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Competition in Water and Sanitation

The Role of Small-Scale Entrepreneurs

Tova Maria Solo

In water and sanitation there has always been a belief that the sector has a high degree of natural monopoly. But competition is widespread at the low-income end of the retail level in developing countries. There are no inherent monopoly characteristics in, for example, reselling water by the bucket. This Note explores the diversity of small scale entrepreneurs and their role in meeting unserved niches of the water and sanitation market. Indeed, small enterprises often account for a larger share of the market than incumbent utilities and they are well placed to complement and even compete with trunk concessions and public companies in tailoring services to the poor. So in designing concessions or any long term rules for the sector, governments should take account of existing or potential small providers.

WATER VENDORS, COMPETITION, AND CONCESSIONS

While small-scale private suppliers are sometimes accused of monopoly pricing and poor water quality, this does not appear to be the general case. Recent studies of private water vendors in Guatemala and Paraguay show competition holds prices down to a maximum of 2.5 times and 1.4 times the official utility price, far from the exorbitant rates commonly attributed to private water vendors. But myths abound, sometimes with serious consequences.

When Aguas Argentinas moved to extend water services to the periurban neighborhoods of Buenos Aires, it relied on widely circulated accounts of the practices of private water vendors. Believing that the truckers resold water at fifteen to fifty times its bulk price, Aguas Argentinas had every reason to expect low-income families to be eager to connect to its service. Although there were local reports of annual family expenditure on water and sanitation in periurban areas at less than US\$150, about a tenth the size of the average Aguas Argentinas bill, the reports of the water vendors' high rates prevailed—right up until the low-income families refused to hook up to the aqueduct. Their resistance helped lead to the renegotiation of the Aguas Argentinas concession.

In most cities in developing countries, more than half the population gets basic water service from suppliers other than the incumbent official utility. Recent studies of water supply service in Ethiopia, Guatemala, Paraguay, Mali, Mauritania, Haiti, Yemen, and Senegal suggest that entrepreneurs in water and sanitation, responding to local conditions and competing for market niches, take a wide range of forms.

For example, when water utilities provide water through trunk lines but cannot justify investments in low-income neighborhoods, individuals with water connections sell water through standpipes or extensions to their neighbors and extended families. In Mali 25 percent of Bamako's water supply moves through residential resales. The households that resell water can recoup the costs of their connections while offering credit and personalized services to customers who cannot afford a connection or meet a monthly bill.

Where groundwater is available and extending pipelines is costly, bulk water supply systems bring water from private wells to secondary vendors. Such vendors account for more than





30 percent of supply in Tegucigalpa, Honduras, in Guatemala City, and in Lima, Peru, and a growing share in Turkmenistan and Uzbekistan. In addition, small-scale network infrastructure systems provide house connections. For example, *aguateros* cover more than 20 percent of Asunción, Paraguay, with some 200 aqueducts drawn from ground wells, each system serving between 50 and 1,000 families. And in Malang, Indonesia, a small-bore developer put together a private sewerage system that ended up covering more than 1,000 families.

When utility companies lack means to extend their networks, suppliers of materials, equipment, and contractors build water and sanitation systems and turn them over to user groups or to the utility. For more than forty years virtually all new secondary infrastructure in Latin America has been supplied by developers and paid for by home owners.

Private entrepreneurs also own or manage water points, “kiosks,” latrines, pipelines, storage tanks, and fillers. These suppliers make up the fastest growing category of water providers in Dhaka, Bangladesh; cover more than half of Nairobi, Kenya; and supply a third of families in Addis Ababa, Ethiopia.

The relevance of the utility model

Historically, utility companies emerged to take sole command of water supply in U.S. and European cities for two main reasons: to guarantee uniform water quality and to provide pressure points for fire prevention and control. As this model has been officially adopted in developing countries and promoted as a public or private monopoly, the multiple small-scale providers have dropped out of the lexicon. The arguments based on economies of scale or natural monopolies in water provision have often meant small, informal suppliers were ignored, or worse, outlawed, by policymakers or regarded as a stop-gap and suboptimal.

Efficient, large-scale, monopolistic companies may be the best alternative in Europe and the

United States, where everyone can pay for—and everyone wants—a standard metered water connection and a sewerage hookup. But it is hard to replicate such efficiencies in the utility companies of developing countries. Where needs and conditions differ from one neighborhood to the next, there is a case to be made for a range of services and providers.

Where utilities have monopoly rights, and small entrepreneurs are illegal or, at best, irregular, the entrepreneurs tend to operate outside the law and there is little concrete information about them. The recent transfers of exclusivity from public utility to private concession have reinforced their “nonstatus” in countries undertaking water sector reform. Guarantees of exclusive sales and extraction rights to the major supplier, rigid technical standards, lifeline water rates, and subsidized prices can all wreak havoc for a small entrepreneur, as can the utilities’ attempts to organize and control parallel vendors. Moreover, because the alternative providers are small and mostly illegal, they do not qualify for financing from banks, which might have served as a repository for information about them. Myths about the extortionary or low quality supply from small-scale private sector entrepreneurs have flourished, often to justify loans made to the utility companies and the subsidies they apply.

The case for entrepreneurs

In reality small-scale operators tend to be customer-driven, financially viable, and ready to apply innovative technologies and marketing methods. They provide appropriate solutions in appropriate places, assume all investment risks, and reach the poor. They charge market prices, cover costs, and respect willingness to pay.

Efficiency

The operational efficiency of the small-scale operators compares well with the large-scale suppliers. A study of Haiti and four West African countries reported virtually no water losses among the private providers and an employee-client ratio of 1 to 500, figures that any utility

company would envy. The study in Guatemala compared two private aqueduct and sanitation systems with the state water company and found that investment costs per new customer were 20 percent and 60 percent lower for the small-scale private companies than for the state utility, operating costs 72 percent and 77 percent lower, and administrative costs 92 percent and 95 percent lower. The ratio of income to expenses was 1.18 and 1.37 for the small-scale operators, compared with 1.47 for the public company.

Viability

Small private water and sanitation businesses are profitable, unlike most single-source utilities, which seem to need a critical mass of high-income clients to make a profit. The study of Haiti and four West African countries found that of twenty-five municipal water supply companies reviewed, only those in cities of more than 100,000 people were operating in the black. And while the official water companies enjoyed monopoly rights to serve in these cities, they reached no more than 65 percent of the population, leaving the private, small-scale sector to cover the low-income families. All that leads to doubt about whether the utilities can make a profit and achieve universal coverage.

Small-scale operators can start up more quickly and cheaply than their bigger competition. Start-up costs for private operators can run anywhere from US\$1 for a pan to sell water by the cup in Senegal to US\$15,000 to drill a well and lay pipes in Paraguay. Most of the cases reviewed in the studies have been entirely self-financed, through personal and family guarantees and, in rare cases, through business and vehicle loans, though never for more than eighteen months. The costliest item for water suppliers tends to be piping and its installation. In Paraguay the president of the Water Suppliers Association commented that he and his colleagues base their investments on a market study and a reasonable certainty that they can recover investment costs within three years, an approach similar to those used by some of the

large international companies. But these Paraguayan water suppliers have adopted this approach in part because there is no credit available to them for longer than three years and in part because of the risk that the government could rescind the right of private operators to keep their businesses.

While large companies tend to be discouraged by the risks and costs implied by new technologies (and by the abandonment of existing ones), small-scale entrepreneurs, which have much less to lose, are more likely to adopt innovations. Small-bore sewerage systems, for example, were first introduced into Buenos Aires by a community-based provider in touch with a private entrepreneur from Colombia.

Thanks to their size and their consequent ability to get closer to clients, small-scale entrepreneurs have developed simpler, more appropriate charging mechanisms—from offering customers credit to charging on a daily basis, as the “water women” in Dakar, Senegal, do. In Guatemala City the first system of “paying as you go in your bank” was introduced by a community-owned and -operated water company, ACOVA, serving some 7,500 families.

In many cases the services of independent providers are expanding faster than those of the utility companies. Lima and Guatemala City have major utility companies, charged with universal coverage, that offer subsidized tariffs for residential consumption. Yet in both cities most families depend on private informal providers for water and sanitation services. In Guatemala City some 200 independent operators—ranging from truck vendors to private aqueducts—provide services to more than half the population. In Lima more than 40 percent of the population depends on private providers—mainly truckers and standpipe operators—for full or complementary water services. That includes the high-income neighborhoods, which rely on truckers with water from private sources when the utility company rations their water during the summer. Through a World Bank-supported project Lima’s water



utility is expanding its services and plans to reach all neighborhoods within five years. But Lima will still rely on informal providers to distribute water to between a quarter and a third of its neighborhoods, without the benefit of any long-term financing.

Flexibility

Small-scale suppliers are basically independent of public water suppliers, although many work in partnership with state companies, purchasing water from them for distribution. And the public sector may depend on private distributors to reach some neighborhoods. In Port-au-Prince, Haiti, small-scale entrepreneurs produce about 10 percent of the urban water supplied, distribute about 20 percent of the city's water, and reach some 70 percent of the households.

Independent water companies are not necessarily limited to places with groundwater (as in Guatemala and Paraguay). Almost all of Yemen's urban population and about a quarter of Lima's depend on small-scale private companies for water supply, despite the difficulties of finding groundwater. Nor are private water and sanitation systems limited to a particular income group. They regularly serve the rich as well as the poor. In Asunción, Dakar, Barranquilla (Colombia), and urban Yemen small providers reach middle-income families as well as households at the extreme ends of the income distribution scale.

Conclusion

Efforts to reform and to regulate the water sector in developing countries have focused almost entirely on strengthening the single large-scale supplier and making it operate like a commercial business, either by carefully designing incentives or by bringing in private management. But the reforms have tended to reinforce the same monopoly model that has always dominated the sector.

Recognizing and understanding the role of small-scale providers could lead to a rethinking of the traditional model for the sector. It

could mean switching from the usual regulatory mechanisms—focusing on price caps, subsidy issues, and quality control—to an approach in which competition, open entry, and open sharing of information replace control mechanisms. This flies in the face of some traditional public sector policies, as it would end guarantees and “breaks” for the monopoly utility and seek to level the playing field for entrepreneurs of all sizes. Yet at the same time it would oblige small entrepreneurs to live up to certain standards and to avoid tendencies toward collusion and monopolistic behavior.

World Bank–financed water sector projects under preparation in Colombia, Paraguay, and Senegal are exploring ways to support small-scale water entrepreneurs in the context of traditional, state managed projects. Eventually the World Bank or the International Finance Corporation might find a way to support small-scale entrepreneurs directly. But for now an official appreciation of how small-scale entrepreneurs can fill market niches and develop innovative technologies and marketing practices could nudge large-scale providers into admitting competition.

Tova Maria Solo (tsolo@worldbank.org), Urban Sanitation Specialist

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