

MANAGEMENT OF BASIC DRINKING WATER AND SANITATION SERVICES BY A CO-OPERATIVE IN BOLIVIA

By Luis Fernando Yavari

THE CO-OPERATIVE MOVEMENT IN BOLIVIA

Since the Co-operatives Act of 1958, co-operatives have played an important role in delivering public services (from water and electricity to telecommunications) in Bolivia. According to this law, co-operatives should follow these principles: all members have equal rights and obligations; democratic principles are followed; every member has a vote; the goal of the co-operative is not profit but economic and social improvement.

Bolivia is politically divided into nine regions. In the regional capitals, drinking water and sanitation services are provided by co-operatives in 44% of the cases; in another 44% they are provided by public companies; and 12% is in private hands. Water services are governed by the 1999 Drinking Water and Sanitation Services Act, which was amended in 2000 after the water war of Cochabamba (see “Cochabamba: Public-popular partnership after the water war”). The new law enforces the following: universal access to services; the quality and continuity of basic services; efficiency in the use of resources; acknowledgement of the economic value of services (tariffs); sustainability of services; neutrality towards users; and protection of the environment.

This chapter will focus on the co-operative movement for services delivery, particularly one developed in the city of Santa Cruz de la Sierra (1,3 million inhabitants), the capital of the Santa Cruz region. During the 1960s, the first two co-opera-

tives were created in the city to provide telephone lines and electrification. In 1979, the Co-operative for Drinking Water and Sanitation Services (Co-operativa de los Servicios de Agua Potable y Alcantarillado Sanitario - SAGUAPAC) was established.

SANTA CRUZ: A CO-OPERATIVE PROVIDING DRINKING WATER AND SANITATION SERVICES

SAGUAPAC supplies drinking water and sanitation services in most of Santa Cruz de la Sierra. A few small operators, independent of SAGUAPAC, supply drinking water in the periphery of the city.

The water company has experienced three very different periods in its history. Until 1973 it was a public company and then until 1979 it was a semi-public utility. In 1979 it was formally established as a co-operative. The good results other co-operatives (telephones and electrification) were having influenced the community's choice of management for SAGUAPAC.

SAGUAPAC has a complex structure. The co-operative has a concession over a specific area divided into nine districts, each of which has a council whose task is to monitor members' concerns (every owner of a water connection is a member) and to satisfy their needs. Councillors serve a six-year term and a third of these councillors are renewed every two years. Each of the nine councils has three delegates at the Assembly of Delegates whose task is to approve decisions by the co-operative. The assembly also chooses nine members for the board and six members for the supervising council. The board is responsible for approving the budget and accounts, and for designing the policies of the company. The supervising council controls the board and does the external audits. Members of

both bodies serve for six-years and every two years a third of the members is also renewed.

Because SAGUAPAC is a co-operative, everyone with a water connection becomes a member and therefore a co-owner of the co-operative with a voice and voting rights. Besides the structures for participation, through which members can voice their needs and concerns, the utility carries out satisfaction polls twice a year to evaluate where water and sanitation services need to be improved.

The goal of a co-operative is the well being of its members, not profit. SAGUAPAC has a social tariff structure with different price levels for home consumption, commercial use, industrial use and special use (hospitals, public schools, government offices, etc). Tariffs are also dependent on consumption levels and increase every 15 cubic metres, so that those who consume more pay more per cubic metre than lower users. SAGUAPAC also runs promotion campaigns in poorer communities to encourage access to water services.

SAGUAPAC has a quality control system based on ISO 9001 and at present is being certified by the TÜV Rheinland of Germany. The co-operative also has optimal performance indicators by Latin American standards. For 2003 they are as follows:

Access to drinking water	96%
Access to sanitation	50%
Number of drinking water connections	123.597
Number of sanitation connections	64.096
Number of workers	387
Number of workers per 1000 connections	3,13
Average water tariff (US\$/m3)	0,31
Average sanitation tariff (US\$/m3)	0,29
Water loss	26%
Annual billing (US\$)	19,5
Collecting efficiency	94%

THE STRATEGIC DEVELOPMENT PLAN

SAGUAPAC has developed a Strategic Development Plan (Plan Estratégico de Desarrollo - PED) for the concession period of 40 years up to 2039. This plan has identified the investment that needs to be made and the estimated cost, which for the 40-year period is US\$559 million. The largest amounts will be for sanitation infrastructure (\$309 million) and water networks (\$118 million).

Net income has also been analysed and compared with needed investment and operational costs. For an initial period there is a gap in the budget (alternatives to cover this gap are explored below), but for the period after that the company will be financially self-sufficient.

Closing year	Multilateral body	Name of the programme	Amount of the project (US\$ million)	Amount of the loan (US\$ million)	Loan number
1986	World Bank	Water and Sanitation Programme in	17,0	9,0	948-BO
1997	World Bank	Santa Cruz Programme for the Rehabilitation of Water and Sanitation in the main cities.	13,3	5,4	2187-BO
2001	IDB	Programme for Basic Urban Water and Sanitation (PROSUB)	30,5	20,0	987/SF-BO

SAGUAPAC has carried out a number of projects funded by multilateral institutions such as the Inter-American Development Bank (IDB) and the World Bank. The table on the left shows a summary of those projects.

In all cases, SAGUAPAC completed the projects in less time than scheduled and with significant savings, with the result that it could tackle more work. SAGUAPAC is also complying with loan repayments.

MAIN CHALLENGES AHEAD

The main concerns for the co-operative are summarised as follows:

- availability of water resources;
- low access to sanitation;
- the need for financial resources to carry out the Strategic Plan for Development;
- the small operators at the periphery of the city.

AVAILABILITY OF WATER RESOURCES

Currently the drinking water supply system has one only source and that is underground water. SAGUAPAC exploits the aquifers with 47 wells in four fields (with an annual production, in 2003, of 45 million cubic metres). According to the studies undertaken, and taking into account the planned exploitation and replenishment of these underground aquifers, it is estimated that by the year 2017 it will be necessary to find an additional water source. By this date, the underground reserves will not be enough to fulfill the expected demand but SAGUAPAC is exploring alternative sources to find a solution well before 2017.

LOW ACCESS TO SANITATION

At present, only 50% of the population has access to sanitation services, but the population growth index compared to the sanitation service growth shows that without new investments the access index will be even lower. The city has an annual population growth of six percent, which has been taken into account in the financial plan allocating the biggest amount to sanitation infrastructure. An additional, worrying factor is that underground water is the only source of drinking water. Expanding the sanitation network is needed to avoid contamination of the underground water. At present, wastewater not collected in the sanitation network goes into septic tanks, which directly pollute underground waters.

MOBILISING FINANCIAL RESOURCES

In the early years of the plan, the gap between the net income on one side and the investments and operational costs on the other shows a need for some US\$50 million. A number of alternatives have been explored: (i) multilateral loans; (ii) commercial loans; (iii) strategic partnership under the operator modality; (iv) strategic partnership under the non-operator modality; (v) sub-concession or BOT contract. The preferred alternatives for SAGUAPAC are in this order (1) unilateral loan, (2) strategic partnership non-operator and (3) commercial loan and BOT.

SAGUAPAC has taken some steps towards securing multilateral loans. In loan negotiations with multilateral agencies, the government is the party that guarantees the deal, but the one who pays the interest is SAGUAPAC. However, the country's limited debt capacity is making it very difficult to access these loans.

THE SMALL OPERATORS AT THE PERIPHERY OF THE CITY

These small systems of drinking water supply, run by eight operators independent of SAGUAPAC, have their origins in the uncontrolled growth of the city. The city's expansion featured satellite areas in which independent water systems were built, as the existing infrastructure was not able to support them. After some time, these systems were consolidated and they now supply the periphery of the city, but the quality of the service is bad and there is no guarantee of the sustainability of these companies. Furthermore, no effective action has been taken by the government to reduce the number of operators and to avoid water services of different quality. The government body in charge of drinking water and sanitation services, (Superintendencia de Saneamiento Básico (SISAB)), should play a more effective role.

CONCLUSIONS

Analysing the performance and results of SAGUAPAC, it can be concluded that this company provides drinking water and sanitation services of excellent quality. Its independent, co-operative status and members' participation has benefited the utility in many ways. It has avoided political intervention, something that allowed the company to give continuity to its plans, and it is based on the democratic participation of its members. Its economic and financial situation, given the growth of Santa Cruz de la Sierra, is forcing SAGUAPAC to look for an injection of economic resources for the initial years of its strategic plan of development, so it can guarantee its sustainability. For that it needs state guarantees for its financial operations, although its financial obligations will be covered by user tariffs. An important element is that, according to its co-

operative philosophy, the main goal of SAGUAPAC is the well-being of its members and not making a profit.

SAGUAPAC's model is an alternative option to the public and the private model, and one which it was invited to present at the World Bank's 2003 Water Week. Inspired by SAGUAPAC, Cobija, Trinidad, Tarija and other cities in Bolivia have also established water delivery co-operatives. Although these cities have not yet reached the same levels of efficiency and sustainability as those of Santa Cruz, it is clear that the model can be replicated.

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