

## **CHAPTER FIVE- Findings**

### **Introduction**

This chapter presents the main findings from the workshops and semi-structured interviews conducted in each of the two case study locations. Each case study is divided into four sections following the guiding questions in Chapter Four Table 4.1 including flow and function of communication, quality of relationships, educational campaigns, and changes in individual and organizational capacity.

In each workshop, participants were divided into groups with mixed membership from all of the teams present in the workshop. The only exception to this is the workshop with the rural water user associations in the second study location. In that case, participants were separated into two groups based on their community. To distinguish between the findings of the different groups at the same workshop, I have assigned a letter of the alphabet to each group.

### **First Case Study Site: Urban Location**

As described in Chapter Four, six workshops and fourteen semi-structured interviews were carried out in the first study location (see Tables 4.2 and 4.5). This section discusses the findings from those activities.

#### *Flow and Function of Communication*

As depicted in Figure 4.3, the first workshop with the WUSC team members and counterparts involved mapping out the flow of information between their teams and other stakeholders based on the communication functions listed in Table 5.1. Both groups indicated the main direction of the information flow on their maps and coded them with the number(s)

corresponding to the communication function that best represented the reasons for the communication. Members of Group A concentrated more on the information flows between the WUSC teams and the rest of the water company, mentioning six areas of the company and only WUSC Lima and the water users as external stakeholders. Group B focused more on external relationships, showing three references to the company, three references to WUSC Lima and their donor agency, and also the schools, social institutions, and water users. One stakeholder group that was not included in either map was the mass media.

*Table 5.1 Number of Times Communication Functions Were Indicated*

Communication Function	Group A	Group B	Totals
1 Reinforce group identity	10	2	12
2 Establish rules, norms, policies	2	9	11
3 Share information, knowledge	24	14	38
4 Get feedback, learn	20	3	23
5 Influence others or control self	11	3	14
6 Gain advantages over others, compete	6	3	9
7 Exchange ideas, explore diversity	22	3	25
8 Share talents, enjoy life	12	2	14
9 Transmit time-sensitive information	30	12	42

Workshop findings showed that for both WSUC teams, communication most often takes places in order to transmit time-sensitive information, to share information and knowledge, and to exchange ideas (see Figures 5.1 and 5.2). The functions that were mentioned least often were to gain advantages over others and compete, to establish rules, norms and policies, and to reinforce group identity. Overall, there was more information flow and use of more functions between the Engineering Team and the other actors than between the Social Team and the other actors.

Figure 5.1 Function and Flow of Information- WUSC Team Members and Counterparts- Group A

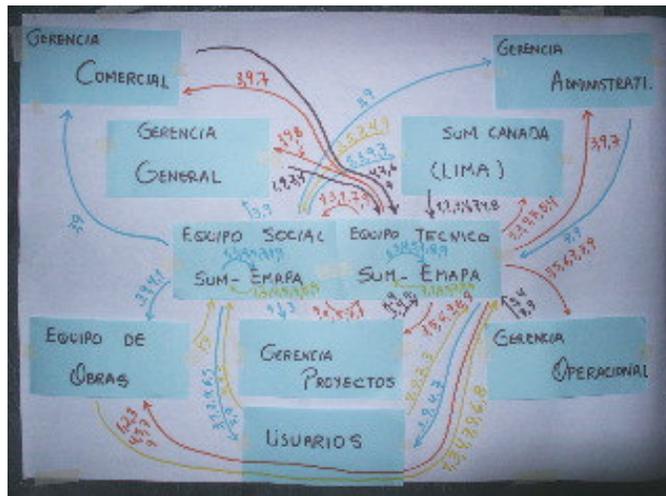
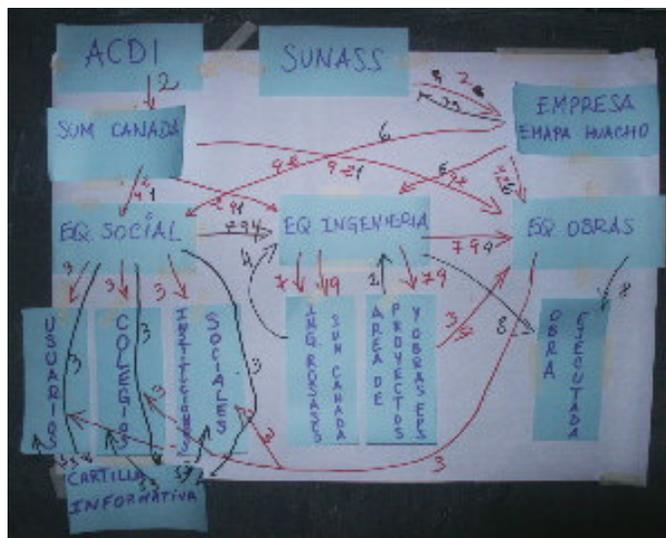


Figure 5.2 Function and Flow of Information- WUSC Team Members and Counterparts- Group B



One member of the Engineering Team stated that their office is a place where “any person in the company can come and we will share information with them.” A manager corroborated by saying that “with [the Engineering Team] we talk almost daily and explore why things are the way they are; it’s easy to come to agreements because we know what is happening.”

On the other hand, communication with the Social Team is not perceived to flow as smoothly. This is due in part to their physical location in another building, which means that

communication often does not take place face-to-face but rather through the telephone or written documents. The manager quoted above continued, "...with the social team it's different, things always come as a surprise." Another manager said:

We have always complained about the lack of dialogue and coordination, it's not very fluid. We find out about things when they have already taken place. With [the first head of the Social Team] the communication was excellent, we were very happy with the work she did. We are trying to correct the new team, to get them to coordinate more. It's ok that they are in the other office but they have to be in touch more regularly and participate more. They often communicate too late. We talked about having more communication at the last meeting, we have complained about it but there has not been a solution yet.

*Quality of Relationships*

The second workshop with the WUSC team members and counterparts on the quality of their relationships, built upon the results of the information flow workshop. As described in Chapter Four, the factors listed in Table 5.2 were selected and ranked by workshop participants as those that most affect the quality of working relationships. In two groups, the workshop participants then used these factors to award points to each of the relationships identified in the information flow workshop (see Figure 4.4). One group was made up of participants who had been with the project longer and they focused on the quality of the relationships in 2003 and the other group focused on 2005.

*Table 5.2 Factors that Influence the Quality of Working Relationships*

Factors that make for good working relationships	Factors that make for difficult working relationships
Trust	Authoritarianism
Responsibility	False information and gossip
Communication	Lack of trust
Honesty	Egotism
Respect	Irresponsibility

The relationships that were given high points with both WUSC teams include those with WUSC Lima and with the schools and institutions. The relationship that received low points

for both groups was with the Projects Manager, which is unfortunate since he was the one who oversaw both groups work on a day-to-day basis (see Tables 5.3 and 5.4).

*Table 5.3 Quality of Working Relationships 2005- WUSC Team Members and Counterparts- Group D*

	Social Team	Engineering Team
Construction Workers	-	20
Projects Manager	-14	4
Operational Manager	13	9
General Manager	-16	14
Administrative Manager	-1	10
Commercial Manager	-11	10
WUSC Lima	20	18
Water Users	-3	12
Schools & other institutions	15	15

*Table 5.4 Quality of Working Relationships 2003- WUSC Team Members and Counterparts- Group C*

	Social Team	Engineering Team
Construction Workers	19	20
Projects Manager	10	12
Operational Manager	-6	-3
General Manager	9	18
Administrative Manager	17	17
Commercial Manager	19	11
WUSC Lima	20	20
Water Users	-7 / 16 <sup>1</sup>	-8 / 20
Schools & other institutions	20 / 20	20 / 20

The factors that most often contributed to high scores in good working relationship category were “respect” and “trust,” while “communication” rarely received many points. The factors that most often contributed to high scores in the difficult relationship categories were “false information and gossip” and “lack of trust,” while “egotism” was rarely given points. The high level of importance placed to communication as a “poor relationship” indicator but not a

<sup>1</sup> The second number in the last two rows indicates that members of the team that works in a nearby satellite town were present and their experience with the last two stakeholders groups differed. Residents of the satellite town had not had the same experience with the installation of water meters that had occurred in the main city as the water company had never tried to install meters there. Once WUSC began to work there, educational campaigns were done with all of the users and schools at the same time and therefore any resistance to the water meters on the part of the public was avoided.

“good relationship” indicator may show that respect and trust are key components of good communication, so when they are present it serves as a proxy indicator for good communication.

In general, based on the two workshops that explored the function of the information flows that take place and the quality of the relationships between the two WSUC teams and other stakeholders, a couple of observations can be made. First, the communication flows that involved few functions generally tended to include only sharing information, transmitting time-sensitive information, and sometimes exchanging ideas. However, the more functions of communication that were used, the more points the relationship was given in the second workshop. Additionally, relationships that had a more equal flow of communication functions from both parties in the first workshop received more points in the second workshop than those relationships where one party used many more functions than the other.

Beginning with the highest, the relationships with the most points for WUSC’s Engineering Team and their counterparts were with the construction workers, the main WUSC office in Lima, schools and institutions, and the General Manager. Starting with the lowest, the relationships with the fewest points were with the Projects Manager, the Operations Manager, the Commercial Manager, and the Administrative Manager. Between 2003 and 2005, the relationships with the users and the Operations manager had improved. While during that same time the number of points that the relationships with the Administrative Manager and the General Manager received decreased.

Members of the Engineering Team felt that they worked well with the other teams in the water company especially the Projects, Commercial, and Operations Managers who they

coordinated most closely with. One Engineering Team member said he felt that “they always support me.” A water company manager commented that:

Our coordination with the Engineering Team has always been direct, we observe what they are doing and how much progress they have made. We come to an agreement with them about which projects are a priority based on how much impact they will have and if they will help the public image of our company. We do not look too much at the economic side of WUSC’s projects, we just really want to improve the hours of service and the company overall.

For WUSC’s Social Team and their counterparts, the relationships with the highest number of points were with WUSC headquarters in Lima, the schools and institutions, and the Operations Manager. The relationships with the fewest points were with the General Manager, the Projects Manager, the Commercial Manager, and the users (see Table 5.4). Between 2003 (see Table 5.3) and 2005, the relationships with the Operations Manager and the users increased in points. During that same time period the relationships with the Commercial Manager, General Manager, Administrative Manager and the schools and institutions decreased in points.

In contrast to the Engineering Team, the Social Team is perceived as being disconnected from the rest of the water company. One manager commented that:

We have our own scheme [for communicating with the public] with the Institutional Image office. The social team we have now is a bit divorced from us for political reasons. The team we have now is too polarized, they respond to a certain political faction, which means they are divorced from the people we have in the Institutional Image office and the other managers.... We’ve found that they are sharing lots of information with a council member. They denounce everything that happens to him, but that is not loyalty, when you work for someone you should respect them... We do not want to move or change them because of the respect we have for the agreement [with WUSC], they are already working so we let them but sometimes we cannot reach understandings with them. We support them but with sadness that they are not the same team that we started working with.

In spite of that, both members of the public and employees at the water company felt that the educational work the Social Team did with the water users and the schools was important.

One water company employee stated that:

Attitudes towards the water meters have changed, now people pay less and they are happy to have meters.... The water company wins when people conserve water and the users' education program has played a very big role in that.

### *Educational Campaigns*

I conducted workshops with both end users and a school in order to get their perspective on the communication and collaboration that had taken place with them through WUSC's Social Team and the water company in general.

The majority of workshop participants from a neighborhood group agreed that they preferred face-to-face interpersonal communication with the water company over any other form of communication. They expressed the desire for someone to come and speak with them in person rather than to have things communicated by radio, newspaper or TV. They also saw the educational brochures provided by the Social Team as being free from some of the problems that other forms of communication suffer from, namely sensationalism, corruption and inaccurate information (see Appendix 1).

In the sectors of the city where WUSC did not work with the water company, the majority of the communication with the general public took place through the company's Institutional Image Office. The person who headed the office was trained in journalism and his main strategy was to use the mass media to communicate with the general public:

I always have to listen to the radio to see what people are saying. I listen, watch TV and read the papers everyday. That's how I know how people are

feeling about the company. If we come out looking bad in the media, we know there are problems and that's when we get worried.

One manager described the water company's process of working with the public like this:

We do not do consciousness-raising work, but when we do construction in a neighborhood we meet with the community leaders, tell them our concerns about the project and ask for their support with the manual labor. Sometimes we tell people about the progress we're making with the construction on the radio. We do not have educational materials. In a few cases we have gone house to house and asked for people's forgiveness for the construction.

However, at the time of the research, some of the managers felt that this was not sufficient:

We do not have our own Social Team, and we do not invest money in WUSC's social team either. So you can see that our concept of the importance of their work is wrong. We should be spending more time with the users and to do that you need a Social Team. What we have here is an Institutional Image office but it has only one employee with a camera and microphone. He just does image work...but he does not explain things to the public or do educational campaigns to talk with them about water use. He does not have any resources, or a budget to do social work, nor has he been told to do it in his job description.

As mentioned by the water users in Appendix 1, several water company managers also acknowledged the problem of using the mass media as their main link with the public:

It's hard to do serious work with the media we have... If we do not have contracts with the media, they blackmail us and publish false stories. At one point, we decided not to sign a contract with anyone and they published stories about the quality of the pipes and the water. We sought them out and asked them what they wanted. They said a contract with us, and when they got it, everything changed [showing me a newspaper with a headline denouncing the water company and a couple months later the same paper with a headline announcing the newspaper's best business awards with the top prize going to the water company].

The other main point of contact between the public and the water company is through the Commercial Office, which handles billing and customer complaints. One manager described this contact with the water users:

We have a small blue sheet of paper to give to the users that explains the procedure for complaints, the rest of the outreach materials we have are part of WUSC's user education program... The users were not very informed before, but now because the law tells us to, we've put up information boards downstairs [in the customer waiting area], we've told people how to complain, and what their rights are. But now they complain a lot, they are very well informed and the company has to be more careful about customer service.

One manager highlighted the importance of the Social Team's work this way:

We did not know much about the families in [the city], each one has its own internal hierarchies, opinions and ways of doing things. The municipal government does not take this technical information into account much; instead it works based political issues, and so work is done quickly without any regard to quality. Because of this, the public gets a distorted view of the water company and how we work. So the Social Team goes in and helps people understand how we really work, what we plan to do and to open up the path. If the engineers go in first, they will achieve very little. This kind of social work is very important for organizations, not just for potable water but also for other community projects.

As mentioned above, the relationships that both the Social Team and the Engineering Team had with the users increased in points between 2003 and 2005. This change was due to the work of the two teams both in communicating with the users about their rights and responsibilities and to improvements in the number of hours of water service and pressure as described in Chapter Three.

A workshop was conducted with a group of six teachers who had participated in a series of educational presentations given by the Social Team (see Figure 4.5). Overall, they indicated that they had found the materials useful and were positive about the experience. This feedback reflects the high number of points that the WUSC teams received in their relationships with the schools in the second workshop (Tables 5.3 and 5.4).

I attended a training given by the Social Team at a second school and asked them to complete a short feedback exercise. The teachers there indicated that they too had liked that concrete facts and figures were presented (see Appendix 2).

Findings from the workshop with the teachers showed that while the secondary school teacher had looked over the materials slightly more than the other teachers, the primary school teachers had made more of an effort to educate the students' families. The primary school teachers thought that the content had had more impact on changing their students' water conservation habits than the secondary school teacher did (See Appendix 2).

During this workshop the teachers were also asked to design a lesson plan that would incorporate the materials they had been given by the WUSC team. The group made up of primary school teachers was extremely creative and designed a musical theater production about a drop of water that becomes homeless when someone leaves the tap open. The activities they designed for the children to subsequently present to the class revolved around drawing a new home for the drop of water and making up a story about how it got there.

One teacher who had participated with WUSC in the first sector of the city said this about the materials:

WUSC gave us educational materials but there were not enough for 1000 students, so we made copies of the 100 brochures that they did give us so that there was one copy for every two students. The materials they gave us were beautiful; they were very colorful and attractive to the kids...We pasted the original color materials on the walls so that the children could look at them during recess. If the kids do not understand the materials, we explain, we ask them questions and get them to have conversations about the content and to think.

The repairs of the facilities done at the schools also helped contribute to the growing water consciousness among the children, one teacher commented that:

We used to have broken pipes and excessive water consumption in the school, 80 percent of the water was wasted. Then the water company did some repairs. Sometimes we still go into the washroom and find the taps on. But now when we ask what happened, the students are aware and say 'oh excuse me.' Today we organize educational campaigns and tomorrow people's habits will change, it's a process. Cultural change does not happen overnight from one day to the next.

The celebration of InterAmerican Water Day was also highly regarded by a teacher who had participated in it:

We planned activities to do over fifteen days: contests, parades, and talks for all the participating schools. We made it very broad; up until now there has not been another event like it... For the first time in our town the winners of the contests were not just from the private schools and the prizes were not really cheap. WUSC sent us interactive games and other prizes that would be too expensive for us to have given away... If we take the events outside of the school to the community they will learn too, we want them to learn that the environment is important too and that natural resources need to be valued... People saw so many kids in the streets and their own children participating dressed up as water drops. How could they not realize that each drop of water is precious?

#### *Changes in Individual and Organizational Capacity*

In order to respond to the guiding questions about what changes have occurred at the organizational level (in terms of autonomy, leadership, and systems of learning and problem solving) and what changes have occurred at the individual level (in terms of involvement in decision-making, knowledge and skills, and confidence and self-concept), two workshops were conducted around the themes of decision making and learning.

A workshop was conducted with water company managers on decision making processes, as described in Chapter Four (see Figure 4.6). They indicated that nine of the 15 most important

decisions they identified had been made by the board of directors and the managers using type A decision making (see Table 4.4). Where WUSC has been involved, the decisions were seen to have been taken in a more participatory manner (see Table 5.5 and Appendix 3 for the results from other groups)

*Table 5.5 Decision Making Processes- Water Company Managers- Group E*

Decision	Who made it and how it was made
Renovations of the water and sewage system	A- The board of directors and managers Because there is no way to communicate with the clients to make decisions together
Decision to place more importance on investments	A- Board of directors
Increased pay for managers and team leaders	B- The board of directors and managers Because of the hierarchy and power over decision making
System to save electricity	C- General manager made the decision based on budgets from the managers
Technical modernization in several areas of the company	A- General manager made the decision based on budgets from the managers In order to stay on top of the newest innovations

A member of the board of directors of the water company explained the decision making process this way:

The different municipalities have representatives on the board of directors and they bring the requests from the population. For example when there is a project to pave a street...the municipality tells us to replace the pipes before they do the paving. This is a cost that the water company has to cover. So the company has a budget that it plans to work with, then the municipality says do this and the budget is manipulated politically. The technical aspects always come in second behind the political aspect so that the mayor can look good... About 50 percent of the work that is done by the water company is for political reasons.

Throughout the interviews I heard from the managers that one of the things the water company was learning from the WUSC teams was their way of working together, their teamwork approach. One manager stated, “The WUSC team members are disciplined in their work habits and methodologies. We see their way of being, the way they work together, their order, their simplicity and responsibility. We learn from things like that, we watch and it gets transmitted to us.” Another manager said, “The most important thing they are doing is

showing us how to work together, the productivity of working their way can be seen. We had planned things in the past but were not able to accomplish them because we did not have the mechanisms to work together.”

On the other hand, the WUSC team members expressed frustration that the water company employees were not working together as much as they would have liked. One team member stated:

They talk about teamwork but never put it into practice... Our way of working has not transferred more to them because they always work based on their organizational manuals. Teamwork values are not included in their manuals nor are they practiced. It’s important that we teach by example so that the ideas do not just stay in books. Some of the workers are very interested in our way of working and we are very open with them.

Accordingly, during the workshop with the water company managers on decision-making, I also asked them to brainstorm the meaning of teamwork, the different components of it and to place them in order of importance (see Table 5.6).

*Table 5.6 Factors that Comprise Teamwork - Water Company Managers*

Group H	Group I	Group J
Sense of belonging to the water company	Guarantees the expected results	Communication
Personal motivation	Everyone in the group is involved	Responsibility
Will to improve	Everyone identifies with the work	Initiative
Coordination of work between the relevant departments	Everyone is responsible for the work	Identification
Support of the General Manager and the Board for the decisions that are made	There is no leadership or bosses	Creativity
	No one’s ideas are discarded	

A second workshop was conducted with the water company managers on changes they had observed since working with WUSC (see Figure 4.7). Also participating in this workshop were WUSC team members and counterparts. The work of both the Engineering and Social teams were highlighted in the workshop findings (see Appendix 4). Changes were mentioned in areas internal to the water company and with the water users. The reasons that were cited

most often as causing change were to improve the company, to benefit the company and because there was economic support to make changes. The reasons that were mentioned least frequently were for political reasons, what was done before did not work and new information became available that was not known before.

In the interviews, some of the barriers to increased change and learning in the water company were mentioned including both external and internal factors. The main external factor is the municipal ownership of the company. One manager asserted, “The link with the municipality influences the culture of the water company too much. The link is too strong and it’s a negative influence. If the laws were changed so that the water company was separate from the municipality maybe people would respond to change; but now they are always dissatisfied.” Another manager stated, “People have said that the municipalities can administer their own resources, but there is too much manipulation. There is lack of resources and trained people, but we could still do it if the work plans were followed, but because of the political nature of the company, the plans and budgets are always getting changed.”

Inside of the company, the impact of municipal ownership can be felt as a barrier to change as well. A water company manager pointed out, “The correct way to fill an open position is with a hiring process based on merit but to tell you the truth we do not do that. Very few times have we had an official hiring process where we hired the most qualified person. The way we do it, there are lots of people who are inside the company not really doing anything, but they got their jobs because of their politics.”

The political hiring process leads to inertia that keeps water company employees from being creative and working for change. One manager commented:

We fell into a monotonous routine; we came in did the same work and when the end of the day came we closed the same files. In this way day after day the years passed. We knew there was something more profound to be done... but there was no follow-up because there were always more urgent things and fires to be put out. So nothing really got done because these processes take years to really do properly. Sometimes we want quick success so we do something in a year but half-heartedly so it never really gets done properly. That's why we never implemented the trainings on team work that we got, we think too much of the short term and that has set us back a lot.

However, several managers mentioned key moments of learning like this one:

We had great plans but things were always problematic [with the users] during implementation. They were demanding and told us to first fix their connections before we did anything else. There were even city council members and our own workers who were opposed to the installation of the water meters. We've learned more from all of the social problems than from installing the infrastructure.

And an Engineering Team member observed several changes in the water company:

Other people did not want to share information with us in the beginning but this has been changing since we always share information with everyone. Also, people are seeing the problems that exist in the pipelines caused by poor quality work so they are learning that quality is important. At first people did not want to change the way they were doing things but now they have seen that it's important. We've been working little by little, sector by sector and people have been seeing the results. But people fear change; some people are still resistant to new ideas, they are afraid for political reasons. In general people are more eager to help, they're not ready for teamwork yet but they do share more information. At first they did not believe in us, but people are changing now because they have started to trust us.

## Second Case Study Site: Rural Location

This section provides the findings from the five workshops and 27 semi-structured interviews that were carried out in the second study location as described in Chapter Four (see Table 4.3 and 4.5).

### *Function and Flow of Communication*

As in the first study site, a workshop was conducted with the WUSC teams and counterparts on the flow and function of their communication with other stakeholders (see Figure 4.8).

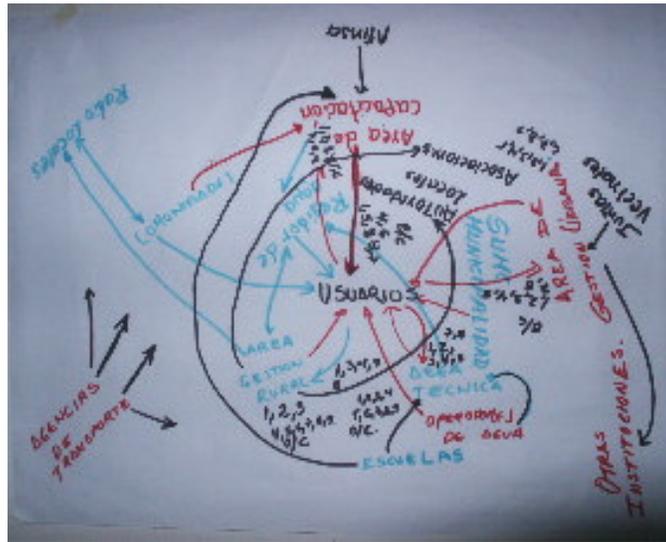
The communication functions listed in Table 5.7 that were mentioned most often, starting with the most frequent are to share information and knowledge, to influence others, and to establish rules, norms and policies. Communication takes place least often, starting with the most infrequent, to gain advantages over others, share talents and enjoy life, and to receive feedback and learn (see Figures 5.3, 5.4 and 5.5).

*Table 5.7 Number of Times Communication Functions Were Mentioned*

Communication Function	Group N	Group O	Group P	Totals
1 Reinforce group identity	11	12	8	31
2 Establish rules, norms, policies	10	19	6	35
3 Share information, knowledge	12	22	7	41
4 Get feedback, learn	8	11	8	27
5 Influence others or control self	12	18	7	37
6 Gain advantages over others, compete	8	1	5	14
7 Exchange ideas, explore diversity	12	7	7	26
8 Share talents, enjoy life	8	1	8	17
9 Transmit time-sensitive information	13	11	6	30



Figure 5.5 Function and Flow of Information- WUSC Team Members and Counterparts- Group P



Each group drew their map slightly differently, reflecting different emphases. Group N had communication flows going from the three WUSC teams equally to all of the other stakeholders, while Group O separated the three teams to show how they each have their own sets of relationships. Group P placed the water users at the center as they thought the users were the core of all of the efforts.

Participants identified the best quantity and timeliness of communication with the WUSC office in Lima, the local radio stations, and the rural communities and associations. In the relationships rated C for flow (most quantity and timeliness), more functions of communication were used than in the relationships that were given an A for flow (least quantity and poor timeliness). In the information flows that were rated C, the functions that were most often used included to share information and knowledge, reinforce group identity, establish rules and norms, influence others, and to transmit time-sensitive information.

The communication flows that were rated as the sparsest and least timely were with MINSA, other community institutions, the urban neighborhood groups, and the schools. There also

existed little flow between the Management and the Sanitary Training Teams. The relationships that used the fewest number of communication functions included between the WUSC teams and MINSA, other institutions, the neighborhood groups, and the media.

Several team members emphasized the need for the three teams to meet more frequently to keep each other up to date and to coordinate their work more fluidly. One team member said, “Everyone sits at their computer and we do not know what each other are doing, we talk about communication but we’re not doing it.”

Another WUSC team member stated:

We need to set a date so that we can meet and coordinate who is doing what when and talk about the problems that we’re having in our work. Also within the groups, we all have to know what’s going on so that if one of us is not here another person can do the coordinations. Each area needs to meet and all the teams need to meet together too.

### *Quality of Relationships*

Building upon the first workshop on communication flows, a second workshop was also done with the WUSC team members and counterparts on the quality of their relationships with other stakeholders (see Figure 4.9). Participants selected and ranked the qualities that most affect the quality of working relationship (see Table 5.8) and used them to assign scores to each relationship as described in Chapter Four.

*Table 5.8 Factors that Influence the Quality of Working Relationships*

Factors that make for good working relationships	Factors that make for difficult working relationships
Communication	Lack of communication, false information
Respect	Lack of respect
Trust	Egotism
Sincerity	Mistrust
Responsibility	Bad intentions

Participants were divided into three groups, two of them focused on the relationships in 2005 while the other assessed the relationships in 2002-2003. Relationships that received high points with all groups were with WUSC Lima, the rural user associations, and the urban water association. Relationships that had low points with all groups, starting with the lowest, were with MINSA, the neighborhood groups, and water users (see Tables 5.9, 5.10 and 5.11).

*Table 5.9 Quality of Working Relationships 2005- WUSC Team Members and Counterparts- Group Q*

	Engineering Team	Management Team	Sanitary Training Team
Users	6	12	16
Neighborhood Groups	3	13	10
Urban Water User Association	15	20	10
Rural Water User Associations	15	19	12
MINSA	5	6	12
Municipality	13	10	8
Municipal Water Representative	14	13	10
Schools	13	10	15
Technical Operators	16	10	10
WUSC Lima	17	20	15
Engineering Team	11	15	13
Management Team	15	17	12
Sanitary Training Team	15	4	20

*Table 5.10 Quality of Working Relationships 2005- WUSC Team Members and Counterparts- Group R*

	Engineering Team	Management Team	Sanitary Training Team
Users	14	10	-
Neighborhood Groups	-9	12	-
Urban Water User Association	19	19	-
Rural Water User Associations	15	15	-
MINSA	-20	-20	-
Municipality	16	19	-
Municipal Water Representative	16	19	-
Schools	19	14	-
Technical Operators	20	12	-
WUSC Lima	20	20	-
Engineering Team	13	13	2
Management Team	16	16	-9
Sanitary Training Team	-	-	-

Note: there was no one from the Sanitary Training Team in this group, so the table was not completed in its entirety.

*Table 5.11 Quality of Working Relationships 2002-2003- WUSC Team Members and Counterparts- Group S*

	Engineering Team	Management Team	Sanitary Training Team
Users	11	9	11
Neighborhood Groups	-	-	-
Urban Water User Association	-	-	-
Rural Water User Associations	9	9	8
MINSA	5	10	5
Municipality	12	6	8
Municipal Water Representative	6	5	5
Schools	11	7	9
Technical Operators	8	5	5
WUSC Lima	8	7	6
Engineering Team	7	14	10
Management Team	11	5	11
Sanitary Training Team	8	12	5

Note: the neighborhood groups and water user associations did not exist at this point in time.

As in the first case study site, relationships that received fewer points in the second workshop also had a sparser flow of information and used fewer functions in the first workshop than relationships that received more points. The factors that most contributed to high scores in the good working relationship category were “respect” “trust” and “sincerity” while “communication” and “responsibility” rarely received points. The factors that most contributed to poor working relationships were “lack of communication” and “bad intentions,” while “egotism” was rarely given points as a factor that negatively influences relationships.

For the Engineering Team, the relationships that had the highest number of points were with WUSC Lima, the technical operators, the urban water association and the schools. The relationships with the lowest number of points were with MINSA, the neighborhood groups, the users and within the Engineering Team. Between 2002 and 2005 the relationships with the technical operators, the schools, the Management Team, and the Municipality gained points, and the relationship with MINSA decreased in points.

For the Management team the relationships with the most points were with WUSC Lima, the urban water association, the rural user associations, and among the Management Team members themselves. The relationships with the least points were with MINSA, the Sanitary Education Team, the technical operators, and the users. Between 2002 and 2005 the number of points with the Engineering Team increased, and during that same time, the relationships with MINSA and the technical operators decreased in points.

The relationships with the highest points for the Sanitary Training Team were among team members, with the schools, with the users and with WUSC Lima. The relationships with the lowest points were with the Management and Engineering Teams, and the municipality, the urban water association, the neighborhood groups, and the Municipal Water Representative. Between 2002 and 2005 relationships with MINSA, water users, schools and the rural water user associations increased in points and the relationship with the Municipal Water Representative decreased in points. As the only team with improved relations with MINSA, this could be due to the work that the Sanitary Team does with the rural health promoters in the communities rather than the main MINSA office, which is the central point of contact for the other two teams.

In interviews, many team members talked about the challenges of working with the municipality, however, local authorities were very positive about WUSC's work. One member of the Management Team explained:

The municipality does not really understand the work that we're doing with the associations, they see that there are still problems in the communities so sometimes they think that we're not working. They are always more enthusiastic about the infrastructure components, they agreed to the whole project with us not because they were excited by it but because they saw it as a way to get financing for the infrastructure they wanted. They can sell the

public works politically but the trainings they do not really get because it's harder to point to concrete results. They're just starting to understand that it's a lot more complicated to work with people than with pipes and tools. We've had this same experience in every single WUSC project.

A member of the Engineering Team also highlighted that their team had received less support than they would have liked from the municipality:

We have not done much work in the urban area. At first the municipality just gave us a council member and a technical operator as counterparts and there just was not any sense in that. Then later they thought they would put some of their engineers on our team. But the engineers did not understand our project, they just wanted to come part time and supervise some work and that did not make any sense either. So for now, we're working with a technician and he is completely involved in our work, but we're always pushing the municipality for an engineer.

The lack of municipal counterparts in the urban area has been a barrier to WUSC accomplishing as much as they would have liked there. However, one local authority stated that:

There is not a single institution here that opposes the work that WUSC does and the legacy they are leaving us. All of the other institutions are out of touch with the population, they spend so much money on operating costs that they have nothing left for their projects. None of them train any of our people so that we can continue on with their work into the future.... Based on these experiences, the municipality has closed its doors to MINSA and many other institutions; we just do not support them anymore. We are difficult to work with, we do not trust people anymore, as they always promise us everything but do not deliver. WUSC was the first who came to work with us with really qualified professionals and a love for our people. Over time they won us over, and now we trust them.

The MINSA representative responsible for environmental health and water quality expressed that he was overwhelmed with his role and this made MINSA a difficult counterpart for WUSC:

Each month I inspect and report on potable water and sanitation, dog vaccinations, dog bites, health inspections for commercial establishments,

health permits for food workers, rat eradication programs, slaughterhouses, trash collection, the school and municipal storage facilities for government food programs, and the condition of the cemeteries. I am supposed to train the water user groups to monitor their water quality and when cases of diarrhea are reported I'm supposed to visit the community three times. I have abandoned more than 15 rural communities because I just cannot get there, I have no idea what their water looks like...I do not do my work well, I cannot cover it all. Just doing the water part would be too much work for one person. We need to be coordinating better with the authorities, and sometimes my own institution is a barrier to getting my work done.

A member of the Management Team acknowledged that WUSC's work with the educational sector could also be improved, "We have not established very strong links with education and we need to work on that too. We need to get the municipality to work with them on a more permanent basis so that part does not collapse when we go."

In terms of the relationships between the WUSC teams, a member of the Sanitary Training Team explained:

Sometimes we have so much work, we all do, we go out to the rural area so often and when we arrive late in the evenings we're tired. Some people misinterpret our actions; personally I just do not like to participate in parties and sports events. It's just not my thing. We advise them ahead of time that we will not be there but maybe people resent it.

However, one of the problems is that the head of the Sanitary Training Team does not work on a regular basis in the office with the rest of the WUSC teams, instead she comes to visit once or twice a month and coordinates a work plan with the Sanitary Training Team members. A member of another team explained the problem between the teams from her perspective:

We tell you [the Sanitary Training Team] sometimes about things like meetings with the water users association, but you say that you cannot be there because you've already scheduled something during that time, but you need to leave space so that things can come up. We have to coordinate other things that are not part of your work plan, you do not have to always be

calling your boss to see if it's ok, you'll be working with us on important activities. If we invite you to participate in something like the radio show it's because we think that the information you have is important to the work that we're all doing. We also have to communicate more with you too but up until recently you all would enter and not speak to us, not even to say hello or goodbye, and that shows a lack of respect.

The poor coordination between the teams led to cases where some communities received training on how to build and use household latrines up to two years before the Engineering Team had the funds and was ready to provide the materials and technical assistance for them to do so.

### *Educational Campaigns*

The educational campaigns that were done with the water users, associations and schools were based on the diagnostics that were completed in each of the three areas. A member of the Sanitary Training Team explained how WUSC began work in the rural areas:

When we enter a new community we talk with the authorities first and they introduce us to everyone in a general assembly. We show them the themes that we will talk about and answer any questions. Almost everyone wants to participate; they are humble people and they want to learn more. Most people already know us since we are from here and we speak Quechua. These are communities that have applied to participate with us so we already know that they have some interest before we meet them.

While most of WUSC's educational materials were delivered through interpersonal communication, workshops and over the radio and were modified through interaction with their audiences, only the sanitation trainings for the rural areas were designed in 2001 and had not been updated since, "We have not changed them since everyone here has the same health problems."

In the urban area, since WUSC and the municipality had agreed that the formation of a water users association was desirable, the user education program in the urban area focused on management models and to a lesser extent on water conservation. In the first user education workshop, the team gathered more information in order to determine what topics they would cover in the trainings. One member of the Management Team explained:

After we had trained them, the heads of the neighborhood groups were extremely important because they helped us to convene the workshops. We knew that if we invited the population directly they would not listen to us as an external organization, but they had to listen more to their own neighborhood representatives. We went around and made a map of the whole town with everyone's name and then when we held meetings, we invited everyone by name. We got their opinions first and then start to work with them. We knew that if we went and just told them to do things, they would reject us so we had to go listen first and then design the program around that.

Originally, WUSC was only a going to spend a couple of months on public education for the urban water users association, but after the first workshop they realized that the population was a long way away from being ready to manage their own system. A Management Team member recalled:

We had planned to do just one or two months of workshops but after the first one we had to rethink it and give people a lot more information before we could ask them to make a decision about forming an association. They had to know what participation meant. Then we could talk about the management model. People thought that participation meant that they would provide unskilled labor for public works. That is just passive participation but we wanted people to be active and make their own decisions about the water service. We talked to them about what quality service looks like and the problems they could have if they did not participate... For those that did not attend the meetings we went door-to-door with the brochures and spoke with them. And then we started using the radio to reinforce the topics so that the whole town would know what we were doing.

WUSC had to work hard to overcome many misconceptions on the part of the urban population. A water user explained why he stopped going to the WUSC meetings,

“Sometimes we went and they just argued and never talked about the water; it was a waste of time. If it’s a meeting about water then it should just be about water, but they talked about too many different things, and just ended up fighting.” One member of the Management Team describes the challenges:

We had to have a lot of patience, some people were very argumentative, they did not understand the project, and they did not come to the workshops to find out about it. There is a group that is still against the water users association, they say that this is the first step towards privatizing the water service, they even get on the radio with a counter campaign. Our strategy is not to respond directly to them but rather to continue reinforcing our themes. Also, because the mining company is from Canada too, people think there is a link, and this has been very tricky. And people in the urban area always saw our office here but they did not know about the work we did in the rural areas so they thought we were not doing anything since nothing ever got better in town.

While a local development association that was created by the mine did contribute money to WUSC’s projects, the mine did not influence WUSC’s work. However, the association of WUSC with the mining company in people’s minds was especially tricky, as it did not have a good reputation for either its environmental or labor practices. The mining company was subject to regular denunciations on the radio, there were public graffiti calling for it to leave the area and it was singled out and held responsible for municipal financial shortages. I was told to always say that I was working with the municipality when speaking with people to avoid being associated with the mining company in any way.

The Sanitary Training Team began work in the urban areas in 2004. They started with one school and then began to do sanitary training and hand out water storage containers to the public. One team member said:

We did a parasite study in the school and found that and 70 percent of the kids had parasites. A major cause of this is the way water is stored in the home, so that’s why we started this campaign. In the urban area they did not think they

had anything to learn, and that they already knew everything. But we went around and asked how many hours of water people had and targeted our workshops towards areas that have little running water.

They trained a group of people in the school to ensure that water was not being wasted and that the drinking water in the classrooms was chlorinated properly. Members of the Sanitary Training Team also demonstrated to the students how to wash their hands. However, the director of the school wished that the teachers would be trained to share the materials with their students.

Our students have received very little training on water topics and since we have about 600 kids, we want more permanent training. The municipality is the one that is responsible; they should be training the teachers so that they can reach all of the students. Our teachers need to take over this role; we cannot keep getting trainings from outside.

#### *Changes in Individual and Organizational Capacity*

In interviews, several local authorities affirmed that they had learned a great deal from WUSC, many of the items mentioned focused on technical factors:

We have learned from their example, this is like a WUSC school of water management. Now we are an example for everyone in the valley. We have learned how to manage potable water both for rural and urban areas. And we have learned to do technical plans in order to look for financing for projects.

One municipal authority recounted some concrete skills that he had learned from working with WUSC:

Since I did not know much about it, I asked WUSC to help supervise the work on another project. We made their project manager buy better materials, he did not want to but we made them spend the money and do it right. Before we always just accepted the materials and let them work, and then the valves and pipes would break and there was nothing we could do. Now it's different, I can identify the quality of the materials by myself. I know how much work a person can do in a day and can tell when they have been overcharging us without doing the work. Now not even the engineers or workers can trick me anymore.

A member of the Engineering Team said that he had not seen many changes in the users:

Up to now, people still do not understand. Since we've been here, our preoccupation has been with the safety of the water. But the other main problem is the amount of water that people waste; we have not advanced too much in that area. We've been working on the water loss in the pipes and expanding the hours of service. And we've been working on the radio to try to get people to understand what quality water means but they still do not understand.

On the other hand, a Management Team member pointed to several changes in the attitudes of the urban public:

People have started to understand that there are problems in the water system. They had thought that they drank water from another river, and that there was a lack of water so they were always asking the municipality to look for new sources. They learned that the problems were caused by the fact that no one was really looking after the system and they were not paying so they did not have the right to complain about the service.

The population's approval of the formation of a water users association marked a large shift in the attitudes of the urban public. Appendix 5 chronicles the creation of the association from the point of view of its board of directors (see Figure 4.10).

Almost everyone agreed that there had been more changes in the rural communities than the urban area over the last several years. An Engineering Team member related some of the changes that he had seen:

When I arrived here none of the communities had safe water, not one. So we are making progress, the communities are starting to understand the importance of this and hopefully with their own hands in the future they will continue to improve their water services.... In some communities we've seen that people will not pay their fees because they are too politicized. But in the community next door they can be really well organized and have their service running perfectly, so you can really see the relationship between their level of organization and ability to work together in the quality of their service.

One Management Team member commented the functioning of the rural water associations:

They wanted to learn, someone just had to go out to the communities and explain things to them in Quechua. The way the associations work has changed, now the directors inform the population about their financial situation. In one of the communities no one paid their fee all last year. The directors decided to cut off the water supply of those who had not paid and people did not have anyone to complain to because they had approved their own bylaws, nobody made them do it... The other problem is that the treasurers do not like to spend the money they collect; we go and find that they have not bought the materials they need. They think that people will get mad at them for spending the money but we tell them to spend and then to report on it at the next meeting. This is a change for them, the president used to finish his term without reporting on anything so the directors have become afraid of spending.

There have also been changes in how the rural population feels about their associations, a Management Team member recounted that, “when the water associations hold fundraising events, they support each other across communities, they take their sports terms and pay to participate in the activities. The communities compete with each other a little to see who can fundraise the most money.” Another management Team member said that:

People feel more represented by their association than they did with the informal user groups. Some people have asked for copies of the bylaws, and little by little they are understanding them. They are learning about their rights and obligations. They are disinfecting the systems now and there have been fewer cases of diarrhea lately. And the board of directors is telling them when they will do maintenance activities so people know when to collect water and when not to use the water. People also volunteer with work crews so that the directors do not have to do everything by themselves.

A MINSA representative in one of the rural communities verified that the cases of diarrhea that he had seen had been decreasing over the past couple years. Another local authority commented that, “There used to be a lot of sickness in the communities but that has changed, now people know how to keep clean and where to keep their animals- they used to sleep together but now they keep them a little ways away.” While the Sanitary Training Team felt that some changes in behavior had happened, one member stated that:

They still do not like to drink chlorinated water; they would rather boil it or drink it straight from the spring. They use the chlorinated water to wash dishes and vegetables but not to drink. Also sometimes they continue to go to the bathroom outside around their homes.

Unknowingly corroborating the qualities that were selected for good working relationships in

Table 5.8, a Ministry of Health representative also reported that:

I am working in three communities on my own initiative teaching them how to use the liquid chlorination system. In some communities they are chlorinating really well, people are using protective gear, and paying their fees so that more chlorine can be bought. There has been a radical change in the communities where WUSC is working, things that we were not able to achieve, they have. WUSC works with the communities slowly; they visit people house by house. We go to the communities in a hurry, are in a hurry while we're there and leave in a hurry- and that kind of work does not yield many results. You have to become friends with people in the community

Members of the boards of directors of two rural water associations identified changes they had seen in each of their communities in a workshop (see Tables 5.12 and 5.13). As described in Chapter Four, they then took photos of changes in their communities (see Figures 4.11 and 4.12). Photos were taken of people paying their fee, in their homes washing their hands, washing their clothes, carrying water to the kitchen, storing water in the containers that WUSC had given them and of household latrines. Photos were also taken of a community health post, the outhouse and sink at a school, repairs of the water pipes, the drip chlorination system, the fences that protect the water storage tanks, and the metal locks that keep unauthorized people out of the water supply (see Figure 5.6 for some examples).

*Table 5.12 Changes in 1<sup>st</sup> Rural Community- Directors of Rural Water Users' Association*

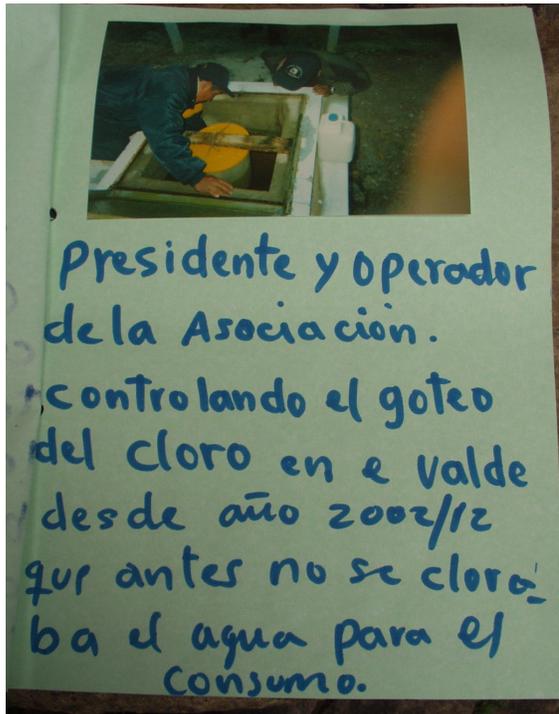
Characteristic	5 Years Ago (scale of 1-10)	Now (scale of 1-10)	Explanation
Users paying for water service	0	10	We are organized. Users now understand that to have water 24 hours, they have to pay for it.
Purchase of necessary tools and materials	0	10	Now that people pay the monthly fees, materials and tools such as valves and chlorine can be purchased to keep the system in good operating condition
Chlorination of water and disinfection of system	0	10	We did not use to know about chlorine. Now, because of the training by WUSC, we know how important it is for reducing sicknesses.
Wise use of potable water, no waste	0	10	It's important to conserve water, we tell people through training and by applying sanctions and fines which are part of the duties of the association.
Consistent operation and maintenance of the water system	3	9	Before, we cleaned the system once a year, but without using chlorine. Now we do cleaning and maintenance every four months.

Note: 1=very little, poor; 10=very much, excellent

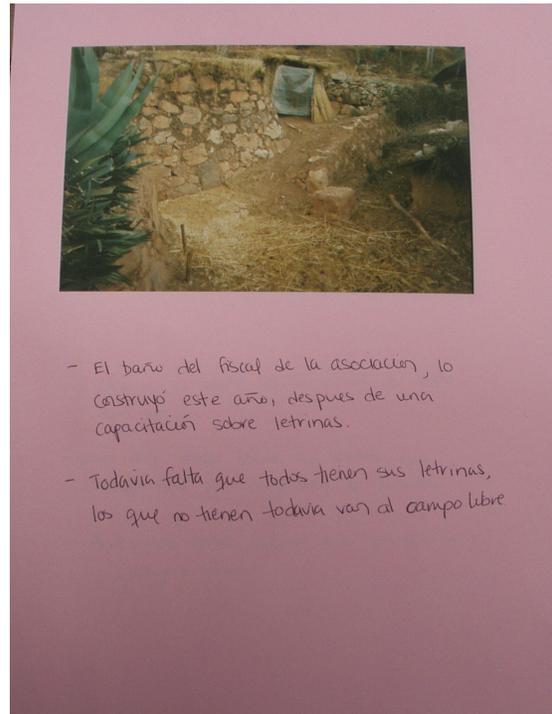
*Table 5.13 Changes in 2<sup>nd</sup> Rural Community- Directors of Water Users' Association*

Characteristic	5 Years Ago (scale of 1-10)	Now (scale of 1-10)	Explanation
Condition of large storage tank	9	3	There is a lack of funds to buy materials for repairs
Materials for repairs and maintenance	0	3	The system was built for us but we were given no materials, now we are starting to buy materials with the monthly users fees
We perform maintenance on the system every three months	8	10	We have improved our maintenance of the storage tanks
Buying chlorine	2	10	We now buy chlorine for each month
Users paying the monthly fee	1	10	Now all of the users pay a monthly fee for the water service

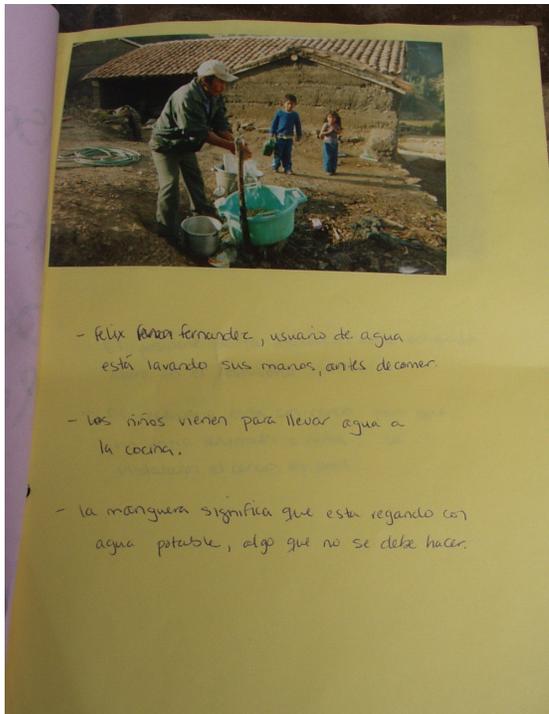
Figure 5.6 Photographs of Changes in Rural Communities-  
Directors of Water Users' Associations



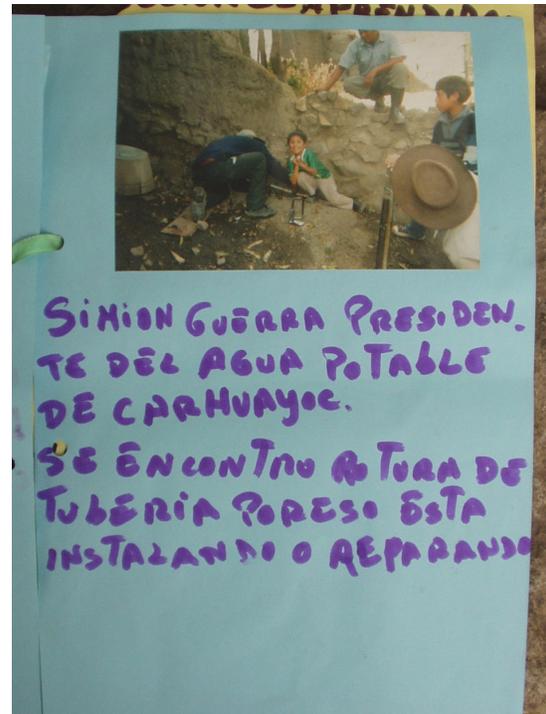
Chlorinating the community water supply



New household outhouse



Washing hands, collecting water for kitchen



Repairing a broken pipe

All of WUSCs teams were aware that they would be leaving soon and were working to ensure the continuation of the work they had started. Although the management-level team members had been to a meeting in Lima to discuss and plan for WUSC's exit, the teams were still deciding on which activities they would do and talking about how to coordinate their work with each other in order to make the transition as smooth as possible. There was no provision for monitoring the work of the municipality with the associations after WUSC left and one Management Team member said:

There is a risk that when a new mayor is elected he could dissolve the whole [urban water] association. Approving the fee will be a fight with the population that could increase the risk. The future of the water service depends on the population realizing that there are benefits to paying a fee that gives them the right to complain when things are not going well. We want them to accept their institution and defend it against any political currents, the elections are coming up and the candidates could promise that people do not have to pay for water. If the population is not prepared then they could begin to believe that again.

The creation of the Municipal Water Unit is one of WUSC's main strategies to support both the urban and rural water associations. A Management Team member stated that:

We've seen that the associations all by themselves are not sustainable; they need the permanent support of an institution and by law that should be the municipality. So we are preparing all of the procedures and mechanisms for them, they also have to know how to carry out evaluations of the associations, we're leaving them worksheets that will help them do that. We need to focus on supporting the Municipal Unit and the associations so that they will be strong enough when we leave. We're also trying to strengthen the ability of the counterparts to carry out this work. But legally the municipality is responsible so they will have to do something.

However, many team members felt that the municipality was not prepared to support the associations in this way. An Engineering Team member commented that:

The municipality is not yet ready to assume its role; the communities are going to have to demand that it does so. We're going to have to make sure that

the communities understand this in the time that we have left. The municipality still needs to gather political will to make this work, the current mayor needs to do it and later ones will need to as well... With the amounts that the municipality will pay the counterparts, it's a risk that they will find other work, so we're trying to get more people involved. We're counting on pressure from the population to make the whole thing work.

A member of the Sanitary Training team expressed doubts about the ability of the municipality to continue with the work:

I do not know how it will work because of the politics, when the new mayor comes in he might want to hire all of his friends and change all of the people who have experience in this work. All the counterparts know their jobs, but the doubt starts when there are elections, each candidate has their own people that they will want to put in place so that might hurt the Municipal Unit.

Additionally, members of the population at large, expressed doubts that the municipality had their best interests in mind:

They [local officials] do not hold open meetings, they only invite the people they want, they act like the money is already their own and they can do what they want. The mayors buy votes with food, alcohol, and coca and that's why people vote for them, not because we believe in them. They should invite everyone to the meetings, but if we go they do not let us enter, you have to have a special invitation. The development of the community does not matter to them.

Even local authorities were not sure if the next mayor would continue to support the associations or the Municipal Unit and thought that pressure from the general public to continue the work was its best guarantee. One official said:

God willing, the new mayors will continue to work with the counterparts that have been trained. What happens with a new mayor will depend on the community, but since they now know what the municipality should be doing, they have to ask for what they want. When they did not know how things were supposed to be, they could not ask for it, but now that they do, the new mayor will have to provide it to them. They'll just have to teach the new mayors how to do it.

## **Chapter Summary**

This chapter presented the findings from the workshops and semi-structured interviews that had been conducted for this research. In doing so, it addressed the research questions outlined in Chapter One and reveals that WUSC is contributing to various degrees to changing attitudes and capacities among the public, in school aged children, water user associations, water companies and municipalities in the two study locations.

While both project teams were trying to change people's behavior concerning water management, hygiene and conservation, the WUSC teams in the first study site did not feel that they were communicating to influence others, establish rules, norms or policies or to reinforce group identity. On the other hand in the second study site, some of the communication functions used most frequently were to influence others, and establish rules, norms and policies. In both locations, the teams regularly communicated to share information and knowledge. In neither location did the teams communicate to share talents and enjoy life or compete and gain advantage over others.

Project staff in both locations selected similar criteria for judging the quality of their relationships. Trust, communication, respect and responsibility were selected as criteria for "good working relationships" in both study sites. Respect and trust were listed with many points in relationships that received high scores in both study locations. In fact, interviews with WUSC team members and other stakeholders often highlighted trust as a key factor in helping change and learning to occur.

Also common to both case study locations was lack of communication, egotism and mistrust, as factors that create "poor working relationships." High scores in the lack of communication

category often pointed to relationships with low overall scores. Similarly in the interviews, complaints about a lack of communication correlated with relationships that had received low scores in the second workshop.

In both study locations, relationships that in the first workshop demonstrated a limited use of communication functions and a reliance on sharing information, transmitting time sensitive information and influencing others as the main functions of the communication, received a low score in the second workshop. Conversely, relationships with high scores in the second workshop were characterized in the first workshop by frequent and timely communication flows that incorporated many functions. This indicates that communication needs to be more dynamic, interdependent and go beyond just informing or influencing in order to create strong relationships that lead to lasting learning and change.

The WUSC teams did not focus on explicitly working to change the organizational cultural of the water company or the municipality. But rather it was assumed that through embedding the teams within the counterpart organizations, the long-term contact and regular communication and working together would lead to changes in the capacities of the counterparts and changes in the attitudes of the general public. The organizational values expressed through attitudes and actions that emerged from the interviews and participant observation are highlighted in Table 5.14.

*Table 5.14 Organizational Values as Expressed in Interviews*

Water Company/ Municipality	WUSC
Hierarchy	Shared responsibility
Repeating what has been done	Learning from experience
Individual power and control	Value of each member of team
Personal gain	Results based
Saving face	Creates meaning
Doing as told	Looking for creative solutions
Static following of procedures	Seeking new ideas and improvements
Crisis management	Long-term planning
Reacting to past	Actively creating future
Hoarding information for control	Sharing of information and skills

Overall, the work that each team was doing with their assigned areas and stakeholders seemed to be having good effect. In other words, the Engineering Teams worked well with the construction workers and field operators, the Social Team had good relations with the schools, the Management Team got along well with the water user associations, and the Sanitary Training Team had a good relationship with the rural water associations. However, the relationships in areas that were outside of their strict area of focus often did not have fluid communication or receive such high points, especially in cases where the other half of the relationship had a limited amount to offer such as the case for example with some water company managers or MINSA.