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Expanding Water and Sanitation Services to Low-Income Households

The case of the La Paz–El Alto concession

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Bolivia is one of a growing number of developing countries turning to the private sector to improve urban water and sanitation services. The country's first major contract in the sector, a twenty-five-year concession for the neighboring cities of La Paz and El Alto, was implemented in August 1997.

The public utility in La Paz–El Alto provided center city residents with in-house water and sewer connections but did not serve lower-income residents in outlying areas. Unserved households relied on alternative water and sanitation services—often at high cost. A primary objective in moving to a private concession was to turn this situation around—expanding services to low-income households while holding down costs by increasing efficiency. It is not a foregone conclusion that the new concessionaire will do a better job of expanding service; much will depend on how well the contract and sector regulation have been designed. Because the La Paz–El Alto concession was explicitly designed to expand service to the poor, this concession is a good case study for evaluating how different provisions in the contract and the sector regulation may help or hinder service expansion.

Most water and sanitation concessions in developing countries have followed a broadly similar model. The contracts are typically long term—twenty-five to thirty years—and offer the concessionaire an exclusive right to provide services in a defined area, paired with obligations to achieve certain coverage and quality targets. Concerns about service access for low-income households are usually addressed through universal service obligations and a “social” tariff

for low levels of consumption. Though it contains a number of innovations, the La Paz–El Alto concession follows this general approach. But the criteria used to select a private concessionaire in La Paz–El Alto marked a departure from earlier concession awards in the region, in which bidders were asked to specify the tariff they would require to meet prespecified investment and service obligations. Bidders for the La Paz–El Alto concession, by contrast, identified the number of water connections they would make in exchange for a prespecified tariff. (The tariff and sewer expansion requirements were fixed in the bidding documents.)

Contract obligations

At the time the contract was awarded coverage was 87 percent for in-house water connections and 48 percent for sewer connections. The winning bidder—the Suez Lyonnaise des Eaux consortium Aguas del Illimani—committed to achieve 100 percent water coverage in La Paz and to install 71,752 new water connections in the El Alto subsystem (the poorest in the metropolitan area) by December 2001. By some estimates the new connections will achieve 100 percent water coverage in El Alto. The concessionaire also committed to 90 percent sewer coverage in El Alto and 95 percent coverage in La Paz by 2021.

The concession contract specifies that all new water and sewer connections must be in-house connections. The contract also sets out requirements for service quality (including water quality, continuity of service, water pressure and flow, and customer service). The contract is largely silent on the inputs to be used to achieve these outcomes.





The concession is regulated by a relatively independent national body, Superintendencia de Aguas, established in 1994 to grant and regulate concessions for municipal water and sanitation services. The regulator monitors and enforces compliance with the expansion and quality obligations but not the specific investments made by the concessionaire. The regulator also must approve all tariff revisions over the life of the contract. An increasing block tariff structure and an average 38.5 percent tariff increase were introduced just before the concession began. The tariff, based on water consumption, is for both water and sewerage services, and for low-income consumers is well below cost. The first tariff review is scheduled to take place five years into the contract; in the interim, tariffs are indexed to the U.S. dollar. The contract also sets maximum connection fees: US\$155 for a water connection and US\$180 for a sewerage connection.

Help or hindrance?

Using the La Paz–El Alto concession to illustrate, the remainder of this Note looks at whether service area boundaries and exclusivity provisions, expansion mandates, technical specifications, and tariff structure and connection fees help or hinder service expansion.

Service areas and exclusivity

Most concession contracts define the service areas where the concessionaire is expected to operate. Water and sanitation concessionaires are almost always given an exclusive right to provide service in these areas for the life of the contract. Service area boundaries and exclusivity rights shape the service options available to low-income households. For example, a concessionaire can offer connections to households within the service area but is not required to connect—and may be prohibited from connecting—households outside that area.

The La Paz–El Alto concession creates a third group of households by dividing the service area in two. The concessionaire is not required to provide service in the fringes of the service area

(called the *area no servida*) unless neighborhoods in this area meet certain criteria. Today this area is not highly populated, but it is an important area of settlement for new rural immigrants.

Exclusivity within the service area has traditionally been justified on the basis that it reduces revenue risk—and thus increases the financeability of projects with high capital costs and long amortization periods. It is also sometimes advocated as a way to protect the revenues of concessionaires that are required to cross-subsidize some groups of consumers. But exclusivity can have a major downside, especially for low-income areas that lack formal connections. Exclusivity illegalizes and suppresses the emergence of alternative service providers, even in areas that the concessionaire may not serve for some time. There may be other ways of increasing the attractiveness of a concession that are less harmful than exclusivity, such as improving the stability and credibility of the regulatory regime and eliminating unduly costly investment obligations.

The La Paz–El Alto contract does not explicitly state whether Aguas del Illimani has exclusivity over its service area, but the contract and Bolivia's water regulations protect the concessionaire from competition. The regulations, for example, prohibit the sale of water by connected households and allow the concessionaire to charge a fee for private groundwater extraction within its service area. The contract requires that the concessionaire eliminate all communal standpipes, but these standpipes are inexpensive alternatives to in-house connections for many households. Restricting the options available to poor households will likely do more harm than good in areas (such as the *area no servida*) where the concessionaire is not obligated to provide in-house connections in the foreseeable future.

Thus exclusivity is actively harmful when it restricts service options that households might otherwise choose. Service area boundaries are generally neutral but potentially harmful if they exclude households best served by the utility.

Expansion mandates

Connection requirements like those in the La Paz–El Alto concession are a direct way to include expansion goals in private contracts. If such requirements are enforced, they can induce utilities to expand services to customers they might otherwise be unwilling to serve. Expansion mandates may be:

- *Mandates on the number of new connections to be added.* These mandates are reasonably straightforward to monitor and enforce provided that what counts as a connection is clearly defined and the mandates are backed up with incentives for compliance. In La Paz–El Alto all connections must be in-house connections. Failure to make all required connections within a specified period results in a fine and, for major lapses, an increase in the expansion mandate for the following period.
- *Mandates on percentage coverage.* The long-term sewerage coverage mandates in the La Paz–El Alto concession take this form. Such mandates may be difficult to monitor and enforce. In La Paz–El Alto, for example, no one knows how many houses are in each subsystem, so mandating, say, 50 percent coverage is difficult. In an attempt to address this problem, the concession requires the regulator to translate the contract's percentage coverage requirements into a mandated number of connections at the beginning of each five-year period.
- *Mandates to connect all households or neighborhoods meeting certain criteria.* The La Paz–El Alto contract subjects expansion in the *area no servida* to this type of mandate. The concessionaire must connect neighborhoods in this area if they meet density criteria and if doing so would not significantly increase costs. This mandate is potentially quite weak because whether a neighborhood meets the criteria is subject to debate.

The basic idea behind expansion mandates is that they can encourage concessionaires to do things that they might otherwise be unwilling to do. An unwillingness to expand service might have several causes. Concessionaires may be

adverse to sinking large investments early in the life of a contract—for example, if there is uncertainty about the independence and sustainability of regulatory arrangements. Some neighborhoods may be more costly or risky to invest in—for reasons as varied as location, density, obstructive local officials, neighborhood violence, or delays in legalizing land tenure. Expansion mandates do not directly address any of these problems. And a concessionaire may, depending on the regime, be able to argue that it is impossible to comply with its mandates given the magnitude of such problems. In this situation expansion mandates may at best open a dialogue on how these problems can be addressed. On the whole, though, expansion mandates can be neutral to positive.

Technical specifications

Most concession contracts say something about how water and sanitation services must be delivered. They may specify outputs (type of service, number of connections, minimum service quality) or inputs (technical and materials standards, required construction techniques, procedural requirements). In general, mandating outputs and not inputs—as is generally the case in the La Paz–El Alto contract—is preferable because it allows the concessionaire to choose the most efficient way to provide the desired outputs.

Output requirements are not without their problems, however. By requiring in-house connections and mandating service quality standards, the La Paz–El Alto contract greatly restricts the flexibility of the concessionaire's service offerings. The regulator recognizes that the mandated service levels are expensive and could jeopardize expansion efforts. Thus efforts have been made to lower costs. For example, while maintaining the requirement for in-house connections, the regulator has sanctioned a pilot project in which the concessionaire is installing condominial water and sewerage systems in some El Alto neighborhoods. (Condominial systems reduce costs by using smaller pipes, installed in relatively



shallow trenches, often under households' yards rather than under roads.)

Output requirements are generally preferable to input requirements, which risk raising costs and making procedures unduly burdensome. But output requirements can also be harmful if, by restricting a concessionaire's service offerings, they make service expansion too costly for the concessionaire or out of line with household preferences.

Tariff structure and connection fees

Whatever the cost of service, a concessionaire must be able to cover its costs if the desired expansion plan is to be sustainable. Cost recovery over the life of the contract will be affected by such factors as the tariff structure, the ability to disconnect customers for nonpayment, regulatory rules for adjusting the overall tariff level, and the soundness and independence of arrangements for applying those rules. Here we concentrate on the tariff structure.

Concessionaires will have an incentive to focus service expansion efforts on areas where capital expenditure costs are relatively low or quickly recoverable and where tariffs cover or exceed operating costs. In La Paz–El Alto there are at least three possible disconnects between the tariff structure and the contract's service expansion objectives:

- *The social tariff.* Households are charged a unit tariff that falls well below costs for the first 30 cubic meters of water they use each month. The sale of water to low-consumption households is thus a loss-making proposition, and a concessionaire might be expected to prefer not to serve such households. Most of El Alto (the focus of the contract's expansion efforts) is a low-consumption area, with the average household consuming about 10 cubic meters a month.
- *The unified water and sewerage tariff.* Under the unified tariff a household with a water connection but no sewerage connection will have the same monthly bill as a household with a sewerage connection and the same level

of water consumption. This setup will likely discourage the concessionaire from providing sewerage connections.¹

- *Connection fees.* The La Paz–El Alto contract sets maximum connection fees for water and sewerage that do not vary with the true cost of connection. The same connection fee applies for in-fill connections on existing lines and for connections in areas with no existing network. In this situation the concessionaire is likely to prefer making in-fill connections, where profit margins may be greater. The concession contract seeks to counteract this inclination by mandating that in-fill connections can account for no more than half of all new connections.

Tariff structures can have a positive effect if they facilitate serving the poor by ensuring that revenues cover the cost of these connections. Otherwise they can have a potentially negative effect if they create disincentives for service expansion—possibly blocking expansion of service to households that are willing to pay more for access to better water and sanitation services.

Prospects and problems

To date the La Paz–El Alto concessionaire has met its service expansion obligations. But certain features of the contract could make it unnecessarily difficult to achieve the broad objective of universal service—as well as unnecessarily painful for some households. For example, the contract mandates a uniform and costly level of service, the tariff provides disincentives to meet expansion goals, and exclusivity provisions have the potential to restrict water and sanitation options before in-house connections become available.

¹ After the first five years of the contract the concessionaire is required to propose separate water and sewerage tariffs, which may help remedy this problem.

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