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Management Models for Small Towns Water Supply

Lessons learned from case studies
in the Philippines

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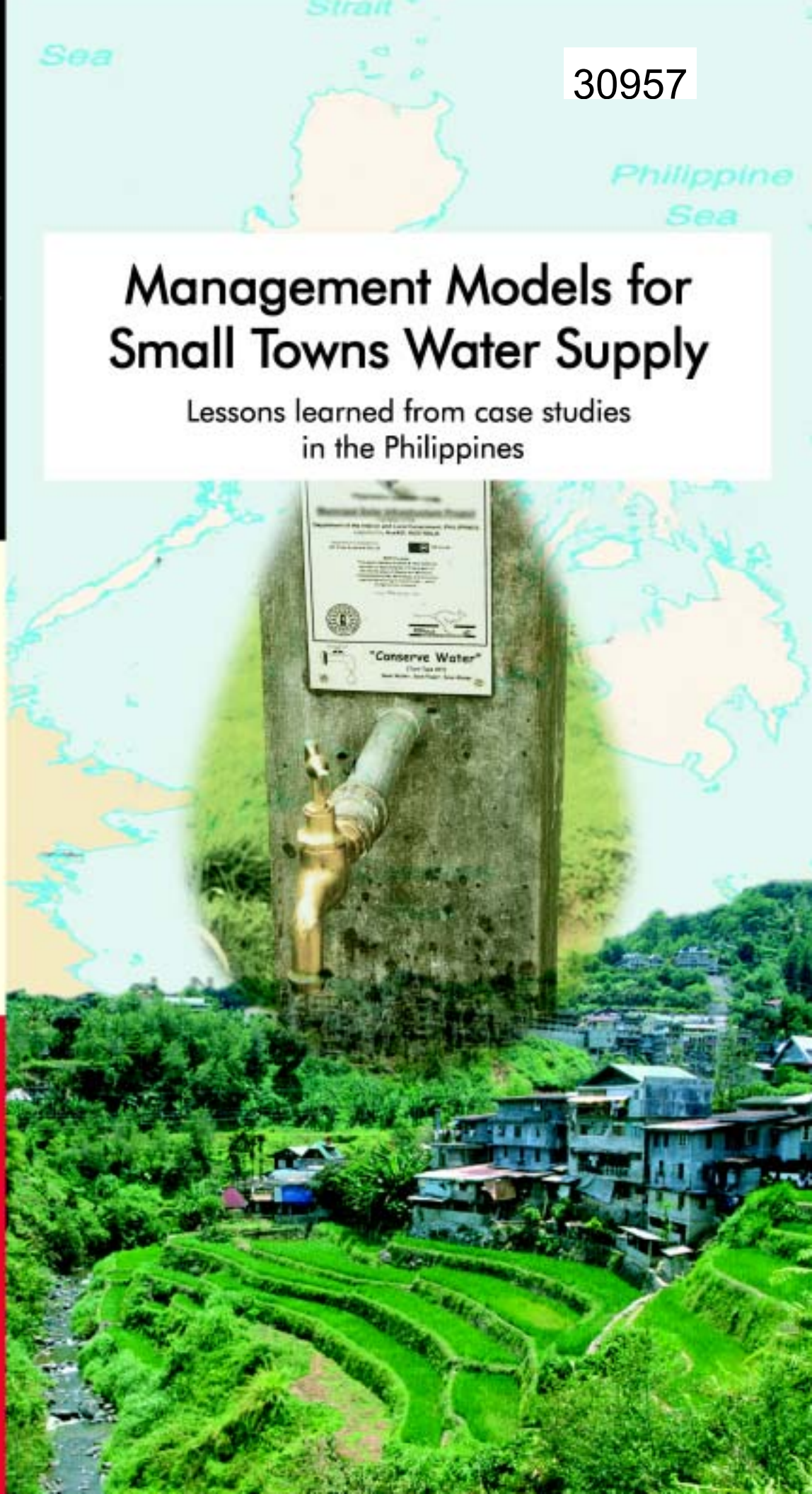


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and Local Government



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International Development

Field Note
June 2003



About the cover:

Nearly 60 per cent of Filipinos now live in urban areas, mostly in small towns with less than 100,000 people. A number of Philippine small towns have access to piped water supply services, either connected to household taps or via a series of public standpipes.

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World Bank Water and Sanitation Program
East Asia and the Pacific

in partnership with The Government of the Philippines
and The Government of Australia

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Summary

Small towns water supply is a neglected 'market' globally, and the Philippines is no exception. The key issue is that water supply systems in small towns are typically too complex to be well managed by community groups, but too small to be financially viable for professional water utilities. Furthermore, most water supply funding and assistance goes to definitively rural or urban cases, leaving small towns dependent on meager local government budgets.

There is some debate over what defines a 'small' town, as there are marked differences in the pattern of urban development from country to country, and region to region. In March 2000, a global e-conference on small towns water supply agreed upon the following definition:

"Small towns are settlements that are sufficiently large and dense to benefit from the economies of scale offered by piped water supply systems, but too small and dispersed to be efficiently managed by a conventional urban water utility. They require formal management arrangements, a legal basis for ownership and management, and the ability to expand services to meet the growing demand for water. Small towns usually have

populations between 5,000 and 50,000 inhabitants, but can be larger or smaller"

In the Philippines today, nearly 60% of the population live in urban areas, up from 40% only twenty years ago. Manila is a huge city, even in global terms, but much of this high and rising urban population is now found in smaller towns. According to the 2000 Census, there are 1,600 cities and towns in the Philippines¹, and 95% of these have populations below 100,000.

These figures illustrate the growing significance of the small towns sub-sector in the Philippines. When considered in tandem with the management challenges associated with small towns water supply, it becomes apparent that this is an area of some importance to the water supply and sanitation sector. Yet, little is known about the performance or relative advantages of the diverse models that are currently being used to manage small town water supply systems.

This field note presents the findings from a recent study by the Water Supply and Sanitation Performance Enhancement Project (see Box), which used case studies of fourteen small town water supply systems in the Philippines to

¹ Excluding the National Capital Region (Manila and the contiguous cities and towns around it)

examine 'factors of success' for different management models. The key lesson from the case studies was that water supply systems using community-based management models (e.g. Water Cooperatives and RWSAs¹) are the most consistently successful² in small towns. Water Cooperatives and RWSAs are locally-embedded institutions that prosper in the highly politicized small towns of the Philippines, while strong community involvement preserves their autonomy (political and financial) and ensures transparency and accountability.

The successful community-based management bodies are more sophisticated than typical community management models. A key factor is the professional support they receive, which allows them to provide cost-efficient and well-planned services, while retaining their local advantages and demand-responsiveness. Nearby Water Districts³, which manage their own large urban water supply systems, provide a ready source of technical assistance, and have enabled community-based management bodies to introduce commercial accounting systems, domestic water meters, and well-organized billing and collection systems.

As small towns grow and their water supply systems become more complex, professional water utility management skills become more important. For this reason, it has been argued that community-based management models are not suitable for small towns water supply. However, the lessons learned from this study suggest that professional support helps community-based management bodies to evolve with their systems, and allows an incremental transition from community-based to commercial water supply management. Encouragement and assistance in contracting out commercially viable functions (e.g. operation and maintenance, billing and collection, and financial audits) would assist community-based management bodies to further improve performance whilst retaining the advantages of user ownership and control.



¹ Rural Water Supply Associations (RWSAs)
² "Successful performance" is defined as water supply services that are sustainable (technically, socially, financially, institutionally, & environmentally) and are effectively used by the community
³ Water Districts are semi-autonomous water utilities set up by local government (legally defined as government owned and controlled corporations)

The Water Supply and Sanitation Performance Enhancement Project (WPEP)

WPEP is an action research project in the Philippines, which is jointly funded by AusAID (the Australian Government's aid program), the Water and Sanitation Program of the World Bank and the Government of the Philippines (GOP). The executing agency for the GOP is the Water Supply and Sanitation Program Management Office of the Department of Interior and Local Government (WSSPMO-DILG), with support from the Water and Sanitation Program – East Asia & Pacific (WSP-EAP). The goal of the project is “to enhance the access of the under-served rural and urban poor to adequate water and sanitation services on a sustainable basis.”

The WPEP action research agenda is demand driven through consultation with a broad range of water supply and sanitation sector practitioners in the Philippines. At the outset, WPEP funded six background studies, which provided the basis for the learning agenda. Following consultation on these studies, WPEP commissioned local consultants to undertake four field-based studies on the following topics:

- Small Towns Water and Supply Management Models (STWSMM);
- Urban Sewerage and Sanitation: What has worked and what has not (USS);
- Small Scale Independent Providers (SSIP);
- Rural Water: Models for Sustainable Development and Sector Financing (RWSFin)

This field note is one of a series of field notes summarizing the results of this research program.



The Philippine small towns are unusually dynamic in nature – population grows rapidly and economic activities are ever increasing. Water supply systems in small towns need to be able to cope with this changing environment.

Background

The Philippines consists of a chain of over 7,000 islands, dominated by the large island of Luzon in the north, and by Mindanao in the south. The islands are surprisingly densely populated, with the majority of the 76 million inhabitants now living in urban areas. However, economic development has not kept pace with the rising urbanization, and per capita incomes lag behind those of its neighbors (see comparative data in table). Development potential in the Philippines rests largely on the abundant natural resources and well-educated workforce, with major economic challenges coming from rapid population growth, high levels of poverty and inequality, low productivity and intensified global competition.

The Asian financial crisis, triggered in mid-1997, has further hindered the Philippine economy, leading to a loss of foreign exchange reserves, a higher debt burden and falling share prices. There have been signs of recovery, with GDP growth increasing from 0.1% in 1998 to 3.0% in 2000, but the Philippine Peso continues to lose value¹, and both oil prices and interest rates have risen sharply. These economic challenges have been heightened by serious political and security problems. Charges of corruption and inefficiency have affected many agencies, delaying project implementation and discouraging investment. However, a new administration took office in January 2001, and it has initiated a gradual economic recovery, leading to improved stability and confidence².

Comparative regional data

Country	Population (millions)	Urban population	Pop. density (per sq.km)	GNP per capita (US\$)	Female literacy ¹	Access to WS ²
The Philippines	76	59%	253	\$ 1,040	95%	91%
Thailand	61	22%	119	\$ 2,000	93%	94%
Malaysia	23	57%	71	\$ 3,380	82%	100%
<i>East Asia & Pacific</i>	<i>1,855</i>	<i>35%</i>	<i>116</i>	<i>\$ 1,060</i>	<i>78%</i>	<i>89%</i>

Source: World Development Report 2001/02

¹ Percent of women aged 15 and above

² Percent of urban population with access to improved water sources (1996)

¹ The official exchange rate has fallen from P40 = US\$1 in early 2000, to P53 = US\$1 in early 2003

² ADB, 2001



In the 70s MWSS become responsible for Metro Manila and contiguous areas, whilst all other systems were handed over to local governments that rarely had adequate capacity and funds to manage them.

Urban water supply in the Philippines

After independence was won from the United States in 1946, most provincial and municipal water supply systems in the Philippines were government-owned, and were operated by local authorities with technical assistance from the Bureau of Public Works (BPW). Control of urban water supply reverted to the central government between 1955 - 71, under the auspices of the National Waterworks and Sewerage Authority (NAWASA), but this centralized system favored Metro Manila and was not responsive to the needs of more distant municipalities.

Consequently, the provision of urban water supply services was divided in the early 1970s. The newly-created Metropolitan Waterworks and Sewerage System (MWSS) was given responsibility for the services in Metro Manila and its contiguous urban areas, whilst management of all other provincial and municipal water supply systems was passed back to local government. Most of these water supply systems were in poor condition, and Local Government Units¹ (LGUs) rarely had the capacity, experience or funds needed to manage or improve the systems.

Recognition of the seriousness of these problems led to the 1973 Provincial Water Utilities Act, which introduced a new management model for urban water supply: *the Water District*. Under the new act, LGUs had the option to form 'Water Districts' to run their urban water supply and sewerage systems. Water Districts were to be 'quasi-public corporations'² that operate independently of the LGU, with promotion, support and financing from the specially created Local Water Utilities Administration (LWUA).

In 1980, the urban water supply sector was further sub-divided by the creation of the Rural Waterworks Development Corporation (RWDC). Larger towns (populations greater than 20,000) were to be served by Water Districts, assisted by LWUA. The RWDC was to cater for water supply in rural centers and small towns (populations less than 20,000), and was authorized to form Rural Waterworks Associations (later renamed Rural Water Supply Associations) to manage these water supply systems. However, this arrangement was short-lived. The RWDC was abolished in 1987, and all its functions and responsibilities have since been transferred to LWUA.

¹ The term Local Government Unit refers to any level of local government, from Provincial Government down to Barangay

² Amended to 'government-owned & controlled corporations' by a 1992 Supreme Court decision

Decentralization followed. The implementation of the 1991 Local Government Code (LGC) triggered a process of political and administrative devolution that brought major changes to the governance structure of the Philippines. The LGC transferred powers and responsibilities from the central government to Local Government Units (LGUs), including primary responsibility for the development of urban water supply and sanitation services. This process was accompanied by large increases in LGU incomes, but there has been little impact on the water sector to date.

The government has also been promoting private sector participation in the water sector, in order to provide additional finance and to enhance service delivery. Metro Manila undertook a high profile privatization of its water supply in 1997, and there are four other examples of privately managed urban water supply systems in the Philippines¹. However, these examples are all in major cities and towns. Recent projects encouraging private sector participation, such as the World Bank-funded LGU-UWSP², have struggled to attract private service providers to small towns water supply, and have found it difficult to persuade LGUs to relinquish control of their water services.

Today, Water District and LGU-managed systems provide piped water supply services to about 60% of the towns in the Philippines, including many of the larger towns. Most of the remaining small towns, and the urban areas excluded from Water District or LGU systems, are either supplied by small community-based organizations, such as Rural Water Supply Associations (RWSAs) and Water Cooperatives, or rely on isolated water points (e.g. wells and handpumps).

In summary, there are five main management models for small towns water supply in the Philippines:

- LGU = Local Government Unit (500 urban systems)
- WD = Water District (430 urban systems)
- RWSA = Rural Water Supply Associations (500 systems)
- COOP = Water Cooperative (200+ urban systems)
- PS = Private Sector (4 urban systems)

There is also a hybrid management model: the 'cluster model', which refers to an LGU or Water District that provides water supply services to groups, or clusters, of small towns (through one or more water supply systems).

¹ Three fully private systems (General Trias, Balibago and Calapan) and one joint venture system (Subic Water & Sewerage Company - a joint venture between the Subic Bay Metropolitan Authority, Olongapo Water District, and a private company)

² Local Government Unit – Urban Water Supply & Sanitation Project (LGU-UWSP) aims to promote demand-responsive approaches to the provision of urban water supply and sanitation services and to cost recovery, and utility operation following commercial principles.

Case Studies of Small Towns Water Supply

In 2003, Phase II of the Water Supply & Sanitation Performance Enhancement Project (WPEP) completed a study of management models for small towns water supply in the Philippines¹. This study combined participatory community assessments (made using the MPA²) with specialist assessments (technical, institutional, environmental, financial and social) to create case studies of water supply systems in fourteen small towns. The main objectives of the WPEP study were to:

- assess the performance of the different management models
- analyze the parameters that underlie successful or unsuccessful performance, and
- provide recommendations regarding the continued use of the management models in the provision of sustainable water supply services in the Philippines.



The Methodology of Participatory Assessment takes into account the views of women and men about the sustainability and use of water services in their communities.

¹ Robinson et al (2003) 'Management Models for Small Towns Water Supply: Lessons Learned from Case Studies in the Philippines', Manila: WPEP Final Report

² The Methodology for Participatory Assessments (MPA) provides indicators and tools that allow the assessors (including the community themselves) to measure the sustainability and use of community water services, and the process whereby they were established

Case study details

Name	Mgmt. model	Urban population	Population served	Staff/conn	Min. tariff/mo. P/m ³	Profit margin (2001)
Systems in towns with population < 50,000						
Aglipay	LGU	21,800	250 (1%)	40	1.5	-194%
Hagonoy	WD	43,900	910 (2%)	21	11.4	-2%
Numancia	CLUS-WD	59,800*	13,500 (22%)	12	18.0	-10%
Barcelona	COOP	19,000	6,800 (36%)	8	3.0	-1%
Guimbal	RWSA	27,700	4,300 (16%)	10	6.0	+13%
Systems in towns with population 50,000 – 100,000						
Barili	LGU	57,700	3,200 (6%)	27	3.5	-16%
Nueva Vizcaya	CLUS-LGU	100,600*	10,300 (10%)	10	2.3	-38%
Manolo Fortich	LGU	74,300	24,400 (33%)	8	6.5	+18%
Ubay	COOP	59,800	6,800 (11%)	14	5.0	+6%
Subic	WD	63,000	29,400 (47%)	6	8.6	+18%
Systems in towns with population > 100,000						
Darasa (Tanauan City)	RWSA	117,500	7,030 (6%)	7	8.2	-3%
Balibago (Angeles City)	PS	264,000	48,600 (18%)	8	13.8	-4%
M Kidapawan	CLUS-WD	263,300*	60,600 (23%)	7	15.7	+18%
General Trias	PS	107,700	51,000 (47%)	3	10.0	+25%

Key:

* = combined population of more than one town

Staff/conn = average number of staff per 1,000 house connections

House connections = total number of house water connections supplied by system

Min. tariff = minimum tariff (Pesos per month)

The case studies were carefully selected to ensure that well-established examples of the six different management models were included. Given the relatively small sample size, the study focused on overtly successful or unsuccessful cases, in order to search out and highlight factors of success or key constraints.

The coverage provided by the case study water supply systems is generally low, with most of them providing services in only certain parts of their host town. In the towns with smaller populations, the presence of low-cost alternate water supplies (e.g. shallow wells and handpumps) appears to have lowered demand for house connections and prevented expansion, whereas the systems in larger towns are often

competing against other water supply systems. For instance, both the Darasa and the Balibago systems supply relatively small sections of sizeable cities, whose main service providers are large Water Districts.

This low coverage greatly limits the potential for economies of scale, particularly within small systems. Despite involving four different management models, each of the five case study systems that serves more than 20,000 people utilizes less than ten staff/1,000 connections. In contrast, only two of the nine smaller systems are as efficient. This illustrates the difficulties inherent in managing small town water supply systems, whatever the management model.



Management Model Performance

The following sections outline the key features of the six management models for small towns water supply, and summarize the performance assessments resulting from the case studies. However, as the case studies include both successful and unsuccessful cases, average management model performance (as

shown in the table below) is not representative of typical management model performance. Therefore, the management model assessments focus primarily on features that are common, or replicable, or capable of reform, and attempt to identify where unusual conditions may have influenced performance.

Case studies by management model

Management model	Average nr. connection served	Average nr. staff per 1,000 conn.	Minimum tariff (P/m ³)	Average salary (P/mth)	Average profit margin
Private sector (2)	9,270	5.5	8.2–10.0	15,180	+10%
Cluster WD (2)	6,900	9.5	15.7–18.0	9,940	+ 4%
Water District (2)	3,360	13.5	8.6–11.4	8,180	+ 8%
Cooperative (2)	1,290	10.5	3.0–5.0	6,730	+ 3%
RWSA (2)	950	7.9	6.0–8.2	9,130	+ 5%
LGU + Cluster LGU (4)	1,720	21.3	1.5–6.5	5,880	- 57%

Key:

staff per 1,000 conn. = average number of staff per 1,000 house connections

1. Local Government Unit

The LGU model defined in the WPEP study involves direct management of an urban water supply system by any level of local government. Therefore, this model covers a wide range of institutional arrangements, from management of a complex multi-town system by the Provincial Government, to small simple systems run by the Barangay Council¹.

The 1991 Local Government Code transferred financial resources, responsibilities, personnel and assets from the national government to local governments. This led to a significant increase in LGU incomes, with the Internal Revenue Allotment (IRA) provided by

¹ Barangay is the smallest administrative unit in the Philippines (the smallest case study town, population 19,000, comprised 25 barangays)

Typical LGU Management

The towns of Surigao del Norte Province (Mindanao) are typical of the LGU management model: the Municipal Planning and Development Coordinator (MPDC) handles operations; the Municipal Engineer's Office (MEO) manage construction & repairs; and the Municipal Treasurer's Office assists with billing & collection. Some towns hire meter readers, plumbers and laborers on a regular basis, while other towns hire personnel only when needed, or when they have funds.

Hinigaran Water System (Negros Occidental, Visayas) is owned and managed by the municipality, but was formerly a Water District. The water system was returned to the LGU because the system was not successful (its water source was too distant). The LGU has since programmed P3.5 million (US\$ 70,000) for expansion and rehabilitation of the system, and the Provincial Government is assisting with development by paying for new distribution pipes. The barangay is assisting by providing labor. The system is operated by the Mayor through a City Public Utility Officer, assisted by 12 staff and an Internal Auditor.

Adapted from Lazaro, 2000

central government rising from P10 billion in 1991 to more than P90 billion (US\$ 2.25 billion) in 1999. LGUs were also granted increased powers to raise local revenues from property and business taxes.

Most LGUs (both provincial and municipal) have been slow to adjust to this new order. A few progressive LGUs are beginning to plan and implement their own development programs, enabling them to attract funds from both private investors and external funding agencies, but decentralization remains constrained by inadequate local funding capacity, by shortages of technical and managerial expertise, and by the highly politicized environment at the local level.

Direct management of small town water supply systems by LGUs does not appear to work well. The central problem is that the budget of an LGU-managed water supply system bears no relation to its water revenues. LGUs are provided with central funding through their internal revenue allocation (IRA), but the LGU has little control over the size of its annual budget, and has to allocate the funds between the competing needs and priorities of the locality. In theory, the funds spent on providing water supply services should be recouped from the water tariffs, but these revenues disappear into the central accounts of the LGU treasurer,

so have little impact on the operation and maintenance of the water supply. Furthermore, most LGU leaders are elected officials (e.g. Mayors) and prefer to subsidize the operation of the water supply system rather than lose votes by raising water tariffs. As a result, LGU water systems tend to have very low tariffs, and are constantly short of funds.

Within the LGUs, salaries are low and most personnel have duties in addition to their water supply roles, hence there is little incentive or capacity for efficient performance. LGUs also lack technical expertise. Private contractors need to be employed for all but the simplest operation and maintenance (O&M) tasks, and LGUs can rarely afford to maintain, rehabilitate or expand their water supply systems. Consequently, systems deteriorate quickly, reliability is low, and users are reluctant to pay for their water services.

In small towns, LGUs are often both the 'water supply provider of last resort' and the local regulator. There is a strong case for strengthening the water supply capacity of LGUs, but the findings of the WPEP study indicate that there are few benefits to direct LGU management, and suggest instead that the LGU role should be confined to creating an enabling environment for other service providers to operate within.



Water districts secure capital financing from LWUA, but these loans are expensive and conditions to pass all costs onto users have driven up water tariffs. Here, residents are having a swim at the water district reservoir – perhaps one of the few free ‘benefits’ for users?

2. Water District

The Water District model was designed to operate on commercial lines, with many of the same powers, rights and privileges given to private corporations. This changed in 1992, when the Supreme Court ruled that Water Districts were Government Owned and Controlled Corporations (GOCCs) and, therefore, subject to government regulations on employment, budget, management and audits.

Government control and regulation has reduced autonomy (political and financial), and has limited the scope for innovation, but Water Districts still perform well in the areas where the LGU model is weak. Most Water Districts have strong financial management, and significant technical capacity. However, tariffs are generally high, and water services to the poor are restricted by rules on ‘financial viability’.

Typical Water District Management

The General Manager of a Water District is appointed by the Board, and is given full control of operations, including the authority to appoint all Water District personnel. The General Manager of Subic Water District (Zambales Province, Luzon) has been in position for its entire 22-year life, as has one of the female directors. Water District Boards comprise five directors, who serve six-year terms with staggered starts. This ensures the capability to implement long-range policies, and prevents the LGU leader (usually a Mayor or Governor) from appointing more than 2- 3 directors during their three-year term.

Water Districts have common procedures and commercial systems for billing & collection of tariffs, accounts, budgeting, preparation of financial statement, tariff setting, and all house connections have water meters. Water District tariffs must cover O&M costs, debt servicing requirements, and an additional allowance for capital expenditures and reserves. Tariffs are set following public hearings, approval by the Board, and LWUA review and confirmation.

Adapted from TEST, 2002

LWUA Loans to Water Districts

The Local Water Utilities Administration (LWUA) provides loans to Water Districts for 'financially viable' projects. LWUA is able to secure loans at concessionary rates (3-4%), which it then offers to Water Districts at higher interest rates (8-12.5%). In addition, LWUA charges 9% of the gross loan amount for carrying out feasibility and detailed design studies, plus another 4% for construction supervision. LWUA also passes on any currency adjustments due to fluctuation of the dollar-peso rate.

LWUA used to be allowed to extend assistance to Water Districts that were not commercially viable by supplying 50% of the funds required as a grant. However, this practice was stopped in 1998, when the National Economic & Development Authority (NEDA) ordered that LWUA support only projects deemed financially viable (i.e. able to recover all costs and pay back their loans).

Adapted from Lazaro, 2000

LWUA was the main source of capital for Water Districts (see Box on LWUA loans), but its funding has dried up and it is being reformed. LWUA loans have proved expensive, and the condition that all financing costs are passed on to water users appears to have reduced incentives for efficient design or for cost-effective implementation. When loans are badly spent, Water Districts are still forced to raise their tariffs, leading to a vicious circle: inadequate services and high tariffs result in lower consumption, which reduces revenues, making cost recovery difficult and, in many cases, requiring further tariff increases (see Box on high tariffs).

LWUA's 'financial viability' requirement was meant to improve cost recovery. In practice, this approach has made it hard for Water Districts to provide services to the poor. Water Districts, especially those with substantial debt and already high tariffs, tend to confine their service coverage to the wealthier 'urban barangays'¹. More borrowing would be needed to fund expansion beyond this service area, and Water Districts fear that low-income households will not be able to afford (or be willing to pay) their high tariffs.

High Tariffs in Water Districts

In 1987, Numancia Water District (Visayas) received approval for a LWUA loan to improve services. The water users were highly supportive of the project, and agreed to an initial tariff of P3.5/m³, rising to P5/m³ following project completion in 1993. Debt repayments required further tariff increases, and by 1997 the tariff had nearly doubled to P9/m³.

Unfortunately, Numancia Water District was unable to service its debt repayments, and in 1998 LWUA took over management of the water supply. Another public hearing was held to discuss further tariff hikes to raise funds for the payment of arrears and to enable the development of additional water sources. An immediate 36% tariff increase was approved, as were later increases of 20% in 2000 and 12% in early 2002. The tariff stood at P18/m³ by the end of 2001, but the management decided to defer the planned Jan 2002 increase (to P20/m³ = US\$ 0.40/m³) because this was likely to lead to more disconnections, thus further diminishing their revenue and cash flow¹.

Adapted from TEST, 2002

¹ The basic water tariff in the fourteen case studies averages P8.1/m³

¹ The barangays making up small towns in the Philippines are classified as either 'urban' or 'rural'

The difficulties in expanding services into low-income urban areas has led some Water Districts to relinquish their exclusive right to provide water supply services in their franchise area¹. In several of the case studies, the Water District has retained control of its existing service area while encouraging another service provider (RWSA, Water Cooperative or Private Sector) to develop separate water supply systems in the low-income areas. However, some Water Districts are strongly opposed to having other service providers within their domain, thus further restricting options for provision of services to the poor.

3. Rural Water Supply Association (RWSA)

Despite the title, RWSAs manage water supply systems in both rural and urban contexts. Outside the rural areas, RWSA systems are generally found in small towns, or serving well-defined areas within larger towns (e.g. those not served by Water Districts or LGUs). However, even large RWSAs provide water services to a maximum of about 2,500 households.

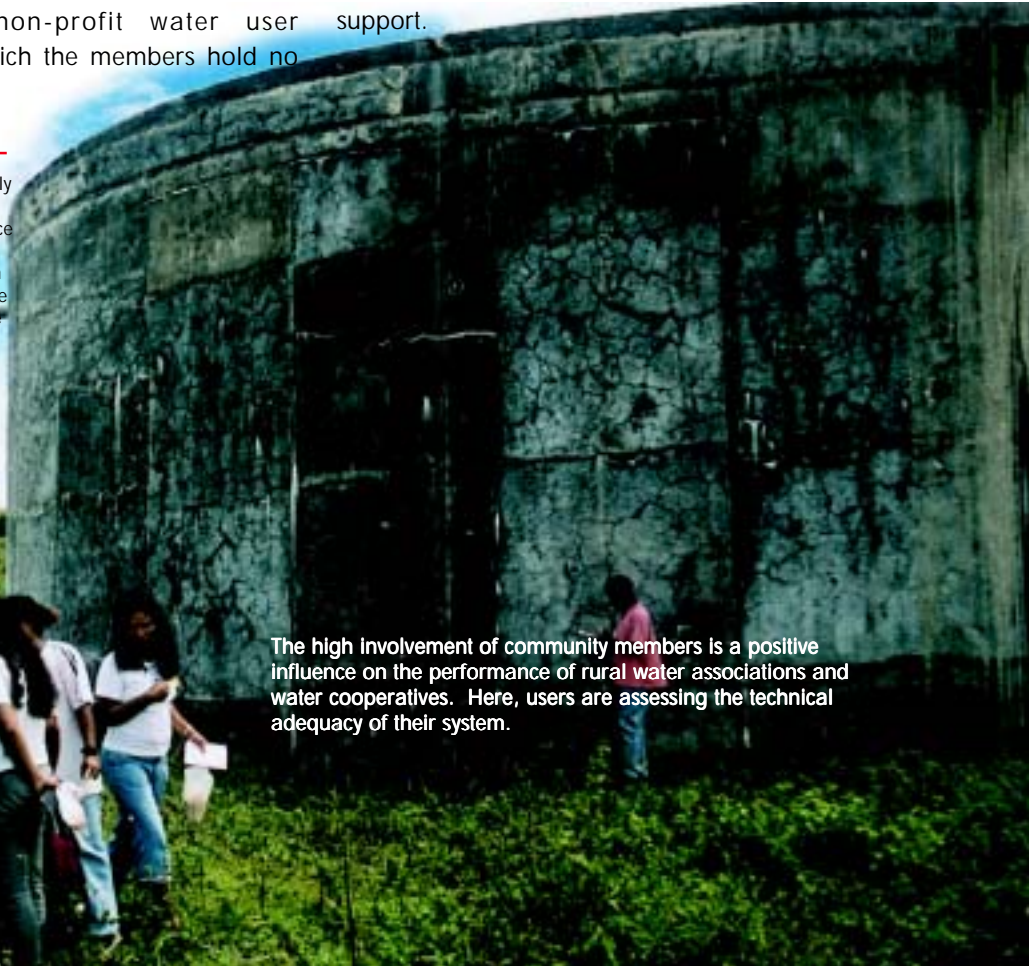
RWSAs are non-profit water user associations, in which the members hold no

equity. The board of directors is elected by the general assembly (comprising all of the association's members), and no elected government official (with the exception of Barangay officials) can be a director.

RWSAs were originally set up, supported and financed by a government body, the Rural Waterworks Development Corporation (RWDC). In 1987, the RWDC was dissolved and its functions and responsibilities were transferred to LWUA. Despite having inherited loan repayments from more than 450 RWSAs, the sums involved were small, and LWUA has shown little interest in either RWSA performance, or in the collection of its debts.

RWSAs retain many of their original government-established features and regulations, but are no longer monitored, and have few channels through which to obtain finance. Today, some 50% of the RWSAs registered with LWUA are no longer operational. The reasons for this high failure rate are not known, but probably relate to the government's supply-driven approach in establishing RWSAs, and the current lack of financial or institutional support.

¹ Water Districts usually have a Certificate of Public Convenience (or Certificate of Conformance) which grants them exclusive right of water service to a town (or cluster of towns)



The high involvement of community members is a positive influence on the performance of rural water associations and water cooperatives. Here, users are assessing the technical adequacy of their system.

Typical RWSA Management

Mabuhay Water Supply Association (MWSA) manages the water supply system of Barangay Mabuhay within the town of Sison (Pangasinan Province, Luzon). Five staff operate and maintain the system, and the MWSA treasurer collects the water charges (P10 per month for house connections and P5 per month for users of public standposts). Water is currently rationed, but the association is trying to raise funds to construct a reservoir that will increase supply.

The members of Darasa RWSA in Tanauan City (Batangas Province, Luzon) have a strong sense of ownership:

- one (non-official) member records the time in and out of the RWSA employees
- neighbors report cases of illegal connections
- General Assembly voted against handing over management to Tanauan Water District
- members have donated assets (wells and storage tanks) worth P3 million (US\$ 60,000)

Adapted from Lazaro, 2000 and TEST, 2002



The two RWSA case studies perform well, showing political and financial autonomy, as well as good relations with local government. High levels of community involvement promote transparency and accountability. Technical and financial performances are generally good, assisted by professional support from local Water Districts. This combination of local knowledge and external support (from LGUs and Water Districts) make RWSAs effective in small towns.

Both salaries and tariffs are higher than in the Water Cooperative case studies, perhaps as a legacy of their government influenced rules and regulations, and the close

relationship with local Water Districts. This makes RWSAs less cost-efficient, but has not diminished user satisfaction.

4. Water Cooperative

Water Cooperatives are community-based associations, governed by a board of directors elected by the general assembly. However, they differ from RWSAs in that members contribute equity and thus have a financial stake in the success of the Cooperative. Like RWSAs, Water Cooperatives tend to manage small, relatively simple water systems - the largest known example serves 2,500 households¹. Support and oversight are provided by the Cooperative

¹ Argao Cooperative, Visayas

Typical Water Cooperative Management

The San Pedro Multi-Purpose Cooperative in Santo Tomas (Batangas Province, Luzon) has six staff, headed by a woman. The Cooperative supplies water to 450 households, and holds regular meetings in which women actively participate. The basic tariff is P6/m³ (US\$0.12/m³) and collection efficiency is 70-80%. The water users know each other and feel a sense of ownership for the system, which helps get bills paid and makes disconnections rare. External financing is needed for major works as 88% of the revenue is spent on routine operation and maintenance. Private contractors are hired when repairs are needed, and spare parts and equipment are readily available.

Adapted from Lazaro, 2000

Development Authority (CDA), but it has no technical or financing capacity, so limits itself to more administrative roles (registration, training, monitoring and mediation).

Water Cooperatives are the most demand-responsive of the management models, in that they are difficult to form if the prospective members are not convinced that the water supply system will meet their needs. Water Cooperatives are autonomous, but often have good relations with LGUs and Water Districts, thereby improving their access to funding and to technical support. Enthusiastic community involvement, genuine interest in financial performance, and Water District assistance in financial management combine to help successful Water Cooperatives to keep costs down and tariffs low, making services more equitable (better provision of water supply to the poor) and resulting in high user satisfaction ratings.

5. Private Sector

In the private sector model, the small town water supply system is run as a business, with profit as the primary consideration. In the Philippines, there are numerous examples of small enterprises providing water supply services to residents of private housing developments, and of small-scale

independent providers selling water to local households, but there are very few cases of private sector management of the primary water supply system in a small town.

Small towns tend to have low population densities and high per capita investment costs, and the high risks and low profits associated with these systems appear to have discouraged most private service providers¹. The few private companies providing urban water supply in the Philippines are found in towns with populations above 100,000, and their service coverage centers on affluent, highly urban areas. Under these conditions, the private water companies perform well, using a professional management style to capture economies of scale and make significant gains in operational efficiency.

Unfortunately, the private sector model currently lacks accountability or transparency. Private water companies have to submit their financial records to the Securities and Exchange Commission (SEC), and water tariff increases have to be approved by the NWRB, but they are otherwise unregulated. Little information about the private water companies is in the public domain, and the WPEP study found that they were often reluctant to reveal their financial results, or to discuss tariff increases with their customers.

¹ This is supported by the recent difficulties that LGU-UWSP has experienced in contracting private operators to manage small town water supply systems (as yet none of the nine pilot towns are under private management)

Cost-efficient Management by Guimbal RWSA

Guimbal is a small town in Iloilo Province with a population of 27,700. Guimbal RWSA has been operating for 15 years and now supplies water to one third of the urban barangays. It has a very progressive LGU, which assisted the RWSA in attracting professional support from a local Water District, and in sourcing grant funding for construction of its water supply facilities.

The water supply system has only average operational efficiency (7 staff for 714 house connections), but is well managed and the RWSA makes a reasonable profit (15% profit margin in 2000). In 2001, the RWSA took the unusual step of reducing the minimum tariff from P70 to P60 (for 10m³). Interestingly, this 17% tariff reduction led to a 50% increase in annual water consumption, creating higher overall revenues and enabling the RWSA to maintain a profit margin of 12%. Guimbal RWSA is fortunate to have a water supply system capable of meeting this increased demand, but it is making the most of its assets, and the water users are clearly benefiting from the RWSA's cost-efficient management.

There is little doubt that involving the private sector in urban water supply management will allow efficiency gains. However, the problems associated with making small towns water supply attractive to private water providers, and in holding these private providers accountable, suggest that their initial involvement should be limited to specific functions in which private provision has a comparative advantage (e.g. O&M, billing and collection, financial audits).

6. Cluster

The cluster model refers to the case where the management body (typically an LGU or Water District) provides water supply services to more than one town.

This model is of particular interest because it has the potential to capture economies of scale, and thus to make the provision of small towns water supply services more attractive to the private sector.

In practice, there is little evidence of any advantage in the management of clusters of small town water supply systems in the Philippines. The three case studies of cluster systems did not perform well, with the few positive findings being related to attributes of the particular management body (LGU or Water District) rather than to cluster effects. This suggests that, in practice, the diseconomies of dispersion and complexity associated with clusters of small town water supply systems outweigh any theoretical economies of scale.



Factors of Success

Despite the performance assessments being based on only two or three case studies of each management model, some common factors of success emerged from the analysis. The successful management models for small towns water supply exhibited all, or most, of the following:

- cost-efficient management (low costs, low tariffs and minimal profit)
- active planning and expansion (significant expenditure on repairs and rehabilitation)
- good relations with local government (ability to attract funding and technical support)
- professional support (assistance with technical and financial management)
- community involvement (creating transparency and accountability)

Small towns water supply systems are rarely large enough to capture economies of scale, and instead rely on the effective use of local resources to minimize their costs (e.g. by paying lower salaries than those found in large towns). The introduction of increasingly professional accounting and financial management practices has assisted successful managers to monitor their expenditures, and to recover these costs whilst keeping tariffs low (see Box on Guimbal RWSA).

Small towns are unusually dynamic in nature. Their populations tend to grow rapidly, and their economic basis and development priorities can change as the towns expand. In the Philippines, efforts to maximize the benefits of water supply investments are leading to shorter design lives and more incremental development of systems. As a result, strategic planning and expansion are critical elements of the successful management of small town water supply systems.

Strategic planning and expansion involve: setting tariffs that cover the costs of repairs and rehabilitation; extending the distribution system into new areas; expanding the revenue base by encouraging new connections; chasing funds for new facilities; and, overseeing the design and implementation of these projects. In small towns, these activities often require both good relations with local government and professional support from external agencies.

The highly politicized environment and the limited funding opportunities found in most small towns in the Philippines mean that LGUs remain central to the success of local water supply services.

Direct LGU water supply management has proven ineffective, due to the constraints imposed by government financial and



Continuing access to professional support is key to the success of community-managed water supply as small towns grow and more complex systems evolve.

management systems. However, water supply providers that maintain good relations with local government improve their access to finance and to external support. In large towns, the substantial revenue from water supply services increases the risk of political capture and rent-seeking by local elites, but in small towns, strong community involvement can assist the water supply management to secure political support whilst retaining their transparency and accountability.

The importance of professional support is seen throughout the small towns water supply sub-sector. Inexperienced and under-staffed small town water supply providers struggle

to organize operation and maintenance teams, to supply themselves with spare parts and consumables, or to keep accurate and up-to-date accounts. Inadequate technical capacity often results in poor planning, design and construction of the water supply facilities, thus reducing the sustainability of even well-managed systems. Advice and assistance in these areas help small management bodies to deliver more reliable services, to set cost-reflective tariffs, to introduce efficient billing and collection systems and, ultimately, to ensure that water users are willing to pay for the services.

When is a small town too big for community-based management ?



manage water supply systems in towns with less than 20,000 inhabitants. What happens when these small towns grow, and associations become too large to be easily managed?

Both RWSAs and Water Cooperatives are accountable to their members through a general assembly, but this

One of the key messages of this fieldnote is that management of a water supply system in a small town is very different to that in a larger urban center. In a small town, pipe networks serve fewer people and use simpler components, but are often more spread out because of lower population densities. The context is also different, with lower local incomes and skill levels. Under these conditions, the case studies suggest that community-based management models are surprisingly effective in providing sustainable water services. However, this neglects the fact that community-based management models are rarely found in larger water supply systems. Both RWSAs and Water Cooperatives were originally intended to

process is likely to become cumbersome and ineffective when too many people are involved. The normal solution to this scale problem is to introduce a new management model when the system becomes too large (e.g. by contracting a private water company to take over the management) but there are several other options to consider. Community-based management models can be decentralized by encouraging new associations to form as the population grows. Each new association covers a neighborhood, and reports to a more professional 'apex organization' that manages the water supply system. In Bulacan Province (Luzon), a federation of RWSAs has already formed – it meets once a month to share information and discuss problems, and enables member RWSAs to make major repairs and procurements at lower costs.

Conclusions

Case studies of fourteen small town water supply systems in the Philippines suggest that water supply systems using community-based management models (e.g. Water Cooperatives and RWSAs) are the most consistently successful in small towns. However, a wider perspective reveals that some 50% of RWSAs registered with LWUA are no longer operational, and that most community-based management models report difficulties in obtaining finance for service improvements or system expansion. Clearly, these successes are unusual in several respects.

The key difference is that the successful community-based management bodies are far more sophisticated than typical community management models. Whilst they began as simple water user associations, they now operate like small businesses. Water supplies are metered; billing and collection systems are well-organized; commercial accounting techniques are prevalent; and, political support is carefully cultivated. Management has been professionalized through gradual training and improvement, but local personnel are still employed, and the community remains well informed and involved in proceedings. This combination of local knowledge and professional approaches is essential to successful small towns water supply.

The professional support received by these community-based management models is a key factor in their success. As small towns grow and their water supply systems become more complex, professional water utility management skills become more important. The lessons learned from this study suggest that professional support helps water supply management bodies to evolve with their systems, and allows an incremental transition from community-based to commercial water supply management. Professional support allows them to provide cost-efficient and well-planned services, while retaining their local advantages and demand-responsiveness. Nearby Water Districts, which often manage their own large urban water supply systems, provide a ready source of technical assistance, and have enabled community-based management bodies to introduce management systems more typically found in large urban utilities.

Water Districts offer an alternative management model with strong financial and institutional performance, as well as good technical capacity. In small towns, however, Water District services are rarely demand-responsive, and the constraints of government control often result in high tariffs, high debts and limited services for the



Small towns do not interest private water companies because of the low population densities and presence of generally low-income level of consumers in these areas. Community-managed systems often employ a breakeven strategy, but when run professionally, they can be very effective in supplying small towns.

poor. Water Districts appear more successful in larger towns where they can utilize their professional skills to capture economies of scale.

To date, the provision of small towns water supply in the Philippines has not attracted much interest from the private sector. Small towns combine low population densities with low-income consumers, thus require a relatively high per capita investment for little return. There is little scope for efficiency gains, and local politicians often have an undue influence on the performance of the water services. Unsurprisingly, this blend of high risk and low yield has discouraged private service providers

from all but the most prosperous and welcoming of locations.

In general, the successful examples of small towns water supply management are those that have taken advantage of their position astride the rural-urban divide. Local knowledge and community involvement reduce costs and improve transparency, while the availability of skilled staff and external support allow more advanced technical and financial management. The community-based management models examined may not make much profit, but when run professionally, they offer low tariffs, effective operation and maintenance, and good cost recovery.

Recommendations

The lessons learned from the case studies suggest the following recommendations for the sustainable provision of small town water supply services in the Philippines:

A Greater involvement of LGUs

There is a strong case for improving the support provided by LGUs to water supply managers. This will require a strengthening of the water supply and sanitation capacity within LGUs, in line with the ongoing decentralization process, as well as the introduction of new forms of local regulation and contract management. Water supply units within LGUs should promote commercial practices, provide political support for transparency in transactions, offer grants for capital works, and carry out performance audits with citizens' participation.

B Incentives to provide professional support

The successful case studies were often dependent on professional support from a Water District. This support cannot be guaranteed. Suitable Water Districts are not available in all areas, and some may not wish to offer their services. Therefore, it is recommended that institutions capable of providing professional support (be they Water Districts, or other independent providers) should be offered incentives to assist managers of small towns water supply systems.

An approach that has proved successful in West Africa is the creation of Water Management Units (WMU), which provide financial, management, training and performance benchmarking services to groups of small towns (or federations of RWSAs and Water Cooperatives). These support services are funded through production charges paid by the water supply provider (a nominal payment per unit of water produced), thus encouraging the WMU (or Water District) to assist the water supply providers to expand their services and increase water production.

C Contract out commercially viable functions

There are about 500 community-managed water supply systems operating in small towns in the Philippines, and several hundred others that have failed. There are also some 500 LGU-managed systems. The WPEP study suggests that an incremental transition to commercial management is vital for the sustainability of small town water supply systems under community-based or local government management, particularly in those towns where population is growing rapidly. This transition will allow the advantages of locally embedded management to be gradually enhanced by the introduction of more efficient operational, financial and decision-making processes. Professional support will be important, but these management bodies should also look to contract out commercially viable functions (e.g. O&M, billing and collection, auditing) to local enterprises, thus improving efficiency while retaining overall ownership and control of their systems.

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