

Peri-urban Water Cooperatives Santa Cruz de la Sierra, Bolivia

Norwegian Participatory Development Fund used for study aimed at improving the cooperative model for water provision in low income, under serviced areas.

SANTA CRUZ DE LA SIERRA AND THE PERI-URBAN WATER COOPERATIVES

Santa Cruz is the largest city in Bolivia with a population of 951,868 residents¹. The city is organized in a series of approximately nine concentric 'rings', and the highest population growth rate (6.4%) is occurring in the outer five rings of the city, where low income residents primarily reside.

In the 1970's, the first peri-urban water cooperatives were formed as initiatives among neighbors to provide for their own needs in the absence of the municipality's assistance. In early 1998, eight of the cooperatives that operate in the peri-urban areas of Santa Cruz formed the Santa Cruz Water and Sewerage Cooperative Association (ACSAACRUZ).

Since their creation, these cooperatives have grown rapidly in size and today approximately 25% (approximately 250,000 residents) of the population of Santa Cruz receives water services from the cooperatives of ACSAACRUZ. At the present time, these cooperatives provide water services but do not offer sewerage services or other sanitation options to members.

Photo: Lauren Chung



Installing pipeline network in one of the cooperative neighborhoods.

What are cooperatives?

A cooperative can be defined as a society of people that organize themselves to provide services to the members in the society. Each member has one vote in decisions taken concerning the cooperative, regardless of the amount of money invested or activities completed by the member². An overseeing board of directors is composed of two committees: the administrative committee and the vigilance committee, the later responsible for ensuring transparency within the organization, particularly in financial matters. These two committees do not receive financial compensation for their work in the cooperatives. Education, health, social and/or debt collection subcommittees can also form a part of the cooperative's operations. The management style of cooperatives is participatory and under Bolivian law, the cooperatives possess legal status that is recognized by the National Institute of Cooperatives (INALCO).

Are cooperatives an effective method to provide water services in low income, under serviced areas? The Water and Sanitation Program completed a study to address this question, with the collaboration of the peri-urban water cooperatives of ACSAACRUZ. This study was completed with the participation and financial contribution of ACSAACRUZ as well as financing from the Norwegian Participatory Development Fund, which supports learning on innovative, participatory initiatives. The study was conducted over a period of two months in 1998 and represents a 'photograph' of the actual situation of the peri-urban cooperatives involved in ACSAACRUZ.

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FINDINGS OF THE STUDY

The cooperatives have resulted out of initiatives by the urban poor to obtain water service in the absence of support from the government, NGOs, or other institutions. They have been largely successful in their efforts considering that the cooperatives have grown dramatically and now provide water to approximately 25% of the population of Santa Cruz and 47% of the urban poor³.

However, the cooperatives studied have not adjusted their management structure to handle the dramatic growth in the number of members. Currently they suffer from some of the same problems that many public utilities face: inefficient operation, weak commercial and financial management, poor maintenance, and lax billing procedures. Specific aspects are mentioned below.

1. Financial Management and Tariffs

The cooperatives of ACSAACRUZ have suffered from weak past financial management practices and lack a system to strictly monitor revenue generation and expenses. The financial situation of the cooperatives is very similar, where most demonstrate a fragile economic state in which they cannot cover their operating costs or generate income for new investments.

To become a member of the cooperative, residents pay an initial fee (usually in installments) and monthly water tariffs. The principal problem with the tariffs charged by the cooperatives is that they do not have a relation with operating costs and are insufficient to cover needs for additional investments. Most households do not have water meters and thus fixed monthly tariffs are charged based on an assumption of what members can afford to pay. However, fixed monthly tariffs do not ensure fair payment practices or promote water conservation.

2. Institutional Framework

Governing authorities in Santa Cruz have had virtually no direct involvement in the provision of water and sanitation services in the city. Since their initial conception in the 1970's, the cooperatives have functioned as independent entities and have received little support from the municipality or private sector. This lack of collaboration has also contributed to the significant management problems that the cooperatives now face. However, the recent

Cooperatives of ACSSACRUZ:

COPAGUAS	Water	Cooperative "Primero de Mayo"
COPAPI	Water	Cooperative "Pampa de la Isla"
COPLAN	Water	Cooperative "Plan Tres Mil"
COSCHAC	Water	Cooperative "Los Chacos"
COSERPAC	Water	Cooperative "Juan Pablo II"
COSPAIL	Water	Cooperative "Andrés Ibañez"
COSPHUL	Water	Cooperative "Humberto Leigue"
SAJUBA	Water	Cooperative "San Juan Bautista"

formation of the Bolivian National Regulatory Agency of Water (Superintendencia de Aguas) and its new requirements for the cooperatives is an indication that regulation will increase in the future.

3. Planning

A lack of strategic planning has limited the cooperatives' capacity to manage the dramatic increase in number of cooperative members since the 1970's. The systems have not been designed for the current number of members and methods to respond to the constant demand for new household water connections simply involve the random installation of piping needed without the appropriate hydraulic design considerations.

The lack of staff retention is also an aspect that is impacting the cooperatives' successful management. The criteria for hiring and firing of personal in all levels of the cooperatives of ACSAACRUZ is currently unstandardized. This is often attributed to the political nature of some positions and absence of guidelines regarding employment procedures. When a new governing board is elected, an entire change in staff often occurs regardless of their qualifications. However, the importance of maintaining skilled employees that have met qualification standards is an aspect that is now being given more importance by administrative boards.

4. Participatory Aspects

Participation of members

The participation of members in decision-making processes and other activities is an important component of the cooperative management style. However, participation of members in cooperative activities has decreased significantly over the years as the cooperatives have expanded, and the number of members in the cooperatives seems to affect the

level of participation of members in cooperative activities. The smaller cooperatives of ACSAACRUZ generally have more members who are willing to participate in activities than the larger cooperatives.

Involvement of women

The involvement of women in the cooperatives of ACSAACRUZ is noteworthy and has exceeded the level of representation in many other organizations in Bolivia. The study revealed that both women and men community members considered women to be more trustworthy than men in handling financial matters and maintaining financial transparency in the cooperative. Although cultural barriers are still apparent, women have held key positions as presidents, and members of the administration and vigilance committees. As well, women were heavily involved in the manual labor requirements during the initial installation of the water systems.

"Women were the first people to dig, meaning that if there are no men to dig we have to dig, and that was the way it was."
-woman community member, COPAPI

The Vigilance Committee

The vigilance committees in the cooperatives have not functioned as effectively as possible. However this committee is critical to maintaining professional and ethical standards, identifying conflicts of interests, and identifying future leaders for the cooperatives. The vigilance committees play a largely superficial role and the positions are often very political in nature.

5. Water Resources and Quality Management

The exploitation of wells in Santa Cruz is currently unregulated. A key problem that has affected the technical operation of the water systems is the installation of wells in the absence of hydrogeological studies. There are also concerns regarding the contamination of aquifers from rudimentary on-site latrines and the effects of uncontrolled extraction of water from multiple wells on water resources. The scope of this study did not allow for in-depth studies on the affect of unregulated well installation, nor the extent of contamination from latrines into water wells. However, these aspects definitely merit further investigation as soon as possible in the near future.

The cooperatives studied recognize the importance of monitoring water quality. A regular water quality monitoring program agreed upon with an overseeing governing agency does not exist at the

present time, but is expected to be implemented once the National Regulatory Agency of Water (Superintendencia de Aguas) determines concession rights in the areas where the cooperatives are working. Water monitoring that is completed by cooperatives is conducted randomly and chlorination completed at some pump locations is not consistent enough to be considered reliable to assure water disinfection. The majority of residents are consuming water directly from the tap, but have no awareness of the actual quality of water they are drinking.

"In the morning the water comes out a little white with an odor. I believe that it's the chlorine that they add and the other time I opened my tap and the water came out in a black lump...I don't know what it would be."

-woman cooperative member, Andrés Ibañez

6. Lack of Sanitation Services

At the present time, sanitation services are virtually non-existent in most of the peri-urban areas of Santa Cruz. Various small sanitation projects have been implemented, but sanitation services for the majority of the population outside of the fourth ring are inadequate or non-existent. Only 1% of homes are serviced by a conventional sanitation system, and the remainder use latrines (often poorly constructed) or have no specific system at all. The cost of expanding the conventional sewage system in Santa Cruz is extremely high principally due to the high water table, flat topography, low population density, and expansive lateral growth of the city. ACSAACRUZ does not offer sewerage services or other sanitation options to members.

THE FUTURE OF THE COOPERATIVES

This short study generated the following suggestions to improve the future management of the cooperatives:

- The peri-urban cooperatives of Santa Cruz should continue to operate because they provide an important service and members have indicated their overall satisfaction with the service they receive. The peri-urban cooperatives were able to organize themselves based solely on their own efforts and therefore, with this commitment to their mission, they should be able to improve their management with the support and training from other institutions. The most pressing factor affecting the cooperatives is whether they can



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comply with recent requirements set forth by the National Regulatory Agency of Water (Superintendencia de Aguas) for institutions wishing to gain concession rights for water provision. If the cooperatives cannot meet these requirements, the National Regulatory Agency will intervene.

- Cooperatives should be considered as feasible arrangements because of the community participation component, opportunities for community capacity building, and the excellent focal point cooperatives provide for health and sanitary education programs.

In order to improve the sustainability of services, the cooperatives should complete the following important reforms:

Improve financial sustainability:

- Structure water tariffs based on calculations of the 'real' cost of providing water services.
- Implement sound financial management practices, including internal controls on the flow of income and expenses, and procedures to ensure that residents pay water tariffs in a timely manner.

Improve technical management:

- Shift staff composition by decreasing the number of administrative positions, thereby freeing financial resources to contract civil engineers who have the skills to properly design water systems, determine modifications needed, and accurately complete expansions of the systems.
- Analyze the effects of water extraction from installed wells on groundwater resources, complete regular water quality monitoring tests and publish results to the public. These aspects should be completed according to standards to

be outlined by the National Regulatory Board of Water (Superintendencia de Aguas) once concession rights are granted.

Improve human resource management:

- Adhere to formalized guidelines for hiring and firing staff based on employee qualifications rather than political circumstances.
- Designate funds for regular training courses for all levels of staff and include training activities in formalized work plans.

Consider partnerships with the private sector:

- The peri-urban cooperatives should investigate the possibility of developing partnerships with the private sector that would bring professional skills in water utility management.
- Partnerships will offer new avenues for the investment needed for expansion and adjustments in existing systems, while capitalizing on the familiarity that the cooperatives have of their members, community groups, and neighborhood authorities. These partnerships will also allow for direct community participation, community training, and cooperative-managed health and sanitary education programs.
- Partnerships can also facilitate investment for sanitation projects. The Program is currently executing the Peri-urban Water and Sanitation Initiative in El Alto in collaboration with the private company Aguas del Illimani. This project involves the use of the condominial sewerage system which reduces costs up to 70%. Future sanitation projects in Santa Cruz will also be able to benefit from lessons generated in the El Alto project on private sector participation and alternative sanitation technologies which lower costs for the urban poor.

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For more information about the peri-urban cooperative study or to receive a copy of the full report, please contact the Water and Sanitation Program.

1. Bolivian National Institute of Statistics (INE). Projected population for 1998 from 1992 census.
2. Dirección Nacional de Informaciones de la Presidencia de la República. Ley General de Sociedades Cooperativas. Bolivia. 1958
3. Diagnóstico Urbano Rápido Participativo de las condiciones de Agua y Saneamiento de Areas Periurbanas de Santa Cruz de la Sierra - Bolivia. Febrero 1999.