

## Chapter 7

# Small-Scale Water Providers

An ADB-funded survey was conducted in 2002 to gather and analyze information about small-scale water providers (SSWPs) in eight cities: Cebu, Delhi, Dhaka, Ho Chi Minh City, Jakarta, Kathmandu, Shanghai, and Ulaanbaatar. An independent survey by the Water and Sanitation Program was conducted in Manila, and the author also conducted field surveys in this city. Appendix 3 provides brief examples from Cebu, Delhi, Dhaka, Ho Chi Minh City, Kathmandu, and Manila.

Evidence suggests that a large percentage of urban poor populations is still without access to water and sanitation services, despite improvements in this sector. Many surveys done in Africa and Latin America have demonstrated that a significant number of urban populations are served by SSWPs that provide competitive and appropriate service to households without access to utility connections. There is little data on this phenomenon. For this reason, nobody has a clear picture of the role played by SSWPs in water supply, particularly with respect to the urban poor. This chapter looks at that role.

### A. Limits of Conventional Responses

Over the past decades, governments have favored large water utility companies, and results remain unsatisfactory. With existing tariffs and management structures, these companies have been unable to provide piped water coverage to whole populations. For example, in some unauthorized settlements, a large percentage of people draw (or illegally receive) their water from “spaghetti networks” that connect to the edge of a municipal grid system. Others remain without service for one or more of the following reasons.

- Connection fees are too high, and lump sum up-front payments exclude the poor.
- Total available water is not always sufficient to cover whole populations, and vulnerable groups are the first to be left out.
- Even when water supplies are sufficient, tariffs and low volumes of water consumption may not make



Water vendor in Manila

it attractive for utilities to deliver services in low-income areas, where the minimum cost of extending services is relatively high.

- When people occupy land illegally, it can mark them as not eligible for public services (otherwise, the provision of public service could provide de facto a proxy for legal status).

Even if water companies are allowed or mandated to serve poor households, they often do not have the know-how to do so, which leads to the following.

- Service levels are often not tailored to demand, but are instead based on technical standards and therefore are not affordable for low-income families.
- Payment systems are at times not adapted to the particular conditions and constraints of the poor (irregular income).
- Employees of main operators do not always communicate well with residents of low-income areas, which only exacerbates the risks of being overcharged or penalized in the case of improper billing.

## B. Alternative Water Supply Services and Local Initiatives

Because of the failure of conventional utilities to serve many low-income households, a large number of people rely on alternative forms of service, which are either run by community groups or delivered by local entrepreneurs. Yet sector reform and modernization have focused exclusively on large-scale operators and have ignored the potential offered by community-led initiatives and local private operators. Private sector involvement now increasingly includes SSWPs.

Surveys have highlighted the comparative advantages of SSWPs over large utilities in periurban areas, low-income neighborhoods, smaller towns and centers, and consolidated inner-city neighborhoods. Low-income households buy their water from these operators because they provide the right service at the right price. Even if the cost of water from SSWPs is higher than the nominal tariff charged by utilities, poor consumers may prefer the former because the supply is reliable and flexible (particularly in terms of quantity and hours of supply) and there is no excessively high connection fee.

## C. Types of Small-Scale Water Providers

SSWPs can be small companies, cooperatives, individuals, and community-based organizations. They are independent to the extent that some are self-employed entrepreneurs or artisans. Most work without formal recognition from local authorities and are not usually subcontracted by major water distribution companies. Unlike multinational companies, such operators enter markets freely, take risks, and invest without an agreement with the public sector. Small-scale investors and local entrepreneurs have always supplemented trunk concessions and public companies in serving hard-to-reach parts of towns and in tailoring services to the poor. They account for a significant share of the market. There are three main types of SSWPs.

- **Partners of water utilities**

Some local operators work with water utilities, whose water they distribute at kiosks or standpipes. These operators buy water from water companies at a flat rate and sell it on to end users at a profit. They do not receive a salary.



Small-scale water provider



No need to regulate (yet)

- **Vendors and resellers**

Vendors include mobile water truckers, carters and water carriers, and household resellers. They provide water (most often drawn from water company taps) at times and places that water utilities are unable to serve.

- **Pioneers of small piped networks**

Pioneers bring piped water from their own sources (often groundwater) to communities where water utilities have not yet expanded their networks. The level of investment and the initiatives and financial risks taken by these various types of water providers are quite different (see Table 7.1). The level of service provided fits with urban population demand. Due to the dynamism of this service and the strong existing barriers for these private operators, there is a need for more in-depth analysis.

Type of Provider	Level of Investment	Level of Initiative	Link with Water Utility	Financial Risk	Level of Service
<b>Partners of Water Utilities</b>	Very Low	Very Low	Strong	Very Low	Low (water outside home)
<b>Resellers</b>	Very Low	Low	Strong	Very Low	–
<b>Carters and Water Carriers</b>	Low	Low	Weak to Strong	Low	Average (water delivered to home)
<b>Truckers</b>	Medium to High	High	Weak to Strong	Medium (water trucks can be used for construction activities, etc.)	Average (water delivered to home)
<b>Pioneers of Piped Networks</b>	Medium	High	Weak to Strong	High	Average to High (water delivered to home by hose or household connection)

#### **D. Scope and Scale of Small-Scale Water Providers in Asian Cities**

The role played by SSWPs in water supply in selected cities is strongly linked to the water service provided by water utilities. For example, in Shanghai the utility provides good service with a low connection fee. Apart from bottled water businesses, there are no SSWPs in Shanghai. In cities like Delhi, Dhaka, and Kathmandu, about 5–10% of all households are served by SSWPs. The high level of subsidy and the policy of providing “free” water to the poor in South Asian countries, combined with good access to groundwater, have limited the niche market for SSWPs, despite the low level of service provided by water utilities. Currently, the most important input of SSWPs is in Southeast Asia, where the coverage of piped systems operated by water utilities is about 50% with medium-to-high connection fees. Roughly 20–45% of households in Cebu (Philippines), Ho Chi Minh City, Jakarta, and Manila may rely on water supply services provided by SSWPs. Table 7.2 shows the types of services provided.

#### **E. Small-Scale Piped Systems**

Apart from real estate developers who have installed piped systems for their own residential areas, few local entrepreneurs have installed piped systems in low-income areas to provide household connections. The number of people served by each system is still limited in the cities studied (100–700 connections). In Manila, a small local company—Inpart Engineering—operates 12 systems and serves today around 30,000 households in low-income areas (see Appendix 3).

Nevertheless, local entrepreneurs have implemented low-cost technology and proposed low connection fees to customers. The connection cost is limited to the cost of the needed materials (pipes, meters, etc.). The materials generally fit the settlements they serve, and these entrepreneurs adapt billing to the customers’ forms of income (from daily to monthly payments). In Ho Chi Minh City, entrepreneurs have invested in a water treatment unit to serve safe water to customers. In most cases, SSWPs support the total amount of their investments through privately sourced loans with high interest rates of up to 5% per month. They do not have access to commercial loans and do not receive any financial support from local authorities or external support agencies.

Table 7.2 Services Provided by Small-Scale Water Providers in Study Cases

Service	City	Main Location of the Service		Population Targeted	Origin of Water
		Within Utility-Operated Piped System	Outside Utility-Operated Piped System		
Household Connection	Cebu Delhi Dhaka Ho Chi Minh City	–	X	All people	Groundwater
	Cebu	X	–	Medium-income to poor families who cannot afford the (\$100) connection fee	Groundwater
Standpipe	Cebu	–	X (in areas with limited access to groundwater)	All people	Groundwater and water utility
Kiosk	Ulaanbaatar	–	X (in <i>Ger</i> area not served by utility kiosk)	All people	Groundwater
Tanker	Ho Chi Minh City	–	X (in an area with quality issues concerning groundwater salinity)	All people	Water utility and surface water
	Ulaanbaatar	–	X (in <i>Ger</i> area not served by utility kiosk)	All people	–
	Delhi Kathmandu	–	X	High- and medium-income families (to supplement the low water quantity provided by the utility)	Groundwater, spring, and surface water
Pushcart	Dhaka	X	–	Medium- and low-income families (to supplement the low water quantity provided by the utility)	Utility standpipe
	Delhi Jakarta	–	X (in area near the utility's piped system)	Low-income families	Utility standpipe
Reseller	Cebu Ho Chi Minh City Jakarta	X	–	Poor people who cannot afford a household connection	Tap
Water Carrier	Dhaka	X	–	High-income families (to supplement the low water quantity provided by the utility)	Utility standpipe

Their legal environment is poor, and generally they work under an illegal framework (due to water distribution monopolies of utilities). This situation is particularly true in Delhi and Dhaka. In Cebu, however, operators have received authorization from the local authority (chief of the *barangay*), and in Ho Chi Minh City some entrepreneurs have signed contracts with the water utility that define the water tariff.

The tariff charged by SSWPs is lower when they operate in a friendlier environment. In Delhi, Dhaka, and Kathmandu, where SSWPs operate in an illegal environment, the water tariff is 6–10 times more than the utility tariff (which is strongly subsidized). In Cebu and Ho Chi Minh City, where SSWPs have received official authorization, the multiplier is respectively 2.6 and 1.7.

## F. Examples of Small-Scale Water Providers<sup>8</sup>

### Cebu

The water utility serves only about 30% of the 1.5 million people in this city. Several SSWPs provide water services, mostly based on small distribution networks connected to privately owned and maintained wells. These systems are of various sizes, serving up to 500 households. Average consumption is in the range of 12–15 m<sup>3</sup> per month, and the monthly water bill is \$6–8. In comparison with the utility service, which is not available in locations served by SSWPs, connection arrangements are simpler and cheaper but the tariff is higher.

### Delhi

About 60% of Delhi's 14 million people live in slums, resettlement colonies, and low-income clusters. Most of these are not served by household connections. Instead, they get water from public standpipes, tubewells (with handpumps), and water tankers. The utility—Delhi Jal Board—operates about 1,000 tankers delivering 23,000 m<sup>3</sup> per day. Supply by tanker costs close to \$1/m<sup>3</sup>, while supply through the piped system costs only \$0.10/m<sup>3</sup>. The utility's tankers must provide free water to the poor who have no other source of water. These tankers, when requested, also serve middle- and high-income households. The role of SSWPs in Delhi is very limited because the utility's

water price is low and water is provided free to the poor. There are, nevertheless, a few private pipeline providers who supply connections using their own tubewells. The users pay \$4–10 for about 15–30 m<sup>3</sup> per month. There are also tricycle services. These involve payment for the cost of transporting water from standpipes to homes, which equates to about \$4–6 for 1.2 m<sup>3</sup> per month of drinking or cooking water per household. The bottled water industry is also strong, with 24-liter bottles of treated water costing around \$0.80.



SSWPs often use meters to manage

### Dhaka

The need for water of people living in informal settlements prompted the establishment of one SSWP business in Dhaka. It serves 9,100 households through 100 individual connections and 15 standpipes, and it is located about 1.3 kilometers from the utility network from which it sources its water without charge. The whole operation is illegal, but it provides a basic human need to the people. The business charges \$0.86/m<sup>3</sup> for water, compared with the utility's \$0.12/m<sup>3</sup>. Only about 300 m<sup>3</sup> of water is supplied to the neighborhood each day, which equates to about 1 m<sup>3</sup> per household per month. It would seem that this water can only be used for drinking and cooking.

### Ho Chi Minh City

About 19% of the households in Ho Chi Minh City use SSWPs. Most providers (about 60%) are resellers (households with connections from the water company, which resell water to 3–5 other households in the neighborhood). The rest are tanker operators, providers using small pipeworks, and bottled-water providers.

<sup>8</sup> For details see Appendix 3.



Bottled-water provider



Water tanker for people not being served

Average consumption from household resale is 17.5 m<sup>3</sup> per month, which can be compared with 36 m<sup>3</sup> per month from the water utility. The average tariff for household resale is \$0.56/m<sup>3</sup>. Average consumption from water tankers is 6.6 m<sup>3</sup> per month, and the average tariff is \$0.90/m<sup>3</sup>. A network provider on the outskirts of Ho Chi Minh City uses groundwater from his own well. His system has a design capacity of 720 m<sup>3</sup> per day, but presently only 100 m<sup>3</sup> per day is provided. The designed number of connections is 2,000, but only 400 households have been connected in the first 2–3 years. Water is sold at \$0.22/m<sup>3</sup>, and household use is about 7.5 m<sup>3</sup> per month. This provider has a license to operate for 3 years and a tax exemption for 5 years. What is unique about the Ho Chi Minh City case is the real partnership and spirit of partnership created between the water utility (Ho Chi Minh City Water Company) and SSWPs.

### Kathmandu

More than half of the city's 1.1 million people depend on sources other than the utility to meet their water needs. About 31% rely on their own wells, 15% on community managed systems, 6% on SSWPs, and 5% on neighbors' connections. Most SSWP services are provided by about 65 tankers operated by 36 providers. The quality of the water depends on the source, which can be natural springs or groundwater. Consumers prefer one company over another based on its source of water. In general, this service is provided to the more affluent members of the community (who can afford to pay \$1.30/m<sup>3</sup> for delivered water).

### Manila

It is estimated that millions of people in this city receive water from SSWPs. About 2 million receive water (by resale) from neighbors' connections or from neighborhood kiosks, another 2 million from pushcart water vendors and tanker deliveries, and a further 1 million from direct connection or hose. The average consumption volume per household is 6 m<sup>3</sup> per month, and the monthly water bill is \$10–20. By contrast, those on the utility supply get about 30 m<sup>3</sup> per month and pay \$3–6 per month. In most cases, the source of water is the water utility.

## G. Conclusions

"Water for All" is the catch cry of governments, development agencies, and operators alike. Yet in many deliberations over the years, SSWPs have been to a large extent ignored. **But in terms of the total revenue turnover from water in megacities, like Jakarta or Manila, SSWPs are responsible for more revenue turnover than formal utilities.** This alone is justification for taking a much closer look at SSWP operations. When their operations are seen as intimately linked to the urban poor, because of low rates of effective coverage with piped water (often less than 50%), there is another powerful reason for further investigating their operations.

The main issue with SSWPs is the great lack of equality between those connected to piped water and those not connected. There are people with vested interests (which might include utility staff, utility owners, local authorities, and government and elected officials) who are keen on maintaining the status quo. It should be noted that the only vested interests of SSWPs relate to employment and the operation of small businesses. The studies to date appear to show

that SSWPs make little profit and do not exploit their clients (who are mostly the urban poor).

Is there a need to regulate SSWPs? Evidence suggests that there is not. That would probably drive many of them out of business. To a large extent, the market promotes regulation through customer choice concerning price and quality of water. Competition is strong. There is, however, a need to recognize SSWPs officially. Then it will be important to under-

take comprehensive, independent audits of water and service levels to ascertain the facts from the field. Water utilities need to be regulated and guided by clear policy statements from governments on piped water service coverage and SSWPs. Any water supply study strategy for a city must consider the role of SSWPs. Finally, financial assistance should be made more readily accessible to SSWPs so that more investments can be made to bring good-quality piped water to the urban poor.

### Small-Scale Water Providers in a Nutshell

- Services provided include distribution pipework for utility water and/or groundwater, kiosk sales, pushcart and tanker vendor deliveries, and neighborhood resale of utility water.
- Water sources (whether legal or illegal) are mostly water utilities, but also groundwater.
- SSWPs sometimes generate more revenue than formal water utilities.
- In default of the water utility, SSWPs provide the urban poor with essential services. Many SSWPs are also poor.
- The great inequity: the connected can pay \$4 for 30 m<sup>3</sup> and those not connected (supplied by SSWPs) can pay \$20 for 6 m<sup>3</sup>. The status quo is maintained by those with vested interests.
- In many cases, SSWPs are not formally recognized by utilities or local governments.
- Tariffs are higher than those charged by utilities but connection fees are lower.
- SSWPs provide more flexible arrangements for connections and payments than water utilities, leading to better relations with customers.
- Officials need to learn more by auditing existing utilities and SSWPs, so that SSWPs can be registered and recognized but not regulated (yet).
- Residents need to have clear policy statements from governments on piped water coverage and SSWPs. Governments should include SSWPs in water supply strategies.
- SSWPs need access to financing.