

CHAPTER THREE- Research Context

Introduction

This chapter describes the national context for WUSC's work in Peru by focusing on the history of the devolution of the provision of water services to a local level and the history of water management in Peru. Additionally, it examines how the relationships between WUSC and the other stakeholders have developed and how collaboration has taken place in the two case study locations.

Peruvian Water and Sanitation Services

Until 1990 urban water and sanitation services in Peru were administered by the central government through the regional offices of National Service of Potable Water and Sewage (SENAPA). In rural areas, the national government's Health Ministry (MINSA) was responsible for water and sanitation services. Between 1990 and 1993, responsibility for water and sanitation services was devolved to the level of municipal governments. At this point, the municipalities became the only entities that were legally responsible for water and sanitation services.

Most commonly, they managed these services indirectly through Municipal Drinking Water and Sewage Companies (abbreviated in Spanish as EMAPA or EPS). In rural areas, water service providers were embedded within the municipal structure in an office called the Municipal Unit, or managed by the users themselves in water groups, committees or users associations. However, training was not provided to the municipalities or water users on how to effectively manage these services and the public's role was generally to simply pay for the

service rather than having more control over the management of the system (Bodero 2003; also see Table 2.3).

In 1992, SENAPA was dissolved and replaced with the National Superintendent of Sanitary Services (SUNASS) in order to regulate the municipal water companies, provide a forum for the protection of users' rights, and environmental protection. In 1994, MINSA was given the responsibility of verifying and regulating water quality around the country. Parallel to this devolution process, a privatization program was started to transfer all state owned companies to the private sector by 1995.

Between 1991 and 1997, over 100 state-owned enterprises were sold to private investors (Manzetti 1999). Privatization of the water sector was also scheduled and though bids were collected, plans for privatization were postponed indefinitely in 1997. In 1992, 63 percent of the public polled were in favor of privatization of the water sector but by 1997, 78 percent were opposed because of their disappointing experiences with other privatized industries, combined with a lack of confidence in Peru's Fujimori government (Shirley 2000). As Arce (2005) and Schamis (1999) point out, the impacts of privatization are not politically neutral; as most gains are concentrated in the elite classes with business interests and the losses are born by the poorer classes. By 1998, almost all plans for additional privatization had stalled.

Since 2003, the National Program for Rural Water and Sanitation (PRONASAR) has been charged with coordinating rural water service. During this same period, a third level of government, the regional has become more prominent and there has been a new wave of decentralization policies that have sought to make urban service providers independent of local municipalities. The reason for decoupling the service providers from the municipalities

is that in practice, “municipal operators have not demonstrated, in the majority of cases, their ability to successfully manage services nor to directly finance necessary investments” (Bordero 2003; 9). More than half of municipal water companies are facing severe economic crises that compromise their ability to guarantee adequate water quality and service coverage. In 2001 it was estimated that 41 municipal water companies collectively owed US \$770 million in debts and that they would need at least 44 years to repay this sum (Bordero 2003).

The National Registry of Municipalities has documented the limited capacity of Peruvian municipalities to plan and manage local development processes. In 2001, 1,620 provincial and district municipalities had 62,000 employees on payroll of which 23 percent were female. Over 40 percent of municipalities surveyed did not gather basic data on their populations nor did they have any type of municipal planning processes. Additionally, the Registry showed that just 26 percent of municipal workers knew how to operate computers and that only 10 percent of municipal offices had Internet access (INEI 2004).

Because the municipalities own the local water companies, I was often told in interviews that water is managed as a political good, with improved service promised to those neighborhoods that vote for the winning party and jobs in the water company given to supporters. The mayors and town council members of the towns that own the company, appoint a board of directors to govern it. The criteria for joining the board are that members have some experience running any type of company and retain good standing with the mayor. These directors select the general manager and many of the other water company employees as well. One WUSC staff person stated that, “in Peru there is no stable civil service. Since all jobs are given as political favors, there really is no such thing as local government capacity.” In light of the political nature of local water management, the two

study locations remain unnamed in this thesis in order to protect the confidentiality of all participants.

One interesting case study (Castillo & Ruiz 2005) asked the question: why do municipally owned water companies seem to be so unsustainable while other municipal enterprises, such as the municipal savings and loan banks, seem to be thriving? The study points to the fact when the municipal banks were formed in the 1980s; they were created as independent municipal companies with autonomy over their administrative and financial matters. The Supreme Court ruling that governs the municipal banks expressly prohibits the participation of the mayor and council members in the board of directors of the bank and also establishes a term period of two years that cannot be truncated by changes in the local government.

The municipal bank highlighted in the study had seven members on its board of directors; three of them were municipal agents, while the other members were representatives from the chamber of commerce, the workers union, the National Bank and the Catholic Church. The bank employees were selected based on demonstrated competence in their respective areas and the Ministry of Economy and Finance provided incentive funds for municipal banks that met or exceeded their yearly targets. This legal and regulatory structure seems to have made all the difference between municipal companies like the savings and loan banks that thrive and those like the water companies that struggle.

In light of the current politically charged governance regime in municipal water companies, many people have placed their hopes on increased technification of management and a greater participation of the private sector through concessions or privatization. During 2005, several newspapers published articles criticizing SEDAPAL, the state-owned water company

of Lima. This was seen by many people as a thinly veiled attempt to renew the push for privatization. Proponents of privatization compared the number of people without sustainable water service in the peri-urban areas of Lima with low levels of telephone coverage before the privatization of the national phone company.

However, opponents of privatization argue that the private companies are most interested in the core of Lima, which is highly profitable, and that the investments private companies would make to the peri-urban areas would be minimal. Additionally, access to clean water is usually considered a basic human right and cannot be treated like a technical concern such as telephone coverage. To compound the problems, the government bodies that have been charged with regulating private participation are weak and inexperienced with this type of complexity (Bordero 2001).

Peru has signed and ratified almost all of the international treaties designed to promote sustainable natural resource use and avoid negative environmental impacts. The national government has put in place a series of mechanisms and programs in order to implement the agreements such as institutional strengthening, the participation of citizen groups, the incorporation of environmental indicators into national accounting procedures, and the transfer of technology to areas with strong natural resources bases. However, the capacity to implement these programs and concrete mechanisms to control actual behaviors remain limited (UNDP 2004).

In 2005 the Peruvian water sector consisted of a complex system involving the national government, municipal governments, user groups, technical assistance providers, the private sector, and national and international financial institutions. Unfortunately, there has been

poor coordination and little information sharing between these actors. This means that it is difficult for any one actor to know what is actually occurring in practice; there is a weak political will to carry out government policies; little space for effective support from technical experts; limited action protecting water quality and the environment; poor accountability for the quality of services provided; and limited protection of users rights (Agencia Canadiense Para el Desarrollo 2003). In light of this, Bordero (2001: 29) states:

It's erroneous to think that only the water service providers need to change. What is needed is to organize the sector with a vision, mission, rules, policies, and strategies...therefore, local and regional governments as well as users have to be recognized as important actors in this change process.

First Case Study Site: Urban Location

This case study took place in a town of about 110,000 inhabitants on the coast of Peru in the province of Lima. According to the most recent 1993 census, 88 percent of the population in the province had completed elementary school, and only four percent of the population over 15 years of age was considered illiterate. Seventy-one percent of the population was employed in the service sector and twice as many women were employed as men (INEI 1993).

Sixty-six percent of the urban population in the province had access to piped water for indoor household use, while in the rural areas more than 50 percent of the population used untreated river, spring or irrigation water. Sixty percent of the total population of the province had indoor toilets and 13 percent had no waste disposal system at all. The province of Lima is divided into ten counties and in the county where the case study was conducted, 44 percent of the population had indoor household water connections, while 40 percent had indoor toilets and 35 percent had no waste disposal system at all (INEI 1993)

The municipality's water and sanitation company serves one main town and two smaller nearby satellite towns; this study focuses on the main town. The company is structured hierarchically with a board of directors, a general manager, and eight main departments. Of those departments, the ones that have the most direct contact with the public are the Commercial Office, described by one manager as, "the nexus between the public and the company" and the Institutional Image Office, which performs public relations duties through the press. The first "general shared responsibility" for all employees listed in the company's Organizational Manual (EPS 2003, 9) is to "recognize that our clients are the focus of our organization, they are our reason for being and are at the core of all of our attention and effort."

Figure 3.1 View of the City



In December of 2002, water was distributed by the municipal water company to the general population of the city through 18,084 water connections for an average of eight hours a day. At this time about 57 percent of the water that was pumped into the pipes for distribution was unaccounted for. It was estimated that almost half was lost because of the poor state of the water pipes, while in other cases the end users simply did not pay for their water service or

the water was unknowingly distributed through clandestine connections that could not be billed (SUM 2005a).

The income that the company received at this time only covered operating costs; therefore there were no plans for investments in the system to repair leaks or to encourage water conservation on the part of the general public. Additionally, demand for water was rising as the population of the city continued to grow and new immigrants from rural areas used an increasing amount of water as they became accustomed to having it in their homes. Because of the large percentage of water that was unaccounted for, the water company made the decision to install household water meters in order to charge people for the amount of water they used rather than the flat rate that had been in place up to this time.

The mass media reported that some of the household water meters that had been installed in Lima came from an unreliable manufacturer and had to be replaced. Many people had heard rumors that the local water company had bought these meters cheaply from Lima and that they were faulty and measured air passing through the pipes resulting in elevated water bills. One water company manager said, “People did not want the meters because they thought they would pay more. They asked themselves, ‘why would the water company want us to pay less?’”

The press helped to fuel fears of increased rates and some neighborhoods began to organize themselves to meet the meter installation teams with rocks and machetes. At this time, the main source of communication between the water users and the water company was the company’s Institutional Image Office. Their strategy was to monitor the press on a daily basis and to respond to each incident individually.

Within this context, in November 2000, WUSC began to work with the water company with three teams: engineering, social and administrative. The Engineering Team was led by an engineer, the Social Team by a trainer and the Management Team by an economist. The teams began by carrying out a series of diagnostics and surveys to determine the state of the water pipes, the administrative system and the attitude of the general public towards the water company. One staff member in Lima commented that, “municipalities do not know what their costs are, they just pump as much water into the system as they can.” Based on the studies, WUSC made the decision to divide the city into sectors and work intensively in one sector at a time.

In the first phase, the Engineering Team made plans to assign one well exclusively to supply water the first sector alone and to close any pipes that connected the first sector with the others. This would create the technical conditions necessary for the reliable functioning of the water meters. Meanwhile, the Management Team began updating each users’ information in the company database, made an inventory of clandestine connections and then began a campaign to have users pay old debts and legalize their water connections. Later the Management Team ensured compliance with the laws regarding public notification prior to the installation of water meters and the phasing in of the new billing structure based on the meters.

The Social Team found that in December 2002, the approval rating for the water company in the first sector was 11 percent (SUM 2005a). Project documents reported, “the users’ resistance to changing their attitudes and accepting some of the projects promoted by the water company [were] due mostly to distrust and skepticism that the water company [would]

follow through and achieve any improvement in the service” (SUM 2003). The Social Team began an intensive user education campaign focused on neighborhood groups, school and the general public around the issues of the rights and responsibilities of the water company and the users, the water meters, and water conservation (see Figure 3.2).

Figure 3.2 Member of Social Team Speaking to a Water User



Based on a user satisfaction survey, a series of brochures were designed with a communication consultant in Lima. Once drafted, there was no consultation with users as to the content or design. The brochures were delivered as support to face-to-face meetings with neighborhood groups, through house-to-house visits, and attached to monthly water bills. Some of the educational materials were presented on the radio and the public was also kept up to date on the progress of construction over the radio. This program ran for three months in 2003 in the first sector of the city and for one year in a smaller nearby city that was served by the same water company (SUM 2003).

The Social Team also began to accompany members from other teams into the field when they had contact with the public, especially when the efforts to install water meters were renewed. Members of the Social Team also accompanied a plumber to people’s homes before

their water meters were installed in order to check over their connections for any problems that could result in elevated meter readings. If leaks were found, the person was told which parts to purchase and the plumber would arrange to come at another time and install the new parts at no cost.

The Social Team also worked with the 1,185 students of the four schools in the first sector in 2003 and 2004. The sciences and environment teachers attended educational presentations about the state of fresh water globally and were given coloring books and other educational materials they could integrate into their curriculum. The schools were invited to participate in a series of events and contests leading up to a parade for InterAmerican Water Day, celebrated in October 2004. Additionally, some teachers arranged fieldtrips for their students to visit the water company and see it in operation.

By the end of 2004, following the implementation of these activities, 76 percent of the users in the first sector stated they were satisfied with the water service. They received increased water pressure and number of hours of service, to 20 hours per day. The percentage of connections with water meters has gone from 40 to 85 percent and 200 clandestine connections were eliminated. Prior to WUSC's intervention in the sector, 64 percent of water was not paid for, while by in December 2004 that had decreased to 54 percent. In the city as a whole, 29 percent of the connections had water meters in late 2002 and by December 2004, 35 percent had water meters. The overall amount of unaccounted for water in the city decreased slightly from 57 to 56 percent (SUM 2005a).

At the time of this research in 2005, the Social Team was headed up by the prior water company counterpart and two new water company counterparts had been assigned to work

on the team to educate water users and the schools in the next sector. The Social Team was in the process of filming and editing a socio-drama about the water meters and water conservation that would be shown to parents groups at the schools in the second sector.

Second Case Study Site: Rural Location

This case study took place at 2,964 meters above sea level in a rural district in the province of Ancash. According to the 1993 national census, 60 percent of people in the province have finished elementary school and 21 percent are illiterate. Three times as many women work as men and 44 percent of employment occurs in the agricultural sector and 37 percent in the service sector (INEI 1993).

The district where this case study took place is located between two major mountain ranges and has a population of 12,565 people, with 2,974 people in the district capital and 9,591 people in surrounding rural communities. In the district, only 39 percent of the population has completed elementary school and 36 percent of the population is illiterate. Further more, only seven percent of women have finished elementary school and 51 percent of women are illiterate. The majority of the populations speak both Spanish and Quechua, but the language used most frequently in the rural areas is Quechua. Sixty-nine percent of employment occurs in the agricultural sector. However, seemingly contradictorily, 77 percent of children in first grade suffer from chronic malnutrition. In addition, 86 percent of homes in the area do not have sanitation service (INEI 1993).

Figure 3.3 District Capital and Surrounding Countryside



Cities between 2,000 and 30,000 inhabitants have recently been redefined by the Peruvian Government as “small cities,” in recognition of the fact that they have traditionally been under-funded in favor of larger urban centers or remote rural areas with populations under 2,000 people that benefit from PRONASAR projects. At the national level the water systems of small cities are characterized by direct municipal ownership that is overly influenced by local politics and interest groups. They tend to have a poor quality service due to deteriorating infrastructure and limited administrative, financial, and technical capacity (Bordero 2003; SUM 2004c).

Rural Communities

In 2001, WUSC began working first directly with five rural communities in the jurisdiction of the district capital and by 2004 they were working in 14 of the 28 rural communities in the area. An international mining company working in the area first invited WUSC to work in the district as part of its efforts to “improve the living conditions in communities near its mining operations” especially in the areas of basic health and economic activities (SUM 2005b; 14).

After a series of talks with the municipality, WUSC provided information to local authorities and leaders of rural communities, members of rural water groups explaining what their project “Improvement of Potable Water and Sewage in Rural Areas” would offer. The purpose of the project in the rural areas was to improve consistent maintenance and operation of water services through sound administration practices, and also to improve hygiene practices and water conservation behavior on the part of the public.

Members of the rural communities then talked over the project and decided if they would submit a proposal to the municipality to participate. Later a representative of WUSC visited each of the communities that had applied and interviewed community leaders to assess their commitment to working together. Each community was given a rating based on the interviews and ten different selection criteria; those that received the most points were selected.

WUSC began working first with five rural communities in 2001, an additional five in 2003 and four more in 2004. WUSC assigned three teams to work with the chosen communities: administration, technical, and sanitary training. The same economist who had worked previously in the first study site led the Management Team, an engineer headed the Engineering Team, and a sociologist led the Sanitary Training Team. As in the first case study, they began their work with a series of diagnostic and training workshops in different areas before beginning any infrastructure work.

Out of the fourteen communities that worked with WUSC, two of them had their own municipal delegates, and public transportation. Of these two communities one had 24-hour electricity service and one had telephone service. Of the other communities, only one had

electricity occasionally and one other community had a phone. All of the communities were located on foot paths various distances from the main roads, and it took between thirty minutes to three hours by foot to reach the district capital from the communities. The majority of rural communities in the area had water systems that had been built up to 30 years earlier for them by a government program or by international NGOs. In many cases, the pipes and catchment systems had deteriorated since they were first installed.

In the past, a condition for the construction of infrastructure was often the creation of a traditional water user group known as JASS (Administrative Group for Sanitation Services). These groups were governed by several laws and government resolutions, but nevertheless were largely seen as informal, since they were usually organized only to gain access to water service, and not intended to provide long-term management of the service. The members of the JASS were often not elected, were given minimal training, and directors did not know how to perform their roles, keep records of meetings, or work with bylaws. Each time a new board of directors came into power, they essentially had to begin from zero.

As a consequence of their lack of management capacity and limited ability to fix the pipes when something went wrong, the JASS had limited public legitimacy. Between 40-60 percent of users did not pay monthly service fees, which averaged 50 centimos (approximately US\$ 0.15) per house as there were no receipts given and little record keeping in general so they did not know where their money was being spent. Additionally, the water group had no policies or sanctions at their disposal to encourage people to look after the water system or to pay their fees.

Members of the JASS often went to the municipality to ask for chlorine for disinfection and money to repair their systems even though they were supposed to be collecting money from their users. By law, the municipality was responsible for supervising and assisting the rural water groups. However, it did not have any employees dedicated to water and always gave priority to urban water needs. This explains why the municipality wanted WUSC to help improve their administration and improve coordination with the population in order to improve rural water services. However, there was a large measure of distrust and fear on the part of the population that this project was a ploy to privatize the water services.

Many people in both rural and urban areas believed that improvements in water and sanitation could only happen through more infrastructure projects. They believed that water was scarce because some areas had a few as four hours of service per day. There were disputes between people who were closer to the source and used more water and those at the end of the line who frequently did without. However, the diagnostics done by the Engineering Team revealed that up to 94 percent of the water in some communities was lost through infrastructure problems, watering gardens, and leaving household taps open. In some communities, only a little more than half of the homes had water connections and in some cases there was not a single washroom or outhouse.

The district has five Ministry of Health clinics, with the main one in the district capital and four in surrounding rural communities. Additional rural communities have trained health promoters who make house visits to pregnant women, check on children's growth and give talks on family planning and preventative medicine. The Ministry of Health reported that the main illnesses they treated in the district were diarrhea, respiratory infections and skin problems, all of which can be linked to sanitation issues. However, community members

often treated themselves with local herbs before going to the health post, making record keeping difficult.

During the diagnostics, it was found that the general population did not know of the connection between hygiene and health and many people believed that diarrhea was caused by cold winds. Community members said that since their ancestors had always gone to the bathroom outdoors and kept animals in or near their homes and they had been healthy, that there was no need to change their behaviors. Women were somewhat more concerned about where to go to the washroom since they stayed closer to the house while the men usually went when they were out working in the fields.

The Sanitary Training Team first selected and trained women to be voluntary health promoters in each community. Then, based on the World Health Organization's PHAST (participatory hygiene and sanitation transformation) methodology, they began to train the population on hygiene issues such as the proper disposal of human waste, hand washing, water storage, and household water chlorination. They also organized community workdays to clean up garbage. After the trainings they did household visits to observe actual behavior and verify any changes, as depicted in Figure 3.4.

Figure 3.4 Member of Sanitary Training Team Completing Follow-up Survey



The washrooms in rural schools were in poor condition or non-existent, so both the Engineering Team and the Sanitary Education Teams worked with them. The Sanitary Team held trainings for students, teachers, parent associations and the schools' cleaning staff. They also undertook a series of studies on causes of parasite infections in children and provided anti-parasite medication.

The Engineering Team began to train the community members who served as volunteer technical operators in chlorination, disinfection, and basic repairs of the system. Training also took place for health officials to assume their roles of monitoring water quality and to ensuring that chlorination was kept within accepted levels with a simple testing unit and supervising regular maintenance activities. The Engineering Team planned and oversaw community labor to improve the water infrastructure by protecting the springs, covering the storage tanks, repairing tubes and installing chlorination systems. Improved water service at

residences and schools was provided through the installation of connections and sanitary outhouses.

In 2003, the Engineering Team noticed that the chlorination system in use required powdered chlorine that not only had to be purchased out of town but that when the monthly dose was added to the reservoir, it did not dissolve slowly as it was designed to. On several occasions, the chlorine levels in the water supply made it undrinkable and tests carried out on subsequent days revealed that there was almost no chlorine in the water at all. Based on this data, the Engineering Team designed a new chlorination system that took advantage of locally available liquid chlorine bleach and designed a low cost bucket and intravenous drip system to administer the chlorine in a more uniform manner over the course of a month. This system is now in wide spread use in both the rural and urban areas of the district and is consistently cited as being more effective and easier to use than the powder chlorine method.

The Management Team worked with the JASS and the communities in a series of workshops that explained the legal basis for community water management, different models for management organizations, how to develop work plans, and budgeting. Based on these workshops, all of the communities where WUSC worked decided to switch from JASS water groups to water users' associations (AUAS). These associations were based on an organizational model that is formally registered with the national government and has the ability to be both self-sufficient and independent from the municipal government; it is an appropriate form of organization for long-term management responsibilities (SUM 2005b).

Once the model of users' associations had been decided upon, the Management Team assisted new board members in formalizing their legal status, drawing up by-laws, and

establishing monthly rates for the service. The associations' new status and by-laws gave them the legitimacy to establish an official a system of fines for those users who did not use the water service judiciously. The Management Team also helped the new associations to plan for and carry out fundraising activities as well as report transparently on the financial situation to the rest of the population (see Figure 3.5).

Figure 3.5 Treasurer of Rural Association Learning Accounting Skills



Project data from 2002 and 2004 showed that 45 percent of women participating in the project from rural communities had never been to school, 31 percent had some elementary school education and only 12 percent had completed elementary school. Initial diagnostics revealed that women did not play a very large role in public life or neighborhood groups but by 2004 in some communities they had analyzed their social roles and taken on health promoter or board of director roles. Almost all of the rural associations had at least one woman in their board in 2004 (SUM 2005b).

By mid-2004 the rate of payment in the rural areas had gone from 20 percent to 75 percent. Most communities went from as low as 50 percent household water coverage to almost 100, and because water lost in the infrastructure went from up to 90 percent to as low as eight

percent loss, the number of hours of service went from as few as four hours of service a day to 24 hours. Additionally, between 2001 and 2005 the number of cases of diarrhea that have been reported to the health posts has decreased (SUM 2005b).

District Capital

In 2001 the Engineering and Management Teams also carried out diagnostics of the water management and infrastructure systems in the district capital but it was not until the municipality began to see the results to the work in the rural area in 2002 that they provided counterparts to work with WUSC in the urban area. The diagnostic studies that revealed that no one person in the municipal office was exclusively assigned to water and sanitation; rather there were five different areas of the municipality that managed the water service (SUM 2004a).

The mayor was assisted by council members who were put in charge of various aspects of the management of the town. One such post was assigned to the Commission of Potable Water, Health, Gardens and Parks. This council member was charged with supervising the operation and maintenance of the system, authorizing new household connections, and bringing any problems to the mayor's attention. At some points in time this person worked directly as a counterpart on WUSC's Management Team (SUM 2005b).

The municipality's Office of Potable Water and Sewage Services had also hired a Technical Operator, who was assigned to physically check the system daily and to carry out regular maintenance activities. In the streets, he was verbally told of water shortages, broken pipes, and sewage back-ups and served as the main point of interaction between the municipality

and the water users. There were no campaigns to formalize the water service or to educate users about their rights and responsibilities or about water conservation.

The municipality did not keep records on the volume of water produced, distributed or consumed nor the number of connections, their type or location. In 2001, WUSC found that 48 percent of the city had household water that was provided by 319 home connections and sewage was discharged in 34 different places into two rivers. Most of the city's water infrastructure was aging, as it was installed in 1973 and 1993. In 2001 it was estimated that 79 percent of the water in the system was lost through broken pipes, leaky household appliances and the watering of gardens that should instead use unchlorinated water from the city's irrigation system. Additionally WUSC's diagnostics found that the municipality did not have a preventative maintenance program nor the tools or personnel to carry out preventative maintenance activities (SUM 2001).

The general population had never paid for the installation or use of their water service. The funds that the municipality received from the federal government through the Fund for Municipal Compensation (FONCOMUN) that were intended for repairs and upkeep instead went to pay for the running of the service in general. Other government programs also donated some of their budget to helping the municipality to cover its expenses.

Furthermore, the municipality did not keep separate accounts for the water service and therefore did not know how much they were spending on it. WUSC estimated an operating budget for the minimal service provided by the municipality of approximately 2,397 soles (approximately US \$750) per month in 2003. It was estimated that water users would need to

pay approximately 8 soles (approximately US \$2.50) per month to maintain an adequate water and sanitation service (SUM 2004a).

A survey of urban water users revealed that 52 percent were dissatisfied with the water service due to irregular hours of service. The degree to which people felt unhappy with the service was highest in the neighborhoods that underwent water rationing in the dry season between August and November. Sixty-nine percent of users thought that the public should be involved in the administration or supervision of the water service through neighborhood groups (SUM 2004a).

Sixty-five percent of users indicated that they would be willing to pay up to 5 soles (approximately US \$1.50) a month on the condition that the number of hours and quality of service improve. However, 14 percent of the population indicated that they would not be willing to pay anything at all. People commented that treating water is not expensive; that the municipality has lots of resources from the federal government, and that the people who live in towns in Peru's mountains are poor and should not have to pay (SUM 2004a). One staff member in Lima pointed out "since water is used politically to reward votes, people do not have the concept of it as a regular service with a price that will cover the costs."

In early 2004, the Management Team held a meeting with representatives from the municipality, the neighborhood groups, and other authorities to present different options for the management of the city's water system. Between March and May 2004, the leaders of the town's neighborhood groups attended six workshops that taught them about the state of their water system. WUSC also sponsored them on a trip to visit a water users' association they had supported in the department of Nasca (WUSC 2004).

From June to December the Management Team carried out workshops with end users in each neighborhood, with schools, and with municipal authorities on the state of the current water system and different management options. The workshops were supplemented with educational brochures detailing the current infrastructure, participation of the water users, the formation of a water users' association, and the rights and obligations of water users' associations.

Making use of the Municipal Radio Station facilities, the Urban Administration Team began to produce a weekly radio show that was broadcast in Spanish and Quechua on three local stations in October 2004 (see Figure 3.6). They broadcasted three times a week from 6 to 7 am and later began to share the time with the other teams in an effort to create a “water-conscious culture” among the population. In October, the first celebration of InterAmerican Water Day was held in both rural and urban areas.

Figure 3.6 Member of Management Team on Weekly Radio Show



The efforts of the Management Team paid off in December 2004, when in a public assembly, the town decided to form an urban water users' association to administer their services. The association's bylaws were approved in a general assembly a few months later and the

association was formally registered with the government in June 2005. After that they held a contest for the design of their logo and a large fundraising activity in order to set up an office. The final step of the municipality officially handing over management of the services to them had not yet taken place at the time of this research. In the meantime, the association must begin to learn how to use the users' database that the Management Team recently completed and begin a campaign to have the population approve a tariff rate that will cover their costs.

At the same time, in May 2005, the municipality approved an agreement to create a Municipal Unit that would be dedicated to providing assistance and supervision to both rural and urban water groups. A few months later, a workshop was organized by all of the WUSC teams to present, to both the associations and the municipal authorities, the work that they had done up to this point and to highlight the responsibilities that the Municipal Unit will be taking on. WUSC's plan is to transfer the components that they have been working on over to the employees of the new Municipal Unit during 2006. The municipality should hire their counterparts who have been working with WUSC to staff the new Municipal Unit, although there is some fear that these staff will find higher paying jobs now that they have the experience of working with WUSC.

In order to help the Municipal Unit with its new responsibilities, both the Administrative and Engineering teams designed several procedures and worksheets including a protocol on how to officially register water user groups, and how to evaluate the state of their management procedures and the operation and maintenance of their water system. These simple worksheets were useful to help both the associations and the municipality to understand what kind of associations and maintenance they were working towards. WUSC is expected to

suspend their work in the area in mid-2006, to concentrate on documenting their experiences working with water and sanitation in Peru before their funding runs out by the end of the year.

Chapter Summary

This chapter has examined the local context of WUSC's water and sanitation project in Peru. In doing so, it has responded, in part, to the first research objective of this thesis: to describe the communication and collaboration between and among WUSC, municipal governments, water companies, water user groups and end users that have been used to strengthen the capacity to plan carry out and administer water and sanitation services.