) piped network and individual households meters after the master meter.
- About 30–35 CBOs are established, responsible for operating and maintaining the simple piped network after the master meters, including the flexible billing of customers and monthly payment to PDAM.
- PDAM and CBO agree on both the bulk water tariff to be paid to PDAM and the tariff charged to the customers, which covers the operating and maintenance cost by the CBO.
- PDAM and CBO sign an agreement, stipulating all details on connections, service, tariffs, and sanctions for noncompliance.

This system has many benefits for all parties concerned:

- PDAM saves about 50% of the usual investment cost for a house connection; PDAM only has to deal with 30–35 customers (CBO) to pay the monthly bill instead of 3,300 poor families; PDAM has no risk of water loss or theft behind the master meters.
- Communities receive continuous supply of better quality water and at their house for 10% of the usual cost, with flexible payment (daily or weekly) to the CBO. Before, they paid 12% of their monthly income for 6 m³/month; with the new system, they will only pay 3% of their monthly income for 15 m³/month.

Why Small Piped Water Networks Deliver

Quick. A public infrastructure project is a typical waiting game. It takes 3–6 years before a community is connected to piped water supply, compared to only 3–6 months through SPWNs.

Affordable. As true service coverage depends on the customer’s ability to pay, customers can pay in small amounts (daily or every few days) and pay connection fees by installment.

Convenient. Users do not have to travel long distances, wait for water only available for few hours in a day, or waste time queuing for water.

Reliable. Customers are assured of uninterrupted service or, if not, on a regular basis (same time every day), which saves time and effort.

Adequate Technical Standards. With proper support, planning, and implementation, the supply of bulk water and pipe laying, including individual house meters, have the same or similar technical specifications as those of the water utility.

Expanded Coverage. Because most slum dwellers cannot avail of formal water services due to lack of land tenure, the responsibility for water delivery is delegated to community associations through SPWN projects.

Ownership. When the community takes responsibility for its own needs, water projects become more sustainable because there is a shared perception of benefits and an acceptance of joint responsibility.

Module 1: Project Study and Preliminary Agreements

Module 1: Project Study and Preliminary Agreements

This module contains the preliminary agreements to be obtained from the different stakeholders (main utility, community organizations, consumers, civil society, small-scale water provider [SSWP]) during the initial stages of the project, as well as the requirements for a project study.

Project Identification

The first step is identifying the target beneficiary groups and determining their willingness to undertake responsibilities and support for the project. This could be initiated either by the government or the community.

If government initiates a project, there are two ways to proceed. The first is to declare a coverage target by a certain year and require all the main utilities or local governments to comply.⁷ The second way is for a national economic regulatory body (if it exists) to specify coverage targets and monitor compliance as part of its utility franchise renewal or tariff review process. Governments will have difficulty in raising all the resources to accomplish coverage targets. Thus, participation from donor agencies, private sector, and civil society should be welcomed. If the community initiates a project, it will make the necessary representation with either the main utility or the local government.

A good promotion campaign will immensely assist the government in promoting the small piped water network (SPWN) model. Existing and successful models could be showcased and once people see the benefits, they become much more eager to participate and commit resources. In the MWCI pilot, the nearby unserved communities have made representations with the utility for similar arrangements; while in the Maynilad pilot, the branch office of the utility has even requested its management to adopt the same concept in several of their unserved areas. A good promotion campaign includes (i) presentation of the SPWN concept/stories to utilities, local government units (LGUs), and civil society; (ii) testimonies from beneficiaries; and (iii) field trips to operating SPWN systems.

The following information, which can be obtained from either the LGU or through surveys in the beneficiary area, is needed for the target beneficiaries:

- geographic location;
- current sources, consumption, and cost of water;

- income levels;
- existence of a CBO; and
- land tenure issues, if any.

Existing water consumption and monthly expense are used to establish the need for the project. The income levels and security of land tenure help in evaluating why no piped water service has been provided and to validate the need for the project. Discussions with the beneficiaries or its CBO determine their willingness to support the project.

The following information from the main utility and the economic regulatory body is also needed:

- location of nearest mainline or distribution line,
- capacity of the utility to provide ample water supply,
- business plan of the utility with respect to the proposed geographic area,
- connection fees and consumption charges,
- policy with respect to SSWPs and/or communal accounts, and
- regulatory environment and government requirements.

This utility information determines sources of supply and pipeline length requirements of the project, operating horizon of the operator, and willingness of the utility to partner with SSWPs. If the main utility is not willing or has no experience this kind of an arrangement, a series of consultations is needed for SPWN acceptability purposes.

The information from both the beneficiary group and the utility provides a preliminary assessment of the usefulness of a SPWN, as well as a feasible business model to adopt.

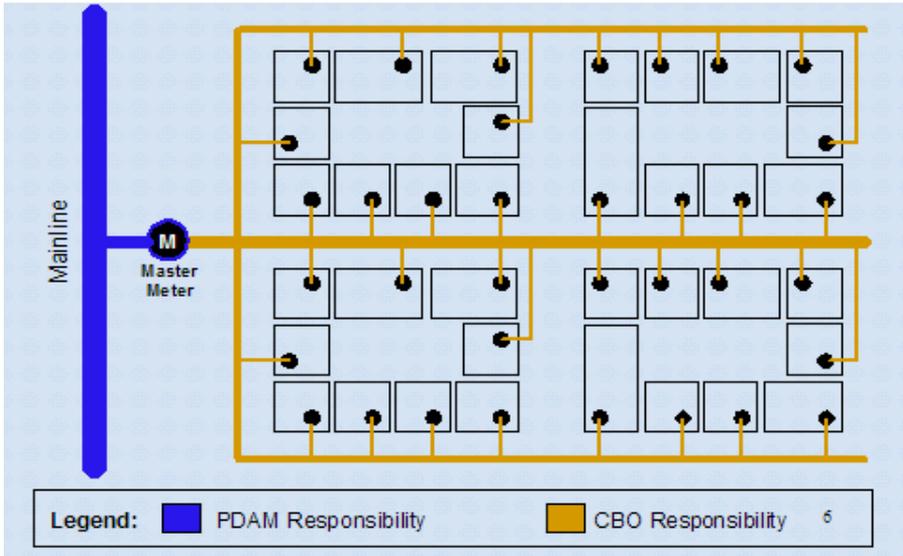
The main decision point at this stage is to determine the acceptability of the SPWN concept and probable operating arrangements, i.e., who will operate the SPWN and be responsible for it. A series of consultations is required both with the beneficiaries and the main utility itself. If a piped water provider is not operating in the area and the beneficiaries are not organized into a CBO, the beneficiaries should form a CBO in order to facilitate consultations and agreements.

Project Study

Once all the above information is on hand, it is time to begin the project study.

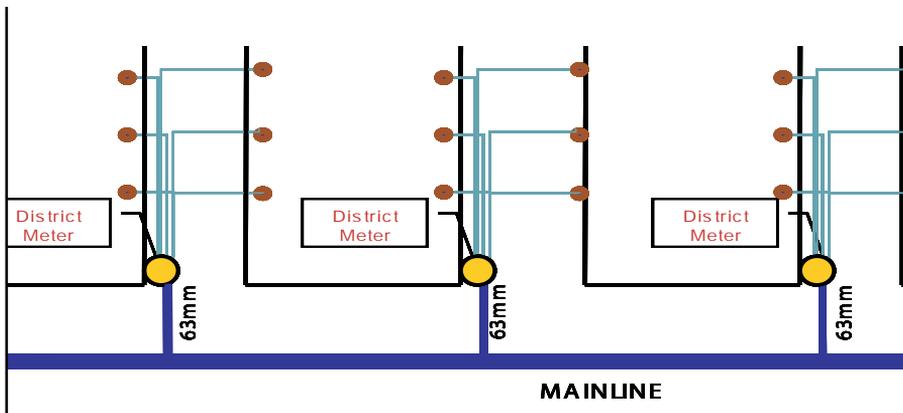
The project study is a viability study that can be done by the project proponent, the utility, or water provider as the basis for discussions with the beneficiaries and regulatory body on tariffs, with the utility for technical issues, and with the financier on investment

Figure 3: Network Scheme used in the Indonesia and Maynilad Small Piped Water Networks



CBO = community-based organization; PDAM = a local water utility in Medan, Indonesia.
 Source: From A de Vera's brownbag presentation in ADB (Maynilad); and Foort Bustraan, Advisor, USAID-ES (Indonesia).

Figure 4: Network Scheme used by the MWCI in their SPWN Pilots



Legend:
 Blue line – utility mainline; yellow – district meter; maroon – individual house meters.

Source: From A de Vera's presentation to the MWSS Board, Philippines, July 2006

requirements and financial plan. Several iterations may be necessary to come up with project details that are satisfactory to all stakeholders. An example of a project study is shown in Annex IA.

Figures 3 and 4 are the network schemes used in the ADB Philippine pilots and the USAID pilot in Indonesia where the households were connected from the bulk meter supply. The utility provides the facilities up to and including the bulk meter/s. The SPWN includes all the facilities after the bulk meter/s.

Main Project Proponent and Stakeholders Identification

Once the SPWN concept is accepted by both the beneficiaries and the utility, the next step is to identify the SPWN operator and ensure that the arrangements made are legally effective.

Initially, the terms of reference of the SPWN operator (or SSWP) must be accepted by both the beneficiaries and the utility, i.e., (i) its function (build/operate/finance), (ii) how long will it operate, (iii) source of water supply, and (iv) source of financing. A sample guide to operator or SSWP selection and terms of reference is shown in Annex 1B. The CBO should be part of the group selecting the water operator or SSWP. It may happen that a potential operator does not have all the capability required but its ability to secure assistance from the main utility or from other organizations can count in its favor.

Once the operator has been selected, the details of its service proposal are discussed. The CBO should be consulted specifically as to the affordability of the tariffs and willingness to pay.

After implementation agreements have been reached with the utility and the SPWN operator, the requirements of regulatory bodies and LGUs in terms of licenses, business and water permits, and tariff approvals must be met. Other stakeholders, where necessary, must be identified (cooperative agencies, registration agency for business entities) to determine their roles and to contribute to legal effectivity of the arrangement.

Policy Environment

The policy environment covers the attitude of the government and the main utility with respect to the participation of SSWPs, master plan for the area, tariffs, and water rights issues.

The participation of SSWPs toward reaching coverage targets must be ascertained to prevent future conflicts with the main utility. The main utility's master plans will indicate when the utility will be able to provide the service in the proposed area. Some utilities allow only a specific time horizon for SSWPs in their coverage areas and this period must be factored into the project study and exit provisions.

The issue of water permits or rights plays an important aspect in the sense that the SSWP has to determine whether it needs its own source (water abstraction) or buys water from the utility. This will affect the size of investment required, possible water permit conflict with the utility, and resulting tariff.

If water is to be sourced from the utility, the utility usually will require a bulk-water purchase arrangement only. This means that the operator will tap from a bulk meter and pay the bulk meter consumption. The tariff policy of the utility could be a bulk price/m³ or domestic rate. If the utility bulk rates are higher than the standard domestic tariff on a per cubic meter basis, the beneficiaries and SSWP should negotiate as early as possible to obtain bulk rates at least equal to the domestic tariffs.

The policy environment covers also the requirements for the operator's add-on tariff approval. Some countries regulate both the consumption tariff and connection fees, others only the consumption tariff. If the SPWN operator has to add some amount to the approved utility rates (in case of bulk water arrangements) to cover administrative and technical expenses, the requirements for approval for these add-on charges need to be known and secured.

Wastewater Considerations

The collection, disposal, and treatment of wastewater are important facets to be considered in the SPWN concept. As more water is delivered to a community, more wastewater is produced. Unless the wastewater is properly collected and disposed of, it will affect the community environment and health conditions of the beneficiaries. The cost of such a system should be carefully studied and if the community is in or near the sewerage system of the utility, collection lines can be built to dispose of the wastewater. Moreover, if government subsidies are available, the wastewater collection system should be built as was done in the India pilot. For more information on sanitation and wastewater disposal, refer to ADB's *Smarter Sanitation* electronic tool kit.⁸

Module 2: Business Models and Instruments

Module 2: Business Models and Instruments

After the project is found to be viable and preliminary agreements have been secured, the agreements are formalized through legal instruments, such as a memorandum of agreement or contract. This module describes operating arrangements (business models) of major stakeholders that can be used to operate the small piped water network (SPWN) concept and provides some examples.

The initiator or proponent for an SPWN model can either be the local government unit (LGU), main utility, civil society, private business, community-based organization (CBO), or donor agency.

Local Government Units

LGUs can use the SPWNs in areas where the utility is apprehensive about providing piped connections or in areas outside the existing service area⁹ of their main utility. For these areas, the initial step would be for the LGU to meet the utility¹⁰ and the beneficiary CBOs to take up the concept, the benefits, selection of small-scale water provider (SSWP), business models, and other details. The benefits of an LGU proponent are its ability to assist in financing and provide the necessary assistance in legal and regulatory requirements.

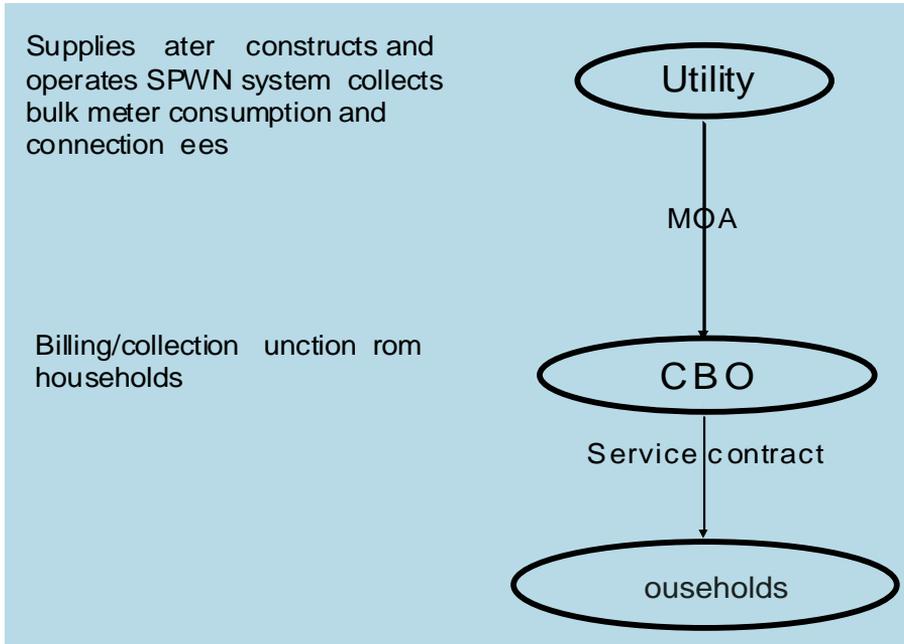
If LGUs directly own and operate the utility, the business model in the following section (Main Utilities) applies to the LGUs. If the LGU does not operate the utility, it will pass on the responsibility for implementation and system operation to any of the other three users of the SPWN model identified in this module.

Main Utilities

To implement the SPWN concept using bulk meter arrangements, the utility can enter into an agreement with the CBO wherein households have individual connections but the CBO pays for the bulk meter consumption on a monthly basis and handles the individual meter billing and collection through their appointed staff or elected area/street leaders. The advantages of this model are ease of implementation for both parties and the increased responsibility being assumed by the CBO in maintaining network integrity in their area.

Figure 5 illustrates the SPWN Business Model 1 between a utility and a CBO. This model was used in the Philippine East Zone and India pilots. The features of this business model are the following:

Figure 5: SPWN Business Model 1



CBO – community-based organization, MOA – memorandum of agreement, SPWN – small piped water network.

Source: Author.

- The utility enters into an agreement with the CBO (or homeowners association [HOA]) in the area for a “bulk meter” system, indicating roles, responsibilities, terms of connection fees, tariff levels of bulk water purchases, and operating horizon. Annex 2A shows a sample agreement.
- The utility and CBO agree on the terms of the individual household connection charges, with the utility building the network and assuming the operation and maintenance functions of the system (before and after the bulk meters).
- The CBO’s main roles are operating the internal commercial (billing and collection) system with the individually connected households and network monitoring. For its commercial activities, the CBO designates or conducts election of area/street leaders (or collectors) whose responsibility is billing and collection of the individual households on a timetable¹¹ tailored for each household.
- The other major role of the CBO is monitoring the network for leaks and ensuring there are no illegal connections. If the members know that all water losses—as shown

in the difference in the bulk meter reading and the summation of all domestic meters connected—will be paid by them, the members will protect their network integrity.

- After an agreed period, the CBO turns over the network operations to the utility, which then bills the beneficiaries directly.

Small-Scale Water Providers

Sometimes, an SSPW is referred to as a small-scale private water provider (or SSPWP) with the following characteristics:

- **Small in scale.** Coverage is not city-wide and usually covers a neighborhood or parts of it.
- **Independent.** Does not receive any public subsidies or support from NGOs.
- **Private.** Capital investment comes from private sources and the provider is not driven by external investors.

According to these characteristics, CBOs and nongovernment organizations (NGOs) that rely on volunteer work and receive aid from charities are not considered SSPWPs.

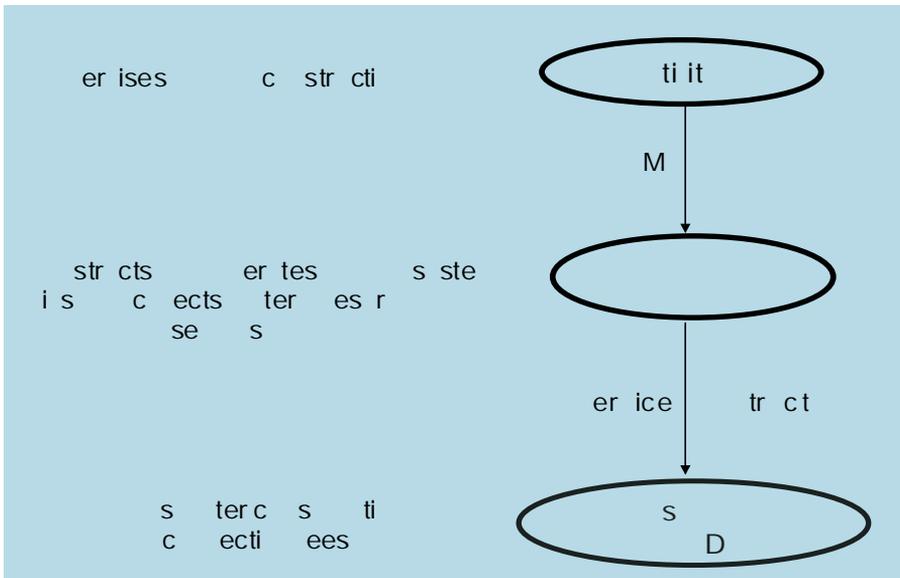
Taking out the word “private” in SSPWP broadens its scope to include all water service providers, whether SSPWPs, NGOs, or CBOs. In some political subdivisions of a town or province, the main utility is a CBO (a cooperative) or an SSPWP. But these are rare.

SPWNs have been used by SSPWs in meeting the demand of consumers not connected to the main utility. These water providers either have their own source (usually a well) or they get their supply from the main utility or from other sources. SSPWs usually mimic main utilities in their limited area of operation.

Figure 6 shows an SPWN business model (Business Model 2) that can be used by an SSPW, either a private operator or an NGO, with full utility functions. This model was used in the Viet Nam pilot. The SSPW may provide its own source of water if the utility sources are too far or inadequate. The main features of this model are

- 1) The SSPW enters into an agreement with the main utility (or a government agency) indicating roles and responsibilities. The agreement should also include (i) source of water and service level targets, (ii) tariffs and adjustment formulas, (iii) operating period and exit undertakings, (iv) regulatory arrangements, and (v) termination clauses. Annex 2B shows a sample agreement. The operating period agreement is a necessary component because it protects the interests of both the SSPW and the beneficiaries and provides take-out agreements that benefit both parties.

Figure 6: SPWN Business Model 2



HOA – homeowners association, MOA – memorandum of agreement, SSWP – small-scale water provider.

Source: Author.

- 2) The SSWP sources the required financing, builds the network, and operates and maintains the system. The SSWP also does the commercial aspects (billing and collection).
- 3) After a predetermined period, the SSWP turns over the facilities to the utility with an agreed price formula.

Small-Scale Water Providers with Limited Functions

This business model is similar to the previous one (see Figure 6), except that the function of the SSWP is limited. This model was used in the Philippine West Zone pilot. It can be used when (i) the capacity of the SSWP for operation and maintenance is limited, (ii) the utility wants to handle these functions itself, or (iii) the utility will reach the area in a few years and would like to closely monitor the assets for smooth turnover or transfer. In these cases, the water sources would likely be the utility bulk meters. The main features of this business model (Business Model 3) are the following:

- 1) The SSWP and the utility usually share the financing and building cost of the network. However, the SSWP does not operate and maintain the system. The maintenance

function is done by the utility, with monitoring of the internal network done by the SSWP.

- 2) The SSWP has an agreement with the CBO, delineating roles and responsibilities with respect to the commercial activities, for which the SSWP may designate CBO street leaders (or collectors) or use its own staff for billing and collection of individual households on a timetable tailored for them.

Annex 2C shows a sample agreement between the SSWP and the utility (or any government body) indicating roles and responsibilities under this arrangement.

Community-Based Organizations

In some cases, a CBO may be the initiator or project proponent. There are many types of CBOs that can operate SPWNs. These are HOAs, cooperatives (coops), or water associations.

A HOA is an aggregation of homeowners, apartment owners, or tenants who have formed themselves into a group whose objective is to operate common facilities and share common financial responsibilities. A cooperative is a duly registered association of persons with a common bond of interest who have voluntarily bonded together to achieve common social or economic end, making equitable contributions to the capital required and accepting a share of the risks and benefits of the undertaking. A water association is a nonstock, nonprofit organization composed of heads of households who band themselves for the purpose of operating a water system.

In some countries, these CBOs are given the authority or franchise to operate water systems. In some instances where no main utility exists, these CBOs become the main utilities. But in most cases, CBOs are given a limited franchise period because they are usually operating within the mandated area of a main utility (Box 3). In this case, the CBOs can be defined as SSWPs operating SPWNs. In almost all cases, these CBOs have their own water supply sources.

Box 3: CBOs as Small-Scale Water Providers: Philippines

In the Philippines, there are about 200 water cooperatives and about the same number of rural water associations delivering piped water supplies to individual house connections. Almost all have their own deep wells as supply sources. These community-based organizations (CBOs) do not have fixed tenure (their franchise is on a 5-year renewable basis) and some have been operating for more than 20 years.

Source: Interviews with NWRB and CDA officials, October 2007 by A de Vera.

Unless take-out provisions were made at the start, CBOs-cum-SSWPs are apt to cause the most legal and social conflicts when the main utility is ready to provide the necessary piped services in their area. The pride of ownership, their satisfaction with their own water services, and additional costs to be incurred when the utility takes over make it difficult for these CBOs to let go of their water system. The main argument of the main utility for the takeover is their franchise authority.

The business model of a CBO is similar to that of the SSWPs, that is, Business Model 2 or 3 depending on the functions.

Module 3: Financing

Module 3: Financing

This module assists proponents to obtain financing.

Sector Financing Constraints

In surveys during the ADB small piped water network (SPWN) pilots, the small-scale water providers (SSWPs) acknowledged that (i) all the initial investment requirements came from equity or from loans with relatives or friends, (ii) their revenues can cover operating and maintenance costs, and (iii) retained earnings are used for repairs and capital investments. However, these retained earnings tend to be insufficient for large capital needs. Much as SSWPs would like to tap resources from financing institutions, many constraints exist.

On the demand side, the capacity of SSWPs in capital planning and development of “bankable” projects to take to financial institutions is limited. Limitations may relate to their technical ability to develop investment plans that would be positively assessed by financial institutions or to their general capability and institutional stability that would assure banks of their creditworthiness. For some organizations, i.e., rural water supply associations, the ambiguity of their legal capacity presents a challenge for the organization in incurring debt and other obligations. On the positive side, consumers are very willing to pay (normally piped service charges are lower than for nonpiped services), community-based organizations (CBOs) have default mechanisms (if one household fails to pay, the amount will be shouldered by the rest of the SPWN community), and daily collections drive high collection efficiency.

On the supply side, funding comes from public or private sources. Most utility funding comes from public funds. Government funding for SPWNs, while available, is not yet mainstreamed. The current financial products available are, however, mismatched to the needs and ability of small water providers.

- 1) **Small Value Projects.** Most SSWPs require investments ranging from \$50,000 to \$200,000. This has to do with the business requirements of SPWNs, whose market, operational capacity (human resources and current working capital base), and credit capacity are also limited. These loan sizes are potentially too small for most financial institutions, given the costs of loan administration.
- 2) **Loan Tenors and Grace Periods.** Loan tenors and grace periods should match the type of investment so that future cash flows cover debt payments. Efficiency improvement projects may be suited to the present 3–5 year tenors presently available but expansion projects could require tenors of 7 years or more, which are not commonly available, especially for small providers.

- 3) **Business Familiarity, Risk, and Regulation Requirements.** Financial institutions may not yet be familiar with the business and nature of risks in water supply and what, if any, prudential requirements are expected. Thus, security requirements for loans to this sector are often stringent. However, current guarantees sought, such as requirement for collateral, are seen to be inappropriate because utility fixed assets (pipe networks and storage tanks) may not be valuable from the perspective of financial institutions. There are cases, however, of financial institutions relying on other measures to secure a loan. Most common among these is acting as a collection agent of the utility or requiring that a portion of the collections be deposited with the financial institution; and in the case of cooperatives, recourse to the fixed deposits of a member who is unable to settle his obligations.
- 4) **Capacity at Branch Level.** For small loans, transactions are normally carried out through local financial institution branch offices, which may not have credit officers who are technically capable or inclined to actively market in this sector. Some banks have a central unit backstopping special types of projects, while others have initiated training for their branch office staff on specialized projects.

Opportunities exist in the increasing interest by private and government financial institutions to lend to water utilities and SSWPs. There are some successful transactions between SSWPs and banks,¹² which may provide insights on how similar transactions can be institutionalized (as opposed to a case-by-case basis). Opportunity is also available for deepening relationships between SSWPs and financial intermediaries through other financial services, especially collection services and advisory services on project financing and financial packaging, or through financial product modification that aligns financial institution requirements with those of the SSWPs.

Business Planning

Financial institutions generally regard the capacity of SSWPs to develop bankable proposals as one of the constraints (aside from governance issues) to the low level of financial transactions. While entrepreneurs are generally adept in operating businesses, the financial community considers the ability to make business and financial plans a minimum requirement prior to making any funding request.

Business plans should, at least, cover the following: i) area and period covered, ii) supply and demand projections, iii) planned capital expenditures and operational and maintenance expense projections, and iv) tariff levels and proforma financial statements. Annex 3 presents a template for simple business planning for SSWPs that may be used either for loan presentation to financial institutions or for justifying tariff levels.

Access to Capital

The main source of funding by SSWPs is equity. Funding is either sourced from the entrepreneur's own pocket or from the entrepreneur's business partners. The entrepreneur sources the funds from his own pocket or from the pockets of his business partners. Following are several other ways for an SSWP to gain access to external financing without necessarily mortgaging personal or "off balance sheet"¹³ assets to secure the loan.

Investor Equity. This can happen if the entrepreneur is willing to add business partners or incorporate the business venture and allow other parties to share in raising the equity requirements. Altering the business model into a corporate setup will not only increase the equity but also enlarge the network of the new organization, as well as give more confidence to the financing institutions. For this purpose, a cooperative can request more contributions from its members.

Loans from Financial Institutions. As an initial step, the SSWP or project proponent should first look for a financial institution with prior lending activities to or with a financial window for SSWPs, NGOs, or small utilities. The project study document should be well prepared by the proponent or SSWP to ensure credibility and demonstrate borrower paying capacity. As to collateral coverage¹⁴ requirements, the following can be pledged by the borrower: (i) locked-in deposits to secure at least 3–5 months amortization payments; (ii) arrangement for a percentage of the revenues to be deposited as a sinking fund to retire the loan; and (iii) real estate, where the reservoirs, office, or wells are located. In addition, the approval by a regulatory agency of an SSWP's tariffs for a 5-year period would give confidence to the lenders and validate the financial soundness of the undertaking for a loan tenor of 5 years or less.

During the 1990s, the Development Bank of the Philippines (DBP) and the Bankers Association of the Philippines decided to establish a private guarantee corporation. ADB later bought

Box 4: Philippine Water Revolving Fund

The Philippine Water Revolving Fund will be established in the Development Bank of the Philippines. It will be funded by a Japan Bank for International Cooperation (JBIC) loan and will be used to leverage funds from private financing institutions. The financial institution participation can be guaranteed by the LGU Guarantee Corporation. The JBIC assistance will enable longer maturities for financing water facilities in general. Private financial institutions can participate through a wholesale lending or cofinancing scheme for specific loan transactions.

Source: A. Porciuncula, PWRP Chief of Party, February 2008.

shares in the company. The LGU Guarantee Corporation promotes private financing for water projects by providing credit risk enhancement (Box 4). The LGU Guarantee Corporation, or similar organizations in other countries, can likewise be approached to introduce private banks to SSWP projects and later provide guarantees for these loans.

By their nature, government financial institutions have more access to developmental financing and are able to factor this into packaging financial facilities for water projects. Their access to engineering funds and loans with longer maturities at lower interests that are fixed for longer periods and with longer grace periods, are inherent advantages.

Box 5: Microfinancing Trends

In recent years, small banks have begun to penetrate the microfinance industry in several countries. Only a few rural banks were involved in the Philippines in 1990; but by 2004, 175 had entered the industry. In countries, such as Azerbaijan, Pakistan, Timor-Leste, and Tajikistan, new microfinance banks have appeared. In Indonesia, people's credit banks have been making a concerted effort to expand their operations to cover low-income families.

Source: ADB. 2005. *The Changing Face of the Microfinance Industry*. Manila.

Very few private financial institutions have experience in lending to the water supply sector. The standard financial institution evaluation focuses on project viability documents, collateral coverage, and legal structure of the borrower. Private financial institutions must know the legal remedies available to it in case of nonpayment of financial obligations. The SSWP should approach those funders that have experience in the sector or at least a history of financial business relationships with it. Water cooperatives should liaise with cooperative banks for priority in securing funding because these banks are familiar with the cooperative laws of the country. By their nature, private financial institutions are more confident when dealing with corporations than with noncorporate structures because corporations are more stable, have continuity of management, and are controlled by regulatory bodies.

Government Agencies. National government agencies, such as the Local Water Utilities Administration, Department of Public Works, and the National Anti-Poverty Commission in the Philippines, and Center for Rural Water and Sanitation in Tien Giang, Viet Nam, do have the mandate of working with financial institutions to obtain official development assistance (ODA) funds that can be loaned to water providers. LGUs likewise can appropriate some funds as a revolving fund for SSWPs.¹⁵ In principle, LGUs can also provide grant financing in view of their responsibility to increase access to basic service for poor families. Alternatively, these government agencies can package a program loan with external support agencies for SSWPs and even for main utilities.¹⁶

Main Utilities. Main utilities can be a source of funding in two ways. Once a general agreement has been forged between the utility and the SSWP, the SSWP can negotiate for utility counterpart funding for some of the source supply facilities, such as the bulk meter, transmission or primary distribution lines, pipes, and valves.

The utility can also provide funding through output-based aid (OBA) contracts.¹⁷ OBA provides a way in which external support agencies, such as ADB and the International Bank for Rural Development (IBRD), can directly structure their financing to benefit the poor, even when the service provider is a private company. OBA is the use of explicit, performance-based subsidies funded by the donor to complement or replace user fees. It involves contracting basic service provision to a third party, such as private companies, NGOs, or CBOs, with subsidy payment tied to the delivery of specified outputs. The third party can only recover this funding by achieving specific performance outcomes. Generally, OBA schemes finance connection fees.

Prospective Beneficiaries and Suppliers. The pilots in the Philippines, India, and Indonesia have demonstrated some capacity and the willingness of poor communities to pay for piped water services. Even before pipes were laid, the intended beneficiaries in India were amortizing the connection fees on a monthly basis. Some suppliers, such as well drillers and pipe manufacturers, have been known to provide some credit facilities for as long as 2–3 years for favored clients. Prospective beneficiaries could also apply to microfinance institutions (Box 5) on an individual basis. This method of raising funds, coupled with the SSWP equity, could be sufficient to fund the SPWN requirements.

Prospective Financing Schemes

Countries wishing to fund SPWNs can also try the following schemes:

- 1) Government and ODA grant funds or soft loans to capitalize a revolving fund. This fund should, however, be operated on cost-based principles.
- 2) Government or ODA donors put up a guarantee facility. For example, the World Bank has a guarantee program for renewable energy that is being managed by the LGU Guarantee Corporation in the Philippines. In Cambodia, an international NGO has put in place a rural infrastructure fund in a public development bank to provide 3–5 year loans to local commercial banks wishing to finance investors in piped water systems.¹⁸ This is useful for SSWPs that can afford commercial rates but do not have access to formal markets. The guarantee will be the proxy for collateral, but the cost thereof will be borne by the borrower—this may be 1–2% over the usual spreads of financial institutions.
- 3) LGUs or main utilities can be used as conduits to borrow funds from financing institutions. This implies, however, that these entities will take on the credit risk of the SSWPs.

Module 4: Ensuring Acceptability and Sustainability

Module 4: Ensuring Acceptability and Sustainability

This module provides measures to ensure the acceptability and sustainability of a small piped water network (SPWN).

Ensuring Success

Successful projects result from effective partnerships between government and civil society. Civil society can help local communities organize themselves to participate in projects, ensuring that the poor are served and services are sustained. An approach called the government–corporate–society (GCS) model can help ensure success.



Source: Seetharam, K.E. 2007. Delivering our Vision: Sanitation for All. Presentation made for the International Seminar on Sanitation. Asian Development Bank. Manila.

In the GCS model, the government sets service levels, performance standards, tariff policy (preferably through independent regulatory body), legal framework, and procedures for awarding and managing contracts and handling complaints.

The Corporate “sector”¹⁹ in this model develops people’s capacity, constructs and operates efficiently, manages with minimal bureaucracy, and sources funding for development.

Society’s role in the GCS model is to demand quality services, carry out water conservation and demand-side management, and monitor services to the poor.

Strengths and Weaknesses of Small-Scale Water Providers

Many small-scale water providers (SSWPs) work without formal recognition from local authorities and are not usually subcontracted by the main utilities. From surveys of SSWPs and experiences with the pilot projects, the SSWPs’ strength lies in their ability to step in immediately to satisfy the demand gap, adopt flexible operating policies adapted to their clients, and generate trust among these clients. Community-based organizations (CBOs) or community members can collect payments more sensitively than the utility. The community members know well who has difficulties, such as loss of a job or sickness, and may let others temporarily cover their expenditures.²⁰

SSWP weaknesses are the lack of or limited access to financing, lack of technical know-how, and limited access to or knowledge of government regulatory procedures. All these dictate short-term recovery of investments. Their usefulness and viability are dependent on when the main utility can efficiently provide service in the same area in terms of coverage and supply continuity. Should an SSWP provide the facilities in a community and the main utility steps in after a year, the SSWP may not have recovered its investment.

As mentioned, the SPWN model is an interim measure to service areas where the main utility is unable to do so at the present time. However, interim could mean 3–5 years or more than 20 years.²¹

Capacity Development of Small-Scale Water Providers

Whatever the form of the SSWP (private business or CBO), its capacity to operate any water system will always be limited. This has been deduced from previous studies of small town water systems, the RETA 6265 pilots, and similar ADB studies. While a private entrepreneur may be successful as a construction contractor, operating a water system and managing its related risks require certain knowledge, skills, and experience. Operators of main utilities

in the United States need to pass written exams to acquire an operator's certificate even if they already have years of experience in that line of work.

SSWPs acknowledge their need for capacity development. During the SPWN pilots, operators reported the following minimum knowledge or skills needed to manage an SPWN effectively.

Source Facilities

- Measuring production
- Measuring pump efficiency
- Determining safe yields for wells
- Calibrating production meters

Treatment Facilities

- Disinfection and chlorination
- Requirements for water tests
- Chlorine dosages and residual tests

Distribution Facilities

- Measuring and ways of reducing nonrevenue water
- Proper way of installing pipes and connections
- Conducting pipe pressure tests

Billing

- Service contract contents
- Forms and procedures

Tariff Formulation

- Tariff methodology
- Cost recovery concept

Financing

- Business planning
- Sources of financing
- Financial statement basics

The small-scale operations and relatively poor clientele of SSWPs prevent them from hiring much needed qualified personnel. SSWPs generally rely on their social network to gain access to the right persons to act as their advisors; SSWPs may also use their financial surplus to hire consultants in some aspects of their operations. Capacity development activities for water utility operations offered by the government do not usually include SSWP personnel.²²

There are three avenues of capacity development for SSWPs. One way is through networking or building a relationship with either the main utility or a dominant utility in the city or region, through which a twinning arrangement or on-the-job training can be arranged. The second way is to liaise with nongovernment organizations (NGOs), government water or regulatory agencies, or national government officials for development assistance. The third way is to form a federation and use its economy of scale to conduct training programs. It must be borne in mind that training is not a one-off affair but a continuing program to capacitate stakeholders.

Community Participation

If the SSWP is to use a business model requiring some form of community participation, many projects, including the ADB SPWN pilots, have demonstrated the need for civil society's participation in order to execute the project efficiently and sustain development gains.

A community with no form of organization does not usually take its own initiative to form a CBO. The first requirement is the "felt need" to organize one. The need to form an organization for water accessibility must be real, and some sectors/members of the community must air this demand. The second is the presence of a community organizer to galvanize the community into action. Locating a "champion" within the community is key.

The presence of a community organizer should ensure the creation of a CBO. The organizer could be a local community leader, an NGO representative working in the community, the SSWP representative, one of the utility staff, a representative of the local government unit, or a combination of these. Civil society organizations not only champion the cause of poor people but also contribute to technical innovations and management systems. They are also generally more cost conscious than public organizations or the private sector.

The role of the CBO will depend on the implementing arrangements or business model that will be used by the SSWP. The community must be consulted on the proposed arrangement. This is particularly important, especially where a new piped system is to be set up. This consultation should confirm the need for the facilities, and get consensus on the implementing arrangements and roles of the various stakeholders and costs. These will require a series of meetings, at which the CBO represents the community.

What is crucial here is to determine the size of the community that the CBO will represent for connection to the system. Size depends very much on two factors: (1) community cohesion, and (2) specifics on site and size of households to be connected. The first point relates to trust: the degree of trust among community members to operate and pay for the services determines the size of the community to be connected.

If trust is high, a large community can be served; if trust is low, only a few can be served.

Even if the community already has a CBO, the first meeting should be a general assembly to communicate the purpose and benefits of the project, and the roles that each stakeholder will play to make the project successful. Subsequent meetings can be attended/held by the CBO officers or representatives.

It is important to remember that the decision-making process needs to be embedded in the beneficiary communities. If the communities do not make project decisions, their ownership of the project facilities will be weak, jeopardizing sustainability. Community information, awareness campaigns, and education must be given enough emphasis in addition to financial support. And these efforts need to precede construction activities.

Roles and Functions of Community-Based Organizations

Aside from community mobilization, there are two major roles that civil society can assume in an SPWN concept: (i) technical operation and maintenance and (ii) commercial operation.

The operation and maintenance functions depend on the agreements made between the SSWP (or utility) and the CBO. The SSWP/utility can merely supply water up to a bulk meter with the CBO handling the internal operations after the meter, or the SSWP can handle everything within the network. These are the extremes; the CBO and SSWP should agree on the terms acceptable to each.

The commercial operation covers the billing and collection of individual accounts, including disconnections if necessary. These can be done by either the SSWP or the CBO. For communities with irregular patterns of income wherein the billing and collection cycles are short, the commercial operation aspect is best done by the CBO.

The community can even be mobilized to contribute equity (financial or in-kind) to the project. This will strengthen ownership and provide incentives to the community by reducing project costs and increasing efficiency. This will, however, depend on the period of interim operation and affordability to the beneficiaries.

Creation of a Water Committee

During the life of the SPWN, customer complaints that need third-party mediation will surely arise. A water committee in the local government or a cooperative can provide such mediation. This committee should be formed prior to the start of the services. If possible,

membership of the committee should be on an institutional basis to ensure continuity and consistency in decision making.

The water committee can also monitor water quality and conduct information dissemination campaigns. A committee of 3–5 members should be sufficient. (Refer to Annex 4 for roles and responsibilities of a water committee.)

Government Policy and Small-Scale Water Provider Initiatives

Government policies toward SSWPs vary, and an advocacy program may be needed in order to gain recognition and acceptance of SSWP contributions to the sector. In the Philippines, water cooperatives and rural water associations have been encouraged and even financially assisted by the government to provide water service in rural areas. A national federation of SSWPs has been organized to enhance government recognition and to provide a wider platform for these organizations in resolving conflicts between them and the main utilities in terms of coverage responsibilities.

In certain provinces in Viet Nam, the local government has empowered and encouraged SSWPs to serve rural areas. These SSWPs are formally recognized by the government in terms of water permits and business licenses, but they have limited capabilities for expansion due to financing, groundwater, or revenue-generation constraints. One issue is that setting arbitrary ceilings for tariffs and connection charges limits the financial viability of SSWPs.

In Indonesia, practically no SSWPs exist in urban areas. Water is provided either directly by the water utility or through public taps (“managed” by local entrepreneurs) or individual water sources (shallow or deep wells). In rural areas, community groups are formed to manage either government- or donor-initiated water supply systems, but quite often they lack sufficient technical skills for proper operation and maintenance.

In most cases, a GCS partnership is necessary to reform the business environment to improve its attractiveness for SSWPs to provide services.

Module 5: Legal and Regulatory Aspects

Module 5: Legal and Regulatory Aspects

Regulatory Framework Requirements

In the small piped water network (SPWN) concept, the service provider operates like a utility; hence, the cost of services, as well as quality of the product (water), must be subject to regulation.

Regulation is needed to address a range of market failures. When markets function effectively, competition among suppliers influences the price and quality of goods and services. However, when competition is not feasible or does not produce results that are compatible with the public interest—for example, if there is a natural monopoly or environmental degradation—regulation has an important role. Economic regulation,²³ in particular, is needed to (i) balance the interests of the customers and the provider, (ii) ensure that service providers meet their obligation, and (iii) ensure fair pricing.

The regulatory framework has three interrelated components: legal framework, institutional framework, and set of regulatory practices to be used in applying the regulation.

The legal framework is a set of regulatory rules that make up the body of laws, regulations, licenses, and contracts that define expectations and acceptable contracts. In most Asian countries, this legal requirement is largely in its infancy stage or is inadequate. This framework defines what is to be regulated, who should be regulated, and who will regulate.

The institutional framework comprises the regulatory bodies tasked with administering the regulatory laws. These bodies may take different forms, such as national or local agencies or contract administrators, and all have their own roles, functions, and authority. The economic regulatory bodies covering the operations of small-scale water providers (SSWPs) are usually the same bodies regulating the main utilities. If no specific agency is given the task of economic regulation, regulation of SSWPs will be difficult.

The regulatory practices are the rules, guidelines, licenses or permits required, and monitoring and enforcement practices and penalties used by the regulatory bodies to carry out their responsibilities. Even if the legal and institutional frameworks exist, the regulatory practices may be complex or ineffective from the viewpoint of those to be regulated and they may have difficulty or even not comply with the requirements. (Refer to Annex 5A for technical

service guidelines that can be used as a guide by a water economic regulator or by the SSWP in its operations.)

These requirements exist not only for the benefit of the consumers but of the SSWP itself. Without compliance, an SSWP will be deemed to be operating illegally. All SSWPs must operate within the law to protect their investments and ensure continuity of their operations.

There are, in general, three types of licenses or permits that an SSWP must obtain to legalize its operations: legalizing the business operations, obtaining a license or a franchise to sell water, and obtaining a water permit (in the case of raw water abstraction).

Business Registration Requirements

Without formal recognition and licensing by local authorities, small networks operate on a commercially precarious footing. This has the effect of inflating business costs and, hence, water charges. The risk of expropriation forces operators to shorten payback periods, affecting tariff levels and service levels. It is imperative that the SSWPs acquire formal and legal status.

All business models (corporations, partnerships, single proprietorships, etc.) have to secure a license from the appropriate government agency, approving the business name and equity requirements among others. In the Philippines, this can be obtained from either the Securities and Exchange Commission or the Department of Trade and Industry. In Viet Nam, the license can be obtained from the Department of Planning and Industry (DPI).

The other business requirement, once the SSWP business personality has been recognized, is the license to operate within a local government unit (LGU). This is commonly known as the business license and is easily obtained from the LGU where the SSWP office is located. The requirements vary from country to country, are LGU specific, and are sometimes dependent on the economic regulatory requirements.

Economic Regulatory Requirements

After having the business registered and licensing requirements accomplished, an SSWP can now operate within an LGU. If selling piped water, the SSWP will need further clearance on the water tariff and the franchise area. Due to utilities being natural monopolies, a utility authorized to operate within a geographic boundary (franchise area) is almost ensured of business monopoly during the franchise period. Hence, it is necessary that an SSWP secures this permit to operate²⁴ within a given area from an economic regulatory body. In the Philippines, the regulatory body is the National Water Resources Board (NWRB); in Tien Giang, Viet Nam, the permit is obtained from the People's Committee.

The requirements for securing a franchise license from an economic regulatory body are usually the business registration documents; water permit, when applicable; and the engineering drawing of the water facilities. An application form indicating the proposed tariff and the proposed franchise area needs to be filled up as well as other business information. The applicant SSWP must be able to prove its technical, legal, and financial capability to run the business.

However, SSWPs, if subjected to numerous and/or complicated requirements by an economic regulatory body, may not understand or be willing to undertake the required procedures. In this case, a light-handed procedure for SSWPs that have entered into an agreement with main utilities should be formulated. (Refer to Annex 5B for a draft light-handed SSWP regulatory framework undergoing public consultation²⁵ by the Philippine NWRB prior to its adoption.)

Resource Utilization Requirements

Water utilities, including SSWPs, need a water permit or water rights if they are extracting water directly from the ground (groundwater or surface). If the source is from the main utility, then the water right must be obtained by the utility. To secure this right, the data requirements are usually the place of abstraction, method of abstraction, and the volume to be abstracted.

This water right is important to establish the legal right of the abstractor and prevent any water rights or legal conflicts that may arise in the future. This license may be obtained from the NWRB in the Philippines and from the Department of Natural Resources and Environment in Viet Nam.

Water Quality Regulation

Any water operator needs to prove that the quality of water being sold meets certain minimum health requirements or standards set by the country's health authorities. Most countries adopt water quality standards following World Health Organization guidelines wherein chemical and physical tests are required once a year and microbiological tests either monthly or quarterly, with the number of test samples dependent on the served population. The monitoring protocol is usually for test results to be furnished to the regulatory office as required and the test results posted in conspicuous places in the SSWP office. When the SSWP gets its source from the main utility, the water quality tests may be waived for as long as chlorine residuals are monitored. These test results are necessary for the protection of both the consumers and the SSWP itself and to inform the consumers and the regulatory agency of its conformance to health and water quality standards.

Accountability Mechanisms

There are several ways to ensure that an SSWP is conforming to all legal, health, and operational requirements and/or standards.

The first is via the economic regulatory office itself. Economic regulatory bodies (aside from the health authorities) are required to monitor compliance to water quality standards. Business plans are usually required for tariff justification. At the next application for tariff adjustment, the last business plan will be audited for reasonable compliance and the audit results will either have an upward or downward effect on the proposed tariff.

The second compliance route is through an agreement with the CBO representing the beneficiaries. Prior to the project, an agreement should be made between the CBO and SSWP on their roles and responsibilities. A tariff formula should be established if an economic regulatory office does not exist.

Conformance to material standards should be monitored by the main utility. In some cases, the materials are provided by the utility at an agreed cost with the SSWP or the list of accredited contractors and suppliers of the utility is provided to the SSWP to ensure conformance to standards. This conformance requirement is critical because it will be requisite for system integration in the future.

If the CBO itself is the SSWP, then monitoring becomes easier because the beneficiaries are also members of the CBO and can have access to its records. The general assembly meetings of CBOs can likewise be a forum for information sharing and decision making.

The water committee formed at the LGU level serves also as a monitoring unit. This committee should be furnished the business agreements; tariff rates or formulas; and agreed service levels, such as hours of supply and average pressure.

Endnotes

Endnotes

- ¹ Due to added cost entailed by the bulk meter caretaker. Instances have been noted in some countries where the bulk meter caretaker treats the bulk meter as his own and charges consumers whatever he wants.
- ² ADB, Southeast Asian Water Utilities Network (SEAWUN). December 2007. Data Book of Southeast Asian Water Utilities 2005.
- ³ ADB and Ministry of Urban Development, Government of India. 2007. *Benchmarking and Data Book of Water Utilities in India*. Manila.
- ⁴ Public taps are public faucets being supplied by the main utilities where consumers are expected to go for water.
- ⁵ Tien Giang Province has 1.7 million people, 10% of Viet Nam's population (2006).
- ⁶ AFD-FEPP Funded Project; *Water Supply and Sanitation Project in Small Towns of Cambodia*; ADB, February 2006.
- ⁷ The Philippines followed this path wherein all towns and barangays that have less than 50% served population are identified. The National Anti-Poverty Commission and the Department of Public Works then provides the resources to local government units or main utilities for implementing projects to halve this water gap.
- ⁸ To order free copies of Smarter Sanitation, e-mail water@adb.org.
- ⁹ These are areas in the utility franchise area that already have distribution pipelines.
- ¹⁰ Ideally, this should be done after exposure (either through trips or training workshops) to SPWNs or similar interim projects.
- ¹¹ The payment cycle could be weekly, bimonthly, or monthly.
- ¹² In Tien Giang, Viet Nam, seven of 96 small-scale water providers have obtained loans from financial institutions. In the Philippines, several water associations have obtained loans from the Local Water Utilities Administration and rural banks while four cooperatives have been able to obtain loans from financial institutions.
- ¹³ Assets not part of the utility balance sheet assets.
- ¹⁴ Pipes of water utilities are usually given nil values by banks as loan collateral.
- ¹⁵ Bulacan Province in the Philippines maintains a revolving fund used primarily for funding capex of rural water associations. Refer also to the Indonesian small piped water network experience described earlier.
- ¹⁶ For example, the *Small Water Utilities Improvement and Financing Project* being developed by the International Bank for Rural Development (IBRD) in the Philippines.
- ¹⁷ The Environmental Services Program of the United States Agency for International Development helped set up an output-based aid (OBA) contract to increase water for the poor in Surabaya, with 15,500 new connections to be made over a 3-year period. The operator is the local water utility PDAM, which will pre-finance the investment and

be later reimbursed by OBA. The third party in this case is the water utility. For more information on OBA, visit the website www.gpoba.org.

- ¹⁸ UN-Habitat-ADB-Asia Pacific Water Forum; 2007. Local Actions for Sustainable Development.
- ¹⁹ The corporate entities can be public or private.
- ²⁰ Matous, Petr. September 2007. Relation of Slum Dweller's Social Capital and their Gains From Community Based Infrastructure Development. University of Tokyo.
- ²¹ In Tien Giang, Viet Nam, and provinces in the Philippines, the government has a policy of encouraging and utilizing small-scale water providers to provide piped water service in rural areas.
- ²² Exemptions do exist, such as the Department of the Interior and Local Government and the Local Water Utilities Administration in the Philippines, which offer some training for water associations.
- ²³ Economic regulation covers tariff approval, standard setting, and monitoring of utility operations.
- ²⁴ This is called the Certificate of Public Conveyance in the Philippines.
- ²⁵ The consultation was continuing as of April 2008.

Annexes

Annex 1A

Sample Project Study

A. Rationale: The ____ Utility requires new homeowners to pay \$____ up-front for connection fees prior to the installation of the service connections. However, amortization of connection charges over a longer period of time is necessary to enable the poor to apply for connections. This project will demonstrate the feasibility of providing service connections from the utility's bulk meter and extending the connection charges over a 3-year period by a small-scale water provider (SSWP). At present, the proposed beneficiaries are consuming monthly about 5 cubic meters (m³) from vendors, which are selling at \$3/m³ as compared to \$0.50/m³ from the utility.

B. Objective: The Project aims to provide individual house connections to about 750 households located in ____ through the SSWP working with the water utility.

C. Scope: The pilot project would be for (*cite location*) about 750 metered service connections to be provided, plus the pipe network and other water appurtenances.

D. Study Area: (*Give description of the study area citing the number of structures, number of residents, their livelihood, land tenure issues, and the like.*)

E. Pre-Project Conditions: (*Give current sources of water and its cost to the residents; give the main constraint why the utility is unable to provide direct piped connections.*)

F. Cost and Financing: The hardware cost of this project is estimated at \$110,000, which would be financed jointly by the SSWP, the local government unit (LGU), the public utility, and the beneficiaries themselves. The utility shall provide \$15,000 for the main distribution lines up to and including the bulk meters; the beneficiaries shall provide a deposit of 20% of the connection fees (\$15,000); the LGU shall provide a subsidy of \$10,000 with the balance to be shouldered by the SSWP.

G. Implementation: (1) The utility shall engage the services of the SSWP that will implement the project, operate the small piped water network (SPWN) system, and bill and collect from each household connection on a regular basis. The utility shall provide bulk supply and supervise/monitor the construction works to be done by the SSWP, all in accordance with standard specifications as approved by the utility. (2) The SSWP shall prepare a technical plan for approval by the utility. After approval, the SSWP shall then implement the hardware component consisting of about 750 household connections, connections from two bulk meters

and about 10 kilometers of 50–100 millimeter pipes. The SSWP shall then bill the individual household connections on a regular basis (both for water consumption and amortization of connection charges) and pay the utility for the bulk meter consumption and connection charges. Implementation of physical works is expected to take about 3 months.

H. SSWP Selection: The utility and officers of the community-based organization (CBO) shall meet and agree on the selection procedure and selection of the SSWP.

I. Operation and Maintenance: (1) The registered SSWP shall execute an individual service contract with each beneficiary, indicating therein provisions on regular payments, amounts to be paid, billing procedures, grounds for disconnection, and tariffs to be charged. (2) The utility shall supply the water through bulk meters to the project area. Within the project area, the utility and the SSWP shall have joint responsibility for operation and maintenance. (3) The SSWP operation and maintenance functions cover routine operational inspections and regular billing and collection of dues from each household connection (covering consumption and connection charges). Payments of the bulk meter consumption, as well as the connection amortization, will be done by the SSWP to the utility. The regular maintenance and repair of the facilities downstream of the bulk meters will be the responsibility of the utility.

J. Financial Aspects: The Project will, ultimately, be funded by the following:

Beneficiaries thru connection charges	\$75,000
Utility	\$15,000
LGU	\$10,000
SSWP	\$10,000
Total	\$110,000

An add-on charge of \$0.12/m³ will be charged by the SSWP, of which \$0.07 is estimated to be the net profit of the SSWP. This will enable the SSWP to recoup \$36,000 over a 4-year period.

K. Benefits: The pilot project would benefit about 4,000 people with immediate connection to piped water and a reasonable period to pay for the service. In real terms, it will mean going from paying \$___ per month for water from vendors to \$___ per month for consumption and loan repayment. This represents up to ___% savings in household monthly expenditures. Once the connection charges have been paid, another \$___ per month could be saved.

L. Exit Provisions: After the connection charges have been paid by all the beneficiaries, but no sooner than 4 years after operationalization of the bulk meters, the SSWP agrees to

turn over all the facilities to the utility subject to the utility's turnover requirements at that time. All the connected beneficiaries will then be considered direct concessionaires of the utility and be billed based on their individual domestic meter consumption.

The following tables, drawings, or annexes should then be incorporated in the study:

1. System Overview: (should include map of area showing locations of proposed bulk meters, pipelines, and other major appurtenances)
2. Project Cost: (shows materials and their quantities to be used in the Project, as well as engineering costs and contingency amount)
3. Projected Tariffs (includes tariffs agreed with the utility and any proposed add-on charges of SSWP; justification for the add-on charges)
4. Beneficiaries' Projected Consumption and Monthly Payments: (should show the benefits)
5. Projected Cash Flows and Income Statements: (will show how the SSWP will be able to recover all costs plus a reasonable return within 4 years prior to turnover)

Annex 1B

Selection Criteria and Terms of Reference for a Small-Scale Water Provider

Criteria for Selection

1. Experience and Capability

The small-scale water provider (SSWP) must have experience in operating or constructing water systems. If none, the SSWP staff must have utility operational or construction experience.

2. Financial Resources

The owners or incorporators of the SSWP must be able to include in their proposal their source of funding (either from equity or from borrowings).

3. Other Factors

Previous work experience in the community or past record of projects done (even those not related to water) could be considered to determine trustworthiness or commitment on the part of the operator.

Terms of Reference

1. The operator shall prepare a proposal to be approved by the utility indicating therein the water source, network design, material specifications, project estimates, and tariff levels to provide ____ (24/7) supply of water that meets government water quality standards at an average pressure of ____.

2. The operator shall provide all plant, materials, and equipment necessary to build and operate the project as per the submitted proposal or as per agreement with _____. The operator should complete all works required to operationalize the system in ____ weeks from ____.

3. The tariffs to be charged by the operator should be in accordance with Schedule __ as attached and which shall be incorporated in the service contract between the operator and the individual households.

Annex 2A

Sample Agreement for Business Model 1 (Between the Utility and Community-Based Organization)

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) dated _____ by and between the UTILITY and the Community-Based Organization (CBO), in connection with the small piped water network (SPWN) project located in _____

WITNESSETH: THAT WHEREAS

- A. The UTILITY has jurisdiction, supervision, and control over all waterworks and sewerage systems within _____;
- B. The residents of _____ all located in _____ and represented by its CBO, have expressed their desire to access the water services of the UTILITY through a modified bulk metering scheme and amortization of the connection charges over a period of ____ months;
- C. The UTILITY has agreed to provide piped water service to the residents of _____, as represented by their CBO, through a bulk selling scheme at residential rates, as well as the amortization of connection charges;
- D. It is the intention of the Parties to eventually turn over the commercial operations of the SPWN to the UTILITY;
- E. The Parties have been duly authorized by appropriate corporate action to enter into this Agreement by their Board Resolutions, which are shown in Annexes A and B;

NOW, THEREFORE, The UTILITY and the CBO have reached the following agreement:

Article 1

Definition

Section 1.1. For purposes of this MOA, the following terms have the following meanings:

- a. "CBO" means the community-based organization of _____ located in _____ and bounded by _____;
- b. "Project" also means the SPWN, which covers all pipelines and other water facilities laid down before and after the bulk meter/s up to and including the individual house connections and which are all to be constructed by the UTILITY within the Project Area;
- c. "Commercial Operations" means the activities with respect to the periodic billing and collection of charges and fees connected with the water service, including the disconnection of the service due to nonpayment;
- d. "Bulk Water Scheme" means a distributor–retailer type of arrangement where the UTILITY (the distributor) sells water through bulk meter/s to the CBO (the retailer).

Article 2

The Scope of Project and Cooperation

Section 2.1. The work to be performed by the UTILITY under this MOA is more particularly described in the Description of Project set forth in Annex C to this MOA.

Section 2.2. The UTILITY will provide all the facilities before and after the bulk meter/s up to and including the individual house connections;

Section 2.3. The UTILITY shall commence the Project activities from signing of this MOA and shall use its best efforts to complete the Project by no later than _____.

Article 3

Rights and Obligations

Section 3.1 The UTILITY shall

- a. Provide water supply via bulk meter/s to the CBO by constructing the necessary project facilities using its own fund;

- b. Maintain, repair, and refurbish the project facilities for a period of ____ years from the date it provides water to the bulk meter/s;
- c. Repair or replace the bulk/master meter free of charge except when the bulk/master meter is found to have been tampered intentionally, damaged, or rendered nonfunctional due to the act of the CBO or its members or by any known or unknown third person(s) in which case the CBO shall pay the UTILITY the actual cost of the damage, including the cost of water supplied and lost as a result of the damage;
- d. Maintain all project facilities free of charge to the CBO;
- e. Treat the CBO consumers as direct customers of the UTILITY after turnover of the commercial operations within the SPWN. The CBO customers shall no longer be charged additional connection charges; and
- f. Cut off the water supply provided to the CBO bulk meter/s in the event of failure of the CBO to pay any obligations to the UTILITY.

Section 3.2 The CBO shall

- a. Conduct public hearings together with the UTILITY for the purpose of information dissemination to and consultations with its members;
- b. Furnish the UTILITY a list of its members willing to avail of the piped water services at terms and conditions mutually agreed on with the UTILITY;
- c. Appoint or cause to be elected street (or area) leaders who shall be responsible for the commercial operations of specific areas within the SPWN;
- d. Enter into a Service Agreement with the beneficiary households in the Project area. The agreement shall include provisions on the amortization of the service connection charge and other details pertaining to the billing, collection, basis of billing, disconnection, and default in payment;
- e. Perform the following functions, including but not limited to, the following:
 - i. Bill and collect payments for the water consumption and connection fees of individual homeowners within its jurisdiction during the term of this MOA;

- ii. Charge the customers an approved tariff to be determined by a competent authority, the Regulatory Office, or the UTILITY Board as the case may be;
- iii. Report all leaks within the SPWN to the UTILITY for immediate action;
- iv. Turn over the commercial operations of the SPWN to the UTILITY after ___ years from signing of this MOA. At a reasonable time, but prior to the proposed date of turnover, give written notice to the individual homeowners within the communities as to the effective date of the turnover of commercial operations to the UTILITY and furnish the individual homeowners with all necessary documents evidencing the cancellation of the existing water service contracts between the individual homeowners and the CBO;
- v. Abide by and observe all policies of the UTILITY, including its rules and regulations, and all laws and ordinances, including those which may therein after be promulgated by competent authority;
- f. Maintain records on the payments made by the homeowners with respect to the connection and consumption charges;
- g. Pay for all bulk meter consumption charges and the connection fees to the UTILITY in accordance with the terms in Annex D; and
- h. Grant the UTILITY peaceful and uninterrupted entry to and perpetual easement of right-of-way over the water distribution system, as well as over common and public lots within the area where such water pipes are laid, buried, or situated for the purpose of maintaining, repairing, rehabilitating, or replacing the same. All necessary permits from concerned government agencies shall be obtained by and shall be for the account of the UTILITY to fulfill its obligations to operate the water system. In this connection, the CBO shall cooperate with the UTILITY in obtaining the said permits.

Article 4

General Provisions

Section 4.1.

- a. The officials responsible for the implementation of this MOA shall be
- b. For the UTILITY: President ____ or any officer or officers as duly authorized by such representative of the UTILITY in writing.

c. For the CBO: President _____ or any officer or officers as duly authorized by such representative in writing.

d. Any notice or request so permitted to be given or made under this MOA shall be written in the English language and shall be deemed to be duly given or made when it shall have been delivered by hand, mail, or facsimile to the following address:

For the UTILITY

(UTILITY Name)

Address:

Telephone:

Facsimile:

Attention:

For the CBO

(CBO Name)

Address:

Telephone:

Facsimile:

Attention:

Section 4.2. This MOA shall become effective on the date of signing hereof. This MOA shall be in full force and effect until the commercial operations within the Project shall have been turned over to the UTILITY in accordance with pertinent provisions of this MOA.

Section 4.3. The MOA may be amended following consultation between the parties. All such amendments shall be in writing signed by the authorized representatives of the parties to this MOA, as identified under section 4.1 of this MOA. Mutually agreed upon amendments shall constitute part of this MOA and all conditions and provisions of this MOA shall apply to such amendments.

Section 4.4. The UTILITY and the CBO shall jointly furnish the local government unit (LGU) of ___ where the CBO is situated a copy of this MOA and shall request the formation of the LGU Water Committee whose function shall be monitoring service levels and dispute resolution. Any dispute arising out of, or in any way relating to, this MOA or its interpretation or performance shall be referred to this Water Committee for arbitration.

IN WITNESS WHEREOF the parties hereto affixed their signatures on the day and year first written above.

For the UTILITY

By:

President

For the CBO

By:

President

Annex 2B

Sample Agreement for Business Model 2 (Between the Utility and Small-Scale Water Provider; Full Utility Functions)

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) dated _____ by and between the UTILITY and the Small-Scale Water Provider (SSWP) in connection with the small piped water network (SPWN) project located in _____

WITNESSETH: THAT WHEREAS

A. The UTILITY has jurisdiction, supervision, and control over all waterworks and sewerage systems within _____;

B. The residents of _____ all located in _____ and represented by its CBO, have expressed their desire to access piped water services of its appointed SSWP;

C. The UTILITY has agreed to allow the SSWP to provide piped water service to the residents of _____, for a term of ____ years;

D. It has been agreed by both Parties that should the UTILITY be willing or able to provide piped water services to the said community after ____ years, the source and SPWN facilities constructed by the SSWP for the project shall be turned over to the UTILITY at mutually accepted terms and conditions;

E. The Parties have been duly authorized by appropriate corporate action to enter into this Agreement by their Board Resolutions, which are shown in Annexes A and B, and conformity of the CBO, as shown in the attached document Acknowledgment and Consent marked as Annex C;

NOW, THEREFORE, The UTILITY and the SSWP have reached the following agreement:

**Article 1
Definition**

Section 1.1. For purposes of this MOA, the following terms have the following meanings:

- a. "CBO" means the community-based organization of _____ located in _____ with boundaries at _____;
- b. "Project" also means the Small Piped Water Network ("SPWN") which includes the source facilities, transmission pipes, treatment facilities, and distribution facilities up to the individual household meters to be installed by the SSWP for providing piped water services to the CBO;
- c. "Technical Proposal" means the proposal to be submitted by the SSWP to the UTILITY for its approval, containing among others, the location plan, the proposed materials and its specifications, engineering plans and drawings, implementation schedule, number of households to be connected, terms of the connection fees, and tariff proposals;
- d. "Project Completion Date" means the date that the SSWP has commenced the technical and commercial operations within the Project area as evidenced by its official notification to and approval by the UTILITY.

**Article 2
The Scope of Project and Cooperation**

Section 2.1. The work to be performed by the SSWP under this MOA is more particularly described in the Description of Project set forth in Annex D to this MOA.

Section 2.2. The SSWP will provide all the facilities from the supply source up to the individual household meters.

Section 2.3. The SSWP, under the guidance and supervision of the UTILITY, shall commence the Project activities from _____ and shall use its best efforts to complete the Project by no later than _____.

Article 3
Rights and Obligations

Section 3.1 The UTILITY shall

- a. Review and give its approval to the Technical Proposal submitted by the SSWP:
- b. Supervise free of charge the construction/installation and commissioning of the water facilities for the CBO area by SSWP per the SSWP approved plans;
- c. Accept the SPWN facilities upon its turnover by the SSWP ___ years after signing of this MOA subject to terms and conditions mutually acceptable to both parties; and
- d. Ensure that the SSWP water quality meets the approved standards, and tariff and connection charges have been approved by the relevant authorities.

Section 3.2 The SSWP shall

- a. Prepare the required Technical Proposal for review and approval by the UTILITY;
- b. Have the overall responsibility for the implementation of the Project, including all aspects of material procurement, construction and commissioning of the SPWN facilities, subject to technical supervision by the UTILITY;
- c. Acquire the necessary business permits, water permits, and permit to operate a utility, as well as the rights-of-way and other rights and privileges, for the purpose of project implementation;
- d. Complete the civil works of the Project in accordance with the approved work program within a maximum of ___months from the date of this MOA;
- e. Provide notice of project completion to the UTILITY for its review and approval;
- f. Enter into a Service Agreement with the beneficiary households in the Project area. The agreement shall include provisions on the amortization of the service connection charge and other details pertaining to the billing, collection, basis of billing, disconnection, and default in payment;
- g. Perform the following functions, including but not limited to, the following:
 - i. Bill and collect payments for the water consumption and connection fees of individual homeowners within its jurisdiction during the term of this MOA;

- ii. Charge the customers an approved tariff to be determined by a competent authority, the Regulatory Office, or the UTILITY Board as the case may be;
- iii. Provide proper maintenance and/or facility replacement to ensure maximum efficiency;
- iv. Turn over the SPWN to the UTILITY after ____ years after signing of this MOA. At a reasonable time, but prior to the proposed date of turnover, give written notice to the individual homeowners within the communities as the effective date of the turnover of the SPWN to the UTILITY and furnish the individual homeowners with all necessary documents evidencing the cancellation of the existing water service contracts, if any, between the individual homeowners and SSWP;
- h. Abide by and observe all policies of the UTILITY, including its rules and regulations, and all laws and ordinances, including those which may therein after be promulgated by competent authority;
- i. Maintain records on the repayments made by the homeowners with respect to the connection and consumption charges;
- j. Prepare and submit to the UTILITY a Project Completion Report within 2 months after project completion, indicating actual facilities installed, list of beneficiaries, and the as-built plan;
- k. Pay for all connection fees to the UTILITY in accordance with the schedule shown in Annex E; and
- l. Grant the UTILITY peaceful and uninterrupted entry over the water distribution system, as well as over common and public lots within the area where such water pipes and other facilities are laid, buried, or situated for the purpose of periodic monitoring or assessment.

Article 4

Legal Title and Ownership

Legal title to and ownership of the SPWN shall remain with the SSWP. However, at the proper time and under mutually agreed terms, the SSWP shall turn over the ownership thereof to the UTILITY, provided that the same shall be devoted to the purposes defined under this MOA.

Article 5
Turnover Terms

Section 5.1. The UTILITY and the SSWP shall conduct a joint inventory of the Water System and other appurtenances to be turned over with a third-party auditor to determine asset condition and validation of non-revenue water, pressure conditions, and source capacity.

Section 5.2. The UTILITY agrees that the SSWP shall be reimbursed for unrecovered investments during the ____ years of SSWP operation less the amount the UTILITY would still have to spend in order to have the system last for another ____ years.

Article 6
General Provisions

Section 6.1.

- a. The officials responsible for the implementation of this MOA shall be
- b. For the UTILITY: President ____ or any officer or officers as duly authorized by such representative of the UTILITY in writing.
- c. For the SSWP: President _____ or any officer or officers as duly authorized by such representative in writing.
- d. Any notice or request so permitted to be given or made under this MOA shall be written in the English language and shall be deemed to be duly given or made when it shall have been delivered by hand, mail, or facsimile to the following address:

For the UTILITY

(UTILITY Name)

Address:

Telephone:

Facsimile:

Attention:

For the SSWP:

(SSWP Name)

Address:

Telephone:

Facsimile:

Attention:

Section 6.2. This MOA shall become effective on the date of signing hereof. This MOA shall be in full force and effect until the Project has been turned over to the UTILITY in accordance with pertinent provisions of this MOA.

Section 6.3. The MOA may be amended following consultation between the parties. All such amendments shall be in writing signed by the authorized representatives of the parties to this MOA, as identified under Section 6.1 of this MOA. Mutually agreed upon amendments shall constitute part of this MOA, and all conditions and provisions of this MOA shall apply to such amendments.

Section 6.4. Any dispute arising out of, or in any way relating to, this MOA or its interpretation or performance shall be referred to arbitration which shall take place in ____ and shall be settled under the Rules of Conciliation and Arbitration of the ____ by an arbitrator/s selected in accordance with the said Rules. The Award of arbitration shall be final and binding on all parties and shall be in lieu of any other remedy.

IN WITNESS WHEREOF the parties hereto affixed their signatures on the day and year first written above.

For the UTILITY

By:

President

For the SSWP

By:

President

Annex 2C

Sample Agreement for Business Model 3 (Between the Utility and Small-Scale Water Provider)

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) dated _____ by and between the UTILITY and the Small-Scale Water Provider (SSWP) in connection with the small piped water network (SPWN) project located in _____

WITNESSETH: THAT WHEREAS

- A. The UTILITY has jurisdiction, supervision, and control over all waterworks and sewerage systems within _____;
- B. The residents of _____ all located in _____ and represented by its community-based organization (CBO), have expressed their desire to access the water services of the UTILITY through a modified bulk metering scheme and have agreed that the SPWN will be constructed by their assigned SSWP;
- C. The UTILITY has agreed to provide water service to the residents of _____, as represented by their CBO, through a bulk selling scheme at residential rates;
- D. It is the intention of the Parties to eventually turn over the SPWN installed by the SSWP to the UTILITY;
- E. The Parties have been duly authorized by appropriate corporate action to enter into this Agreement by their Board Resolutions, which are shown in Annexes A and B, and conformity of the CBO, as shown in the attached document Acknowledgment and Consent marked as Annex C;

NOW, THEREFORE, The UTILITY and the SSWP have reached the following agreement:

**Article 1
Definition**

Section 1.1. For purposes of this MOA, the following terms have the following meanings:

- a. "CBO" means the community-based organization of _____ located in _____
_____;
- b. "Project" also means the SPWN, which covers all pipelines and other facilities laid down after the bulk meter up to and including the individual meter connections and which is to be constructed by the SSWP within the Project Area;
- c. "Bulk Water Scheme" means a distributor–retailer type of arrangement where the UTILITY (the distributor) sells water through bulk meter/s to the SSWP (the retailer);
- d. "Technical Proposal" means the proposal to be submitted by the SSWP to the UTILITY for its approval, containing among others, the location plan, the proposed materials and its specifications, engineering plans and drawings, implementation schedule, number of households to be connected, terms of the connection fees, and tariff implications; and
- e. "Project Completion Date" means the date that the SSWP has assumed commercial operations within the Project area as evidenced by its official notification to and approval by the UTILITY.

**Article 2
The Scope of Project and Cooperation**

Section 2.1. The work to be performed by the SSWP under this MOA is more particularly described in the Description of Project set forth in Annex D to this MOA.

Section 2.2. The UTILITY shall provide all the facilities up to and including the bulk meters at its own expense and the SSWP shall be responsible for funding and implementing all the SPWN facilities.

Section 2.3. The SSWP, under the guidance and supervision of the UTILITY, shall commence the Project activities from _____ and shall use its best efforts to complete the Project by no later than _____.

Article 3 Rights and Obligations

Section 3.1 The UTILITY shall

- a. Review and give its approval to the Technical Proposal submitted by the SSWP;
- b. Provide water supply to the SSWP by constructing the necessary transmission or distribution line from the tapping point to the project bulk meter/s using its own fund;
- c. Maintain, repair, and refurbish the SPWN for a period of ____ years from the date it provides water to the SSWP to the bulk meter/s;
- d. Repair or replace the bulk/master meter free of charge except when the bulk/master meter is found to have been tampered intentionally, damaged, or rendered nonfunctional due to the act of the SSWP or by any known or unknown third person(s) in which case the SSWP shall pay the UTILITY the actual cost of the damage, including the cost of water supplied and lost as a result of the damage;
- e. During the __ year period stated in Section 3.1 (iii), the UTILITY shall, at its own expense
 - i. conduct preliminary and final pressure/leakage test on the reticulation of the Project, including the flushing and disinfection of the interconnecting water line;
 - ii. conduct flushing and disinfection of the SPWN prior to interconnection to the bulk meter; and
 - iii. perform repair maintenance on all facilities free of charge from the bulk meter/s to the individual house connections upon request of the SSWP;
- f. Accept the SPWN facilities upon its turnover by the SSWP __ years after commencement of the SSWP's commercial operation subject to the SSWP's compliance with the provisions of this MOA and utility conditions at time of turnover; and

- g. Cut off the water supply provided to the SSWP in the event of failure to pay any obligations to the UTILITY.

Section 3.2 The SSWP shall

- a. Prepare the required Technical Proposal for review and approval by the UTILITY;
- b. Have the overall responsibility for the implementation of the Project, including all aspects of material procurement, construction, and commissioning of the SPWN facilities, subject to technical supervision by the UTILITY;
- c. Acquire the necessary business permits, water permits, and permit to operate a utility, as well as the rights-of-way and other rights and privileges, for the purpose of project implementation and operation;
- d. Complete the civil works of the Project in accordance with the approved work program within a maximum of ___months from the date of this MOA;
- e. Enter into a Service Agreement with the beneficiary households in the Project area. The agreement shall include provisions on the amortization of the service connection charge and other details pertaining to the billing, collection, basis of billing, disconnection, and default in payment;
- f. Perform other functions, including but not limited to, the following:
 - i. Bill and collect payments for the water consumption and connection fees of individual homeowners within its jurisdiction during the term of this MOA;
 - ii. Charge the customers an approved tariff to be determined by a competent authority, the Regulatory Office, or the UTILITY Board as the case may be;
 - iii. Do preventive maintenance on the SPWN facilities and report all leaks in the SPWN to the UTILITY for immediate action;
- g. Turn over the SPWN facilities to the UTILITY after ___ years of commercial operations. At a reasonable time, but prior to the proposed date of turnover, give written notice to the individual homeowners within the communities as to the effective date of the turnover of the SPWN to the UTILITY and furnish the individual homeowners with all necessary documents evidencing the cancellation of the existing water service contracts between the individual homeowners and SSWP;

- h. Abide by and observe all policies of the UTILITY, including its rules and regulations, and all laws and ordinances, including those which may therein after be promulgated by competent authority;
- i. Maintain records on the billing and payments made by the homeowners with respect to the connection and consumption charges;
- j. Prepare and submit to the UTILITY a Project Completion Report within 2 months after project completion, indicating actual facilities installed, list of beneficiaries, and the as-built plan;
- k. Pay for bulk meter consumption charges and connection fees to the UTILITY in accordance with the terms on Annex E; and
- l. Grant the UTILITY free access and the right of peaceful and uninterrupted possession and use of the water distribution system during the term of this Agreement. Furthermore, the SSWP shall also grant peaceful and uninterrupted entry to and perpetual easement of right-of-way over the water distribution system, as well as over common and public lots within the area where such water pipes are laid, buried, or situated for the purpose of maintaining or repairing the same. All necessary permits from concerned government agencies shall be obtained by and shall be for the account of the UTILITY to fulfill its obligations to operate the water system. In this connection, the SSWP shall cooperate with the UTILITY in obtaining the said permits.

Article 4

Legal Title and Ownership

Legal title to and ownership of the SPWN shall remain with the SSWP. However, at the proper time and under mutually agreed terms, the SSWP shall donate the ownership thereof to the UTILITY, provided that the same shall be devoted to the purposes defined under this MOA.

Article 5
General Provisions

Section 5.1.

- a. The officials responsible for the implementation of this MOA shall be
- b. For the UTILITY: President ____ or any officer or officers as duly authorized by such representative of the UTILITY in writing.
- c. For the SSWP: President _____ or any officer or officers as duly authorized by such representative in writing.
- d. Any notice or request so permitted to be given or made under this MOA shall be written in the English language and shall be deemed to be duly given or made when it shall have been delivered by hand, mail, or facsimile to the following address:

For the UTILITY

(UTILITY Name)

Address:

Telephone:

Facsimile:

Attention:

For the SSWP

(SSWP Name)

Address:

Telephone:

Facsimile:

Attention:

Section 5.2. This MOA shall become effective on the date of signing hereof. This MOA shall be in full force and effect until the Project has been turned over to the UTILITY in accordance with pertinent provisions of this MOA.

Section 5.3. The MOA may be amended following consultation between the parties. All such amendments shall be in writing signed by the authorized representatives of the parties to this MOA, as identified under Section 5.1 of this MOA. Mutually agreed upon amendments shall constitute part of this MOA, and all conditions and provisions of this MOA shall apply to such amendments.

Section 5.4. The UTILITY and the SSWP shall jointly furnish the local government unit (LGU) of ___ where the CBO is situated a copy of this MOA and shall request for the formation of the LGU Water Committee whose function shall be monitoring service levels and dispute resolution. Any dispute arising out of or in any way relating to this MOA or its interpretation or performance shall be referred to this Water Committee for arbitration.

IN WITNESS WHEREOF the parties hereto affixed their signatures on the day and year first written above.

For the UTILITY

By:

President

For the SSWP

By:

President

Annex 3: Business Plan Framework for Piped Water Providers

Introduction

The framework and templates given herein provide for easier preparation of a business plan by any piped water provider (PWP). The plan serves three purposes.

First, the PWP will need a business plan to determine future directions and for assessing its own performance or progress. A business plan that provides the framework for the directions and strategies has to be conceived by the PWP. The preparation stage will necessitate planning, structuring the planning activities, and consultation with the proposed beneficiaries. The business plan also provides a basis for the enterprise annual budgets.

Second, the business plan serves as a monitoring tool by the regulatory body in the analysis of a PWP's performance. The business plan indicates the targeted service levels, as well as the key performance indicators in a given period, and this can serve as the initial performance benchmark. A subsequent or updated business plan will consequently have updated performance levels; these new data could be compared with the benchmark data to determine the PWP's progress. Thus, the business plans will trigger the need for appropriating for interventions required.

Lastly, a business plan is always required to be submitted in any request for funding by financial institutions. The information provided by the templates herein will give any financial institution the information required for an initial desktop appraisal of the funding request.

The use of the templates contained herein will provide a structured and logical preparation of a PWP business plan. The documents herein are considered minimum requirements and were prepared with the PWP as the user. Some modifications may be required depending on country requirements, service area, PWP size, and circumstances and user requirements.

BUSINESS PLAN FRAMEWORK FOR PIPED WATER PROVIDERS

Purpose

The preparation of a business plan basically serves three purposes: i) to provide the general direction and strategy to be adopted within the plan period; ii) to provide the PWP owners or Board with a tool for benchmarking or monitoring its own operations; and iii) to serve as backup document to the PWP's request for funding from any funding institution. The use of this framework will provide a structured approach in the preparation and use of a business plan. The documents required to be prepared and submitted will, however, ultimately depend on the user requirements.

Business Plan Considerations

A basic business plan should consider the following:

Plan Horizon. The planning horizon will generally depend on the requirements of the user and should strike a balance for both short- and long-term situations. The operating period of the franchise, desire for a certain payback period, bank requirements, investment requirements, amortization period, and tariff adjustment period will all affect the planning period. The usual range is 3–10 years; this plan uses 5 years as its planning period.

Existing Performance. If the PWP already exists, it would be best to determine its existing performance level. Existing service or performance levels can also provide an idea of the PWP's strengths or weaknesses. Without an evaluation of its existing performance, a picture will be created in the minds of readers that the PWP does not have a monitoring system or that management capability leaves something to be desired. At any rate, the existing performance can serve as benchmark for assessing future progress.

Key Result Areas (KRAs) and Key Performance Indicators (KPIs). KRAs are major areas of concern in which the PWP is expected to concentrate its efforts during the planning period. For a PWP, the major KRAs are service levels, operational efficiency, financial effectiveness, and institutional development. KPIs are quantitative measures of the performance of the utility with respect to its KRA goals or standards. As examples, KPIs for service levels are nonrevenue water, population served, average pressure, and supply continuity; for operational efficiency, the KPIs are staff productivity index, nonrevenue water, production cost per cubic meter, and collection efficiency; for financial effectiveness, the KPIs are net income ratio, operating ratio, and debt service ratio; and for institutional development, the KPIs are number of staff trained and average response time to customer complaints.

Major Capex Programs. These are projects that will require external funding. A business plan should contain a profile of these projects for several reasons. Mainly, it gives the PWP

an idea of the external financial resources necessary for accomplishing its target. The profile should include various alternatives for selection of the least-cost alternative or go into a detailed feasibility study. The capex estimates also will have a large bearing on the PWP's financial picture, hence forcing it to prepare corollary plans, such as tariff adjustment and financing plan.

Activities and Processes Required

Prior to the formulation of the business plan, an existing PWP should undertake an assessment of its performance over at least 2 prior years. This will give a benchmark position and identify factors that caused any plan deviation and could initially pinpoint strengths and weaknesses of the organization.

The first phase of the planning process should determine future targets or goals within the different KRAs. The organization must initially determine the KRAs, and its priority KPIs, then determine KPI goals.

The second phase consists of formulating capex plans and preparing financial statements, including action plans that are necessary to achieve the goals identified during the first phase. Action plans are required activities to either eliminate or reduce the PWP's weaknesses or to leverage strengths of the organization/staff. The financial planning component may require an assessment of commercial financing options.

The third phase should finalize the annual budget.

The end results of business planning are the short-term (1 year) and medium-term (2–5 years) business plans, as well as a monitoring system for determining progress.

For monitoring purposes, the PWP should prepare semiannual and/or annual updates on the plan status, as well as the selected KPIs for its evaluation. The results of the annual evaluation can and should form the basis for the subsequent year detailed plans and budget requirements. The plan should then be updated on an annual basis, making it a 5-year rolling plan.

Business Plan Contents

1. **Figure 1** provides a schematic view of the business plan framework.
2. **Target Service Levels.** This template presents the existing and proposed service levels of the utility in the planning period. Service levels generally pertain to area coverage, water quality, continuity of supply and pressure. The format is given as Appendix 1.

3. **Demand/Supply Projections.** Appendix 2 gives an estimate of the projected demand, as well as how the PWP will be able to meet such demand. Any project needed to meet the demand and distribution requirements should be presented in Appendix 3 and in the capex account in the cash flow.
4. **Capital Projects.** Appendix 3 outlines the major¹ capex programs of the PWP and proposes the funding source for each project. For presentation to a financial institution, the feasibility study for the project may be attached for reference.
5. **Cash Flow.** The minimum requirements for the cash flow are given in Appendix 4. Assumptions taken in preparing the cash flow should be mentioned as a footnote.
6. **Proposed Tariff Structure.** Appendix 5 should detail how the proposed tariff structure was derived. This is a required document for any proposed tariff adjustment within the given 5 years.
7. **Projected Key Performance Indicators.** Appendix 6 gives the reader an idea of the projected targets of the utility in terms of service levels or operational efficiency, and financial effectiveness. It also provides a monitoring tool or a benchmark for the PWP to determine its progress or performance.

Other Information for Borrowing Purposes

1. **Debt Service Status.** In cases of PWP's with existing loans with financial institutions and applying for a loan with a bank, this document should be submitted to the proposed bank. The document contains the loans obtained with their terms, when obtained, the payments made, and outstanding loan balance with repayment schedules. This is generally a requirement by lenders to gauge the capacity of the borrower to service existing and future loans.
2. **Projected Financial Statements.** This pertains to the projected income, balance sheet, and cash flow over the plan horizon.
3. **PWP Profile.**
 - a. General Information: A generic format is given as Appendix 7 and can be used to give general information about the PWP to the reader, whether internal or external to the organization.

¹ These projects can be defined as projects needing external financing.

- b. **Asset Register:** This is a list of water assets currently owned by the PWP. The format is given as Appendix 8. This list is to give the lender (or regulatory office) an idea of the utility's operational facilities, nature of operations, and assets owned.

Business Plan Variations

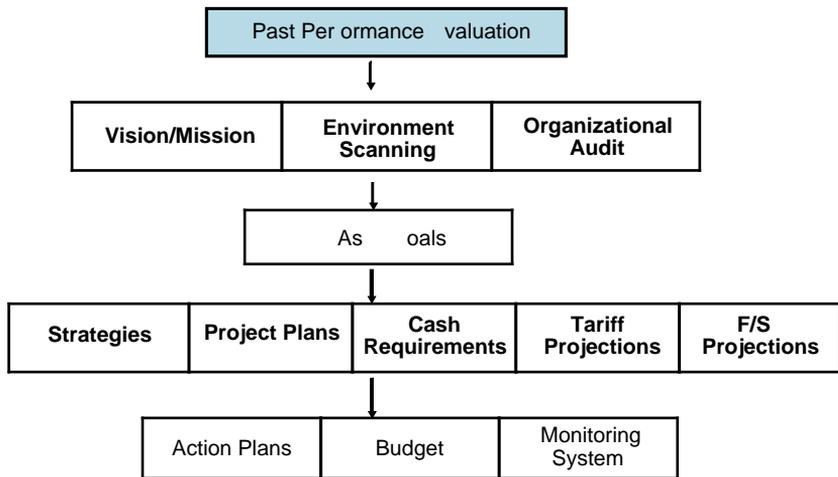
As mentioned, business plans can serve different purposes. Typical uses and other specific requirements are described below.

Borrowing Purpose. An introductory letter detailing the specific request, as well as the collateral that can be offered, will have to be included. This collateral can be in the form of real assets, locked-in deposits, etc. A pre-project or feasibility study will likewise be required for submission by the lender to determine project viability. For nonproject-specific loans, such as a program or company loan, past and projected financial statements are necessary and will help lenders determine the utility's financial capability and performance.

Budget Approval. For PWPs that are business corporations, after the Board has approved the business plan, it will be necessary for management to provide a detailed cash flow for the year in review. Attached to this will be the details or schedules for each budget account. The required organizational chart may even require Board approval if there are changes in the structure or staffing requirements.

Tariff Adjustment Approval. For the required tariff approval from an economic regulatory agency, various documents indicating compliance with legal requirements are necessary. However, the business plans are used to justify any tariff adjustments within the plan period.

Figure 1: Business Plan Framework



Appendix 1: Projected Service Levels									
Service	Existing	Years							
		1	2	3	4	5	7	10	
Number of Connections									
Villages/Communities Covered									
Supply Continuity ^a (no. of hours)									
Average ^a Pressure									
Water ^b Quality									

Note: ^a Average supply hours/pressure pertains to at least 80% of connections.
^b Pertains to physical/chemical parameters that consistently fail to meet standards.

Appendix 2: Demand/Supply Projections						
DEMAND	0	1	2	3	4	5
New Connections						
Total Connections						
Ave? Persons/Connection (ave. no.)						
Population Directly Served						
Population in Franchise/Target Area						
Average Consumption/Connection per Month						
Volume Sold/Year						
SUPPLY	0	1	2	3	4	5
Installed Production Capacity						
Percentage (%) Nonrevenue Water						
Production Requirements (cubic meters per year)						
Bulk Water Purchase (cubic meters per year)						
Production (cubic meters per year)						
Water Surplus/Shortage per Year						

Appendix 3: Major Capital Projects		
Project Name / Funding Source	Major Components and Cost	Project Justification

Appendix 4: Cash Flow						
	0	1	2	3	4	5
GENERAL DATA						
Year-end Connections						
Mid-year Connections						
Market Growth/Year						
Service Area Population						
% Population Served						
Consumption/Connection/Month (cubic meters)						
Billed Water ('000 cubic meters)						
% Nonrevenue Water						
Production ('000 cubic meters)						
% Increase in Production						
Effective Rate/Cubic Meter						
% Rate Increase						
Collection Efficiency						
CASH RECEIPTS						
Current Water Sales						
Other Receipts						
Collection of Previous Year's Debt						
TOTAL RECEIPTS						
CASH DISBURSEMENTS						
Operation and Maintenance						
Salaries						
Power						
Chemicals						
Others						
TOTAL						
DEBT SERVICE						
CAPEX						
Reserves						
TOTAL DISBURSEMENTS						
CASH INFLOW (Deficit)						
Add: Beginning Cash Balance						
ENDING CASH BALANCE						

Appendix 5: Tariff Structuring			
A. Consumption Patterns			
Connection Size	Connection Type	Number	Average Consumption/Month
B. Projected Number of Connections			
C. Detailed Calculations			

Appendix 6: Projected Key Performance Indicators						
Performance Indicator	Year					
	Current	1	2	3	4	5
Service Levels						
Hours of Supply						
Pressure						
% Water Samples Passing Tests						
Operational Efficiency						
Nonrevenue Water						
Operational Cost/Cubic Meter Billed						
Average Selling Price/Cubic Meter Billed						
Collection Efficiency						
Connections/Staff						
Financial Effectiveness						
Net Income Ratio						
Debt–Equity Ratio						
Operating Ratio						
Current Ratio						

Appendix 7: Water Operators Profile	
Private Water Provider Name	<i>[Includes, when stated, franchise area and population, water source, regulator, and name of owner or chief executive officer]</i>
Mission Statement (Optional)	
General Data	Connections: No. of Staff: Annual Operation and Maintenance Cost: Annual Collections: Annual Billings: Nonrevenue Water: Operating Ratio: Source of Investment Funds: Average Tariff/Cubic Meter:
Tariff Structure	
Performance Highlights	<i>[What is it the PWP can be proud of?]</i>

Appendix 8: Asset Register							
	Useful Life (year)	Year Acquired	Expired Life	Acquired Cost	Dep Exp	Acc Dep	Net Book Value
	b	c	d	e	f=e/b	g=f x d	h=e-g
Land							
Deepwell/Pump Houses							
Deepwells	15						
Pump and motor	8						
Motor controls	7						
Pump house, light materials	10						
Pump house, concrete	40						
Booster Station							
Pump house	40						
Pump assembly	20						
Motor	5						
Motor Controls	20						
Reservoir							
Concrete reservoir	40						
Steel tank	30						
Impounding Structure/Dam	50						
Treatment Plant							
Structure	40						
Equipment	15						
Controls	20						
Pipelines							
Steel pipes	40						
Other pipes	30						
Service Connections	7						
Valves/Production Meter	30						
Fire Hydrants	20						
Building/Improvements	40						
Office Furniture/Fixtures	10						
Office Equipment	5						
Vehicles	5						
Tools/Equipment	10						
Chlorinating Equipment	10						
Inventory							
Total Property and Equipment							

Annex 4: Roles and Functions of a Water Committee

Rationale for Formation

A Water Committee needs to be formed at the local government unit (LGU) (or cooperative) level to handle customer complaints that need third-party intervention for resolution and to represent the customers. This is especially crucial if the small-scale water provider (SSWP) provides piped services directly to the households and does not have an agreement with a community-based organization (CBO).

Roles and Functions

1. Monitoring and mediating in customer complaints: Some complaints, notably meter accuracy and billing issues, may need third-party intervention to ensure objectivity in decision making. The monitoring of complaints will improve efficiency of the SSWP, knowing that a monitoring system is in place.
2. Information dissemination: The Water Committee can take the lead role in disseminating water quality test results and other information relating to tariff issues.
3. Assistance in contract implementation: Service levels, construction, easement, and other standards that are being enforced by LGU could easily be monitored.
4. Water quality monitoring: This is necessarily a part of the LGU role—to prod the SSWP to be more vigilant with respect to water quality test results and procedures.

Organizational Setup

A five-person committee with fixed terms, say 2 years, to ensure decisional consistency will suffice for this purpose. The initial membership must have different tenures: two persons can serve for 2 years; two for a 1-year period, with the 5th member serving for 3 years would be a suitable arrangement. All replacements could then be made for 2 years each. What is important is that at no time will all the members be replaced at the same time.

Appendix 5A: Technical Services Guidelines

Introduction

The basic objective of regulation is to ensure that utilities distribute safe, reliable, and sufficient drinking water and appropriate sewerage services at affordable prices. The Government should set out the overall service quality objectives for the entire country for the water sector. These objectives are then translated into 5-year business plans, service standards, and performance targets to be implemented by the utilities and regulated or monitored by the Regulator.

Service Quality Standards

Water Supply (New Connections)

New water supply connections shall be provided, whenever practical, to any individual or entity that requests a connection and whose property lies within 25 meters (m) of a water supply distribution main, and any household or business establishment located within 25 m of a sewerage collection pipe unless there are significant and demonstrable difficulties. The utilities are entitled to charge an amount, approved by the Regulator, based on the average cost of installing the connection (labor and materials). Each water connection shall be provided a meter at no cost to the customer.

For consumers whose property is more than 25 m from a distribution main or collection pipe, the utilities are entitled to charge the customer the actual reasonable incurred cost of installing the connection (materials and labor) plus the cost of extending the distribution main or collection pipe or other needed works to make the connection. All these costs must be communicated to the customer for consent prior to the installation.

Water connections must be completed within _____ days from the connection payment date for properties within 25 m. Sewerage connections must be completed within ____ weeks from date of payment.

A schedule of reconnection charges must be submitted to the Regulator for approval.

Water Supply

Service Coverage

The 5-year business plans of the utilities will indicate the service coverage targets for each year. The utilities must meet (or exceed) the water supply coverage targets set out in their plans. Targets are to be expressed as a percentage of the population given water services to the total population of the area. The utilities shall make sufficient connections (net of any disconnections) to meet the coverage target percentage of the population in the designated towns or regions. Coverage targets are to apply as of the end of the designated year.

The utilities shall provide data and supporting evidence to the Regulator that demonstrate compliance with such coverage targets, along with the method by which such compliance was calculated. The Regulator shall, in consultation with the utilities, set out a methodology on estimating the number of people served by each category of connection in order to determine the population served. Such a methodology may be subject to review every 5 years or as the need arises.

Continuity of Supply

The Regulator and the utilities shall set out a timetable to ensure the availability of an uninterrupted (24-hour) supply of water to all connected customers in their service area, subject to interruptions resulting from the temporary failure of some items of their facilities or required for the repair or construction of their facilities where such repairs or construction cannot be performed without interruption to the supply of water. In all cases, the utilities shall maintain at least 8 hours of water supply.

Water Pressure

The Regulator shall ensure that the utilities shall supply water at a level of positive pressure sufficient to secure the system against the ingress of untreated water or other contaminants. Such pressure shall be at a minimum of ____ for all areas connected by new conveyance pipelines and for all service area pipelines within 10 years from adoption of these guidelines. Water pressures shall be determined by measuring service pressure at the extreme of the system on the customer's side of the water meter.

Nonrevenue Water

The Regulator shall ensure that the utilities endeavor to reduce nonrevenue water (NRW) to the lowest possible proportion of water produced. In this respect, the utilities shall come

up with a periodic 5-year timetable and goals for NRW reduction, which shall be monitored by the Regulator.

Provision of Water Other than Through Mains

The utilities shall make supply of water available to customers other than through a water main in circumstances where the supplies through a water main have been or will be interrupted for more than 24 hours or supplies through a water main have been or will be subject to contamination. The charges for these services shall not exceed the approved rates for piped water supplies. In cases where no connection to a water main exists, the utilities may make a supply of water available to its customers at a rate equal to the costs reasonably and efficiently incurred by it in supplying such water.

Obligation to Supply Water for Public Purposes

The utilities shall make available an adequate supply of water for firefighting and other public purposes as may be reasonably requested by government units within its service area. The utilities shall not assess a charge for water used for firefighting purposes but may charge for all other water use for public purposes.

Sewerage

Service Coverage

The utilities shall offer to supply sewerage services for either domestic sewage or industrial effluents compatible with their existing treatment facilities to all customers connected to a utility's water system. The utilities shall endeavor to meet the coverage target percentages set out by the Government or in accordance with their own plans or goals.

Obligations to Make Connections to a Public Sewer

Upon request from an owner or occupant of premises located in a utility's service area for connection to a public sewer, the utility shall make such a connection as soon as reasonably practicable.

Setting Drinking Water Quality Standards

Drinking Water Quality

The Utilities shall ensure at all times that water supplied to customers complies with the minimum requirements for drinking water set by the Government. The Regulator is responsible

for monitoring and enforcing drinking water quality from systems operated by the utilities. However, the Regulator, after consultation with any appropriate government authority, shall have the discretion to consent to a phase-in compliance with these standards over a 10-year period from adoption of the Regulatory guidelines. The Regulator shall ensure that the utilities observe any requirements regarding sampling procedures, record keeping, or reporting as may be required by applicable laws or regulations.

Standards for Drinking Water Quality Standards

The utilities must ensure that the drinking water at the connection point of the customers' property meets the following standards or applicable standards as may be set or revised by the Regulator or appropriate health ministry or office.

Granting Exemptions

While the utilities must meet the government-prescribed standards for drinking water, the Regulator may grant a time-bound exemption from the standard for certain parameters provided that the utilities can justify that the costs of meeting the standard outweigh the health risks to the customers. Exemptions should not be granted for parameters that are the most critical to protect human health. The utilities are expected to request the exemption in a timely manner to ensure that it is granted before the end of the initial grace period.

- a. An initial grace period of ___ years will be granted (except for the most critical health-related standards) from the adoption of the Regulatory guidelines, during which time the utilities will establish their baseline water quality and compliance level to the standards.
- b. Prior to the expiry of the grace period, the utilities must already meet the standards or request, as necessary, an exemption from those specific standards that it cannot meet. The request must be accompanied by documentation that demonstrates that the utilities' investment plan includes measures to phase-in compliance with the standards and a detailed statement on the health impacts of phasing in compliance with a specific interim water quality standard specified.
- c. The Regulator must review the request and make a determination on its merits (health, costs, and tariff implications). The Regulator may carry out its own study to evaluate the request.
- d. If the Regulator is satisfied that human health will not be jeopardized, it will grant the exemption for a set period and agree on a phase-in schedule with the utilities.

- e. If further study is required, the Regulator may grant the utilities a provisional exemption pending the results of the investigation.
- f. If the exemption is not granted, the Regulator shall notify the utilities with instructions to initiate works within 30 days and shall set a specific time period after initiation of the works to ensure compliance with the standard.

Monitoring Water Quality

The utilities have the primary responsibility for monitoring water quality and reporting the results to the Regulator. The Regulator shall be informed by the utilities of the test dates and sites for bacteriological sampling in advance for possible joint sampling and analysis purposes. The Regulator will review the reports, verify the results when necessary, and take action to enforce the standards when necessary.

- a. The utilities should submit a water quality monitoring and testing program based on the sampling regime and methods specified by it or by the Regulator. The plan should include monitoring of raw water from each abstraction point, treated water in reservoirs, at various points along the distribution network, and at selected consumer connection points.
- b. The utilities will collect and analyze the samples taken in accordance with the monitoring program and submit a water quality report, duly signed, on a monthly basis to the Regulator.
- c. The Regulator shall review the reports for compliance with the standards (or the water quality target where an exemption has been granted). Results that indicate noncompliance will be subject to retesting or penalties.

Enforcing Water Quality Standards

Periodic Inspections

The Regulator, at its discretion, will retain the services of accredited laboratories to randomly check the quality of water being supplied by the utilities. The results of these independent tests will be compared with the standard, as well as with the reports submitted by the utilities. If there are material discrepancies, the utilities will be notified and joint sampling and testing will be conducted.

Response to Customer Complaints

If a customer submits a complaint about water quality, the Regulator will forward the complaint to the utilities for its appropriate action within a specified time period. If the noncompliance with standards persists beyond the given time period, any laboratory costs incurred by the Regulator will be charged to the utilities in addition to any penalties for noncompliance.

Penalties for Noncompliance

The penalties for noncompliance will vary according to the severity of the violation. The Regulator will impose penalties for the period of noncompliance as determined by the Regulator, to wit: _____.

Sanitation

The Regulator should ensure that the utilities offer septic and sanitation cleaning services in its service area and shall meet the coverage target percentages of the total population. A 5-year moving target shall be mutually agreed upon by the utilities and the Regulator.

Measuring Service Quality

Performance Indicators

Introduction

A key performance indicator (KPI) is a quantitative measure of a particular aspect of an undertaking or standard of service. The particular areas of undertaking are referred to as key result areas (KRAs). For every area of undertaking, various KPIs are used to measure specific areas.

Key Result Areas

The following KRAs, which are reflective of the efficiency and effectiveness of the utilities' operations, will be monitored by the Regulator:

Financial Performance:

1. **Collection Effort:** The effectiveness of the collection system to ensure high collection efficiency ratios and manageable levels of accounts receivable.

2. **Cost Control:** The efficiency in carrying out activities at the least possible cost to ensure that controllable expenses are kept to a minimum and that expenses are prudent and efficient.

3. **Profitability, Liquidity, and Sustainability:** The overall financial performance of the utilities in terms of how well they are able to 1) generate sufficient revenues to cover costs fully, 2) meet short-term and long-term debt obligations, and 3) raise capital from internal sources.

Operational Performance: Indicates the ability of the utilities to deliver targeted levels of service and efficiency of technical operations.

Customer Service: This area covers the interface between the utilities and their customers, and how well the utilities have handled customer concerns.

Key Performance Indicators (KPIs)

Financial Performance

Collection Performance

- a. **Collection Efficiency:** Indicates the collection performance of the utilities during the current year and is determined by comparing the total collections of current year's accounts as against total billings for the year.

- b. **Collection Period:** Shows the average period required to collect accounts expressed in month-equivalents of accounts receivables.

Cost Control

- c. **Operating Ratio:** Ratio of operating expenses to operating revenues. It shows the extent to which costs are covered by operating revenues and the effort to control costs at an economic level:
 - operating expenses—operation and maintenance expenses, excluding depreciation and interest expense; and
 - operating revenue—revenues from water sales and from other operations.

Liquidity

- d. **Current Ratio:** Indicator of the utilities' ability to pay short-term obligations, calculated by dividing current assets by current liabilities.

Profitability

- e. **Return on Assets:** This ratio measures the percentage of profits earned against assets in operations.

Operational Performance

- a. **Nonrevenue Water:** The difference between production and billed volume. It includes not only real losses (leakages) and apparent losses (meter inaccuracies and illegal consumption) but also unbilled authorized consumption.
- b. **Staff per Thousand Connections:** Refers to the efficiency of staff utilization.

Information and Reporting Requirements

General Requirements to Provide Information

The utilities shall be required to provide, on a periodic basis, all the information that the Regulator may reasonably require in order to monitor the utilities' performance. Such information (including subsequent revisions) shall include, but not be limited to, service performance, financial information, and water quality.

Service Performance Information

The Regulator shall require the submission, in not more than 30 days following the end of the required period, of a report of the utilities' performance with respect to the provision of water and sewerage services, which shall contain the information specified in Schedule____ hereof.

Financial Information

The Regulator shall require the submission, not later than 60 days following the end of the calendar year, of a report on the utilities' financial performance. Such report shall include the information specified in Schedule_____ hereof. Records shall be audited by the _____. In addition, the Regulator may, upon giving not less than 15 days prior written notice to the utilities, require that the utilities' books and records relating to their operations be audited on an interim basis by the Regulator.

Annex 5B:

Guidelines for Regulation of Piped and Non-Piped Small-Scale Water Providers in the Philippines

Definitions of Terms

- a. **CDA:** Cooperative Development Authority
- b. **CPC:** Certificate of Public Convenience issued by the NWRB authorizing private water utilities to establish, operate, and maintain water supply systems, provide water supply service, and charge rates thereof.
- c. **Nonpiped Water Providers:** water service providers delivering water service through nonpiped systems, such as but not limited to vendors, peddlers, kiosks, and common taps, except filling and bottled water stations.
- d. **NWRB:** National Water Resources Board, Philippines.
- e. **Piped SSWP:** private businesses, nongovernment organizations, community-based organizations, and cooperatives that provide water supply service to unserved communities through communal systems, individual household connections, or combinations thereof in partnership with main utilities.
- f. **PNSDW:** Philippine National Standards for Drinking Water.
- g. **PPP:** public–private partnership projects undertaken by main utilities with private businesses, nongovernment organizations, villages, and cooperatives to provide water service to poor communities.
- h. **SSWP:** small-scale water provider.

Coverage

The following guidelines shall apply to piped and nonpiped SSWPs as defined in the preceding section.

Registration

All piped and nonpiped SSWPs must register their operation and pay the prescribed annual registration fee of Philippine peso (P) ____.

Requirements for Registration of Piped SSWP

- a. Piped SSWPs shall submit the following documents with NWRB's prescribed registration form to the NWRB:
 - i. agreement with the main utility;
 - ii. agreement with the appropriate local government unit (LGU)/cooperative;
 - iii. list of water committee members, duly certified;
 - iv. proof that consultation and agreements regarding the proposed water rates have been made with intended beneficiaries of a PPP project; and
 - v. city/municipal business permit.
- b. The agreement with the main utility shall contain provisions relating to
 - i. supply of bulk water with bulk supply rates duly approved by the appropriate regulatory agency, and
 - ii. takeover or integration of water system by the main utility within a specified period.
- c. The agreement with the LGU/cooperative shall contain provisions relating to
 - i. water supply rates agreed on with the community,
 - ii. creation and functions of LGU/cooperative water committee, and
 - iii. complaint/dispute resolution procedures through the LGU/cooperative water committee.
- d. The LGU/cooperative water committee, among others, shall perform the following functions:
 - i. monitor water quality,
 - ii. log and monitor action on complaints, and
 - iii. settle customer complaints/disputes.
- e. Cooperative development authority registration, if applicable.

Requirements for Registration of Nonpiped Water Providers

Nonpiped water providers shall submit the following documents with NWRB's prescribed registration form:

- a. city/municipal business permit,
- b. Certificate of registration from CDA (if applicable), and
- c. water permit (if applicable).

Water Quality Regulation

- a. All piped and nonpiped water providers shall ensure that water supplied to customers complies with the PNSDW, as prescribed by the Department of Health.
- b. All piped and nonpiped water providers shall conduct water quality analysis in accordance with the PNSDW, and submit the results to the NWRB, as follows:
 - i. bacteriological tests – monthly,
 - ii. physical and chemical tests¹ – annually.
- c. Results of the latest water quality analysis shall be posted at the SSWP’s main office, barangay hall, cooperative office, and other conspicuous places within the SSWP’s area of operation.
- d. A penalty of PhP___ may be imposed for failure to submit the required water quality test results on or before the prescribed deadline.

Technical Regulation

Piped and nonpiped water providers shall submit an annual report of operation using NWRB’s prescribed form to the NWRB every ____ of the year.

A penalty of ____ may be imposed for failure to submit annual reports of operation on or before the prescribed deadline in accordance with NWRB’s existing regulations.

Customer Service Regulation

- a. Piped SSWPs shall exert efforts to set relevant standards and targets in consultation with the utility/LGU/cooperative partner and customers, such as but not limited to the following:
 - i. service coverage,
 - ii. nonrevenue water,
 - iii. collection performance,
 - iv. number of hours of service,
 - v. water pressure, and
 - vi. response to customer complaints.
- b. These standards and targets shall be submitted to the NWRB and shall form part of the obligations and responsibilities of the piped SSWPs.

¹ Not required if the source is through a bulk meter supply from the main utility.

Barangay/Cooperative Water Committee

- a. Piped SSWPs shall assist their partner LGU/cooperative to form and organize barangay/cooperative water committees whose function shall include
 - i. monitoring water quality,
 - ii. information and communication campaign,
 - iii. recording and monitoring actions taken on customer complaints, and
 - iv. mediation of customer complaints/disputes.
- b. Only unresolved customer complaints/disputes as certified by the barangay/cooperative chair may be brought to the NWRB for resolution.
- c. The NWRB may charge a filing fee of P___ for every complaint/dispute brought before it for resolution.
- d. All costs incurred by the NWRB to resolve a complaint/dispute (such as but not limited to costs relating to the conduct of hearings, investigations, and inspections) shall be charged against the losing party.

Requirement to Secure CPC

An SSWP shall have a 3-year grace period wherein the requirement to obtain a CPC may be waived. After the grace period, the NWRB may require piped SSWPs to secure a CPC and comply with existing regulations governing CPC grantees, when in NWRB's judgment the concerned SSWP should cease to be classified as such, by reason of the nature of its operation, size, and amount of investment.

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In the Pipeline Water for the Poor Investing in Small Piped Water Network

The Small Piped Water Network (SPWN) Tool Kit was conceived and developed as a result of the lessons and experiences of the Asian Development Bank regional technical assistance (RETA) 6265: Implementing Pilot Projects for Small Piped Water Networks, as well as the experiences of professionals and development agencies implementing similar projects. The tool kit is intended to be used as a guide for governments, development agencies, water utilities, and civil society in designing or implementing projects using the SPWN concept for urban poor or rural communities without access to piped water systems.

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Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org
ISBN 978-971-561-747-5
Publication Stock No. BBK189308

ISBN 978-971-561-747-5



Printed in the Philippines