

Précis

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Bolivia Water Management: A Tale of Three Cities

The urban share of Bolivia's population has doubled since the late 1970s. Providing adequate water and sanitation services has proved a major challenge. To understand the lessons of the Bolivian experience, the Operations Evaluation Department (OED) assessed the performance of water supply investments in three cities under the recently completed Major Cities Water and Sewerage Rehabilitation Project (1990–97), funded by the International Development Association (IDA). Covering 60 percent of Bolivia's urban population located in the three main cities—La Paz/El Alto, Santa Cruz de la Sierra, and Cochabamba—the project built on the experience of three earlier projects, as well as technical assistance to prepare and chart reform in the sector.

Project Goals

The Major Cities Water Supply and Sanitation Project aimed to provide service for all in the most efficient manner, and lay the foundation for sustainability. Major areas of focus were system expansion, improvement of operations and management, accelerated sector development through better policies and regulation, and improved national coordination.

How Did the Three Cities Fare?

Santa Cruz achieved more than planned under the project. Implementation, however, proved difficult in La Paz and Cochabamba. It delayed project completion by over two years. Political interference by the mayors—and the managers who were their political appointees—hindered decisionmaking on tariffs and contractual issues. These problems were

only addressed when the President of Bolivia decided to privatize the La Paz and Cochabamba water and sewerage utilities, a Bank condition for the two-year extension of the loan to 1997. Whereas privatization achieved positive results in La Paz, it did not in Cochabamba, where political interference continued.

Nationally, urbanites connected to potable water had grown in number from 26 to 76 percent by 1998, and for sewerage connections, from 30 to 32 percent. The higher coverage of water supply and sanitation services helps to explain the sharp reduction in infant mortality from 158 per 1,000 live births in 1977 to 66 in 1999. Over the same period the mortality rate for children under five years dropped from 180 to 96 per 1,000.

Water supply coverage over the period 1988–99 increased in La Paz and Santa



Cruz, while in Cochabamba it declined. Overall, however, 416,200 people obtained assured water supplies, while the Pampahasi-Ovejuyo pipeline created a supply link for another 192,000 in the southern zone of La Paz. Thus, La Paz's household water connections rose from 75 to 92 percent. Santa Cruz did even better, with household connections increasing from 70 to 94 percent. Conversely, Cochabamba's households connected to water fell from 70 to 60 percent, and only 47,520 of the 300,000 new connections planned were achieved. While water supply availability at about 4 hours a day remained unreliable in Cochabamba, the 24 hours a day service in Santa Cruz was maintained, and in La Paz availability increased from about 19 to 22.5 hours a day.

Sewage treatment remains a major challenge—even where sewerage installation and connection improved. In La Paz, household connections increased from 50 to 60 percent, and sewage treatment rose only from zero to 15 percent—a highly unsatisfactory condition. In Santa Cruz, connections and treatment each rose by about a third, to 40 and 48 percent respectively. And while Cochabamba continued to treat 80 percent of its sewage, the household connection rate fell by a tenth, to 53 percent.

What Caused the Sharply Differing Outcomes for the Three Cities?

The remarkable differences in utility performance among the three cities points to the complexity of institutional development in the water sector. The Bolivia experience confirms that privatization is not a panacea. It involves major economic and social risks where municipal governance is unsound and management skills are lacking.

Santa Cruz: A Cooperative Model

The Santa Cruz water utility is a consumer cooperative. It has been part of the city for more than 20 years, and continues to enjoy the reputation as one of the best-managed utilities in Latin America. Governed by a General Delegate Assembly, which appoints senior management, the cooperative's by-laws give the Supervisory Board veto rights over the Management Board, thus perpetuating stability. The Board and general manager (who had held the position for 16 years at the time of the OED evaluation) take justifiable pride in an efficient and transparent administration that appears to have virtually eliminated corruption. The recipient of two World Bank loans, the cooperative used Bank financing to great advantage through efficient implementation and operation aided by technical assistance to assist and train staff. It was the only sub-borrower to complete all project investments by the original closing date, which allowed the cooperative to gain access to additional Bank funds, sufficient to implement a larger program by the extended closing date. Impressive as the cooperative's achievements have been, their long-term sustainability is challenged by the continuing growth of Santa Cruz, and the need to reduce water-borne pollution to protect the aquifer.

La Paz/El Alto: From Municipal to Private Provider

The adjacent municipalities of La Paz and El Alto were the first to go through the new concession process. Invitations to bid were issued in April 1997, and the contract signed in July. The speed and successful implementation of the concession can be traced to several features. First, the selection process was simple and quick: the bidder that offered the greatest number of new connections in the predominantly poor El Alto area was awarded the contract. Second, the tariff during the first five years was specified in the contract, and charged in U.S. dollars converted to Bolivianos at the prevailing exchange rate each month, reducing the risk to the provider. Third, the pre-concession tariff was increased an average of 35 percent prior to the contractor's assumption of operation, and the increase designed so that about a third of consumers actually had their tariffs reduced. And fourth, during the transition from the public utility to the private Aguas de Illimani, all public-sector employees were retained. Over time the numbers were gradually reduced, resulting in substantially higher productivity, efficiency, and service. Despite these successes, La Paz still faces a considerable challenge in sewage treatment. Higher tariffs have reduced per capita consumption from 110 to 87 litres per person per day—undercutting income such that the concessionaire is considering a campaign to promote water use.

Cochabamba: Unsuccessful Privatization

The Cochabamba subproject and its municipal water utility faced the greatest difficulties during project implementation. The original objectives were to end the severe rationing of supplies in the area by drilling four deep wells and to rehabilitate the existing production facilities. French bilateral support was slated for groundwater studies and well drilling, and World Bank support was to be used for rehabilitation of the existing production system. But the wells were not drilled, mainly because of the opposition of farmers who thought that the new wells would jeopardize their irrigation water as the groundwater resources were being mined. At the same time, water losses in the Cochabamba system continued at a high 40 percent, because the Bank-financed project did not include funding to replace leaking pipe sections. Rationing, with continued use of unsafe supplies, stiffened consumer resistance to higher tariffs.

The Cochabamba utility was transformed from a municipal entity to a state corporation in mid-1997. Privatization was based on a concession contract, prepared with the Bank's assistance, to supply water from the 30-year old Corani hydroelectric reservoir. An alternative supply from the proposed Misicuni reservoir was considered but rejected by the Bank as being more than two and a half times more expensive than the \$70 million Corani project and taking twice as long to bring online—five to seven years. Subsequently, in late 1997 the bidding process was declared void by the Supreme Court in response to a legal

challenge filed by the Municipality of Cochabamba against the transformation of the municipal utility into a state corporation. In December 1997, the IDA credit expired, thus precluding use of Bank funds.

Later, a coalition of municipal and regional interests, opposed to basing future supplies on the Corani project, favored the alternative Misicuni project with its promise of more water, although at much higher cost. A contract was signed to build a tunnel to bring water from the Misicuni basin to Cochabamba. There was also a renewed effort to contract with a private owner to bring in the Misicuni water and operate the Cochabamba production and distribution systems, but no bids were received, possibly because the first attempt to bring in a private contractor had failed. Later, an unsolicited bid was received from a consortium, Aguas del Tunari, to negotiate a concession based on bringing in and treating water from the Misicuni project, and a 40-year contract was signed with the *Superintendencia* in September of 1999. The high cost of the Misicuni contract required an immediate tariff increase of 38 percent, with a subsequent increase of 20 percent after it came online. In return, Aguas del Tunari would invest US\$85 million in production and distribution facilities during the first five years of the contract and an additional US\$129 million over the life of the concession; provide 24-hour service from the second year on; and service the municipal utility's debt.

In November of 1999, Aguas del Tunari took over from the municipal utility, and the following January 1, increased the tariff to the authorized level, with an average increase of 35 percent. But to the consumers, it appeared that they were simply paying more for the same poor service. Opposition to the tariff increase, as well as to the national water legislation generally, quickly built, and rioting broke out and spread to other towns. This dangerous and deteriorating situation caused the government to roll back the tariff and cancel the concession. The municipal utility assumed operations once again. Its performance has been unsatisfactory.

Lessons Learned

- **Privatization is not a panacea.** A pragmatic approach tailored to local circumstances should be adopted for effective institutional development. Privatization does not insulate a utility from the consequences of poor project selection, political interference, weak management or lack of community support. The Bolivia experience demonstrates that cooperative solutions can be superior to either public or private approaches to utility management.
- **Private sector participation in the sector must demonstrate tangible benefits** to be a viable alternative to public sector management, as the aborted concession in Cochabamba demonstrates. In Cochabamba, the increase in tariffs before improvements in service quality triggered riots and the subsequent cancellation of the concession contract.
- **Sustainability of sector reforms requires long-term support.** Bolivia has made great strides through the adoption of a Water Supply and Sanitation Law and the establishment of a national regulatory system under the *Superintendencia de Saneamiento Básico*. However, in access to water and sewerage services, results have yet to materialize for large segments of the urban poor. Experience in Bolivia, as well as in Colombia and Perú, teaches that the mere establishment of a legislative and regulatory system is not sufficient to guarantee efficient and sustainable service for all segments of the population. Long-term involvement is needed to nurture institutional change, enhance utility management, and anchor reform in the community through public participation.



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