INTERNATIONAL LABOUR ORGANIZATION
EMPLOYMENT INTENSIVE INVESTMENT PROGRAMME

SERIES: GUIDES FOR INTEGRATED RURAL ACCESS PLANNING AND COMMUNITY CONTRACTING IN THE WATER AND SANITATION SECTOR

GUIDE N° 2

GUIDE TO DEVELOP INTEGRATED RURAL ACCESS PLANNING IN THE WATER AND SANITATION SECTOR

WITH A GENDER-BASED AND INTER-CULTURAL APPROACH

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Geneva, April, 2015

PRESENTATION

The ILO Employment Intensive Investment Programme (EIIP) has been using Integrated Rural Access Planning (IRAP) and Community Contracting (CC) tools for some years to plan and implement infrastructure works in different sectors and levels of government. By including an inter-cultural and gender-based approach these tools have been conveniently adapted and updated and have proven to be valid and effective for the Water & Sanitation Sector (W&S) as concerns their application among dispersed rural and indigenous populations. As a result, the ILO considers that they are ready to be applied in different national and local contexts.

One of the characteristics of how both tools have been adapted to the W&S sector has been the development and inclusion of a consultation process with indigenous populations under the framework of ILO Convention 169. This process has been carried out in Paraguay through participatory workshops attended by traditional and local authorities. This exercise helped to identify basic concepts and procedures, such as, the different levels of hierarchy consulted within a community and how much time this process takes, as well as an appraisal of indigenous knowledge concerning the location and management of water resources appropriate for their eco-system. Understanding these processes under the framework of an inter-cultural and social dialogue has helped to determine basic procedures that will be included in future W&S Sector planning and implementation processes.

The adaptation is the outcome of the experience in Paraguay, however, the achievements of other IRAP processes in countries such as Cambodia, the Philippines', India, Indonesia, Laos, Nepal, Nicaragua and Panama have also been considered. In addition, Community Contracting processes fostered in countries such as Ghana, Guatemala, Haiti, Madagascar, Mali, Nias, Pakistan, Peru, Somalia and South Africa have been taken into account.

The following three Guides describe how the adaptation process has been developed:

1. **Guide No. 1:** Conceptual Guide for Integrated Rural Access Planning and Community Contracting in the Water and Sanitation Sector.
2. **Guide No. 2:** Development of integrated rural access planning processes in the water and sanitation sector.
3. **Guide No. 3:** Community contracting to implement works and administrative services.

The purpose of this series of guides is to contribute to the development of the Water and Sanitation Sector (W&S) in different local and national dispersed rural populations. Consequently, the adapted and updated IRAP tool should be integrated into the W&S sector and increasingly applied in global projects and programs and, the Community Contracting methodology should be adapted and updated in order to be applied in the Rural Economy

context for the use of sectoral and local government programmes and projects that have been integrated into the IRAP, beyond the water and sanitation sector.

Guide No. 2 aims at presenting an integrated rural access planning model adapted to the requirements of the Rural Water and Sanitation Sub-Sector, focusing on its application in dispersed indigenous and rural communities. The experience of Paraguay between 2009 and 2012 has been used taking into account the achievements of ILO implemented IRAP processes in several countries such as Cambodia, the Philippines', India, Indonesia, Laos, Nepal, Nicaragua and Panama and also in Community Contracting processes undertaken by countries such as Ghana, Guatemala, Haiti, Madagascar, Mali, Nias, Pakistan, Peru, Somalia and South Africa.

This Guide has **two chapters**: the first provides a **general introduction to the document and its use** for users, as well as a description of the overall framework in which it has been prepared. The second chapter is made up of the **Guide to apply IRAP in rural territorial planning of the use of water and sanitation.** This part of the Guide provides a detailed description of the activities to be developed by the Promoter Teams of State agencies (or private entities such as NGOs) that provide these communities with a number of solutions and systems. **The process concludes with the subscription of the Community Contract** that specifies the commitments assumed by each party: Responsible Authority, Local Authority, Community –Authority and others who may eventually participate in this planning process.

The specific IRAP tool adapted to the W&S Sector is the **multiple factor priority matrix** that enables the user to choose the area of a municipality or province (the Planning Area) among several closely housed or dispersed populations that lack one of these two services as priority intervention areas. Guide No. 1: Conceptual Guide, that is part of this series, studies this tool.

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Geneva, April, 2015

CONTENT

ACRONYMS

W&S	Water and Sanitation
CC	Community Contracting
DASOC	SENASA Directorate of Social Affairs
ERCA	Rapid Evaluation of the Quality of Water, PAHO-WHO methodology
MyPE	Micro and Small Businesses
MESUNCO	Improve your Construction Business, ILO methodology
ILO	International Labour Organization
NGO	Non-Governmental Organization
PDO	Private Development Organization
PC	Joint Programme of the United Nations
PAHO-WHO	Pan American Health Organization – World Health Organization
IRAP	Integrated Rural Access Planning
EIIP	ILO Employment Intensive Investment Programme
UNDP	United Nations Development Programme
SEAN	Natural Areas Service of Paraguay
SENASA	National Environmental Water and Sanitation Services of Paraguay
UNICEF	United Nations Children's Fund

1. ABOUT THIS GUIDE

1.1 Who is this Guide for?

This Guide is mainly for **officials in charge of making decisions and promoters of entities** in charge of supplying water and sanitation to rural populations in general and indigenous and dispersed populations in particular.

The guide has been conceived as **an operational tool** to help these promoters develop their desk and field work during the Planning and Community Contracting processes in order to implement the works and to supply public utilities in rural areas. The Community Contracting Guide (N°3) is supplementary to this Guide (N°2).

1.2 Who are the main stakeholders of the planning process?

1.2.1 The Responsible Authority

These include government entities that have the power, purpose and resolve to develop and promote individual water and sanitation supply systems or solutions[1] for rural populations in general and, indigenous populations in particular. These entities may include: ministries or national public institutions in charge of providing W&S; regional, departmental or provincial sub-national governments that have this mandate; local or municipal governments that are charge of providing W&S for their local inhabitants.

1.2.2 Promoter Entities

As concerns most experiences, the promotion departments, areas or directorates of the Responsible Authority are in charge of field promotion. This is generally the case when, aside from promoting systems or solutions, these entities are also in charge of accompanying their social and business consolidation.

Sometimes the Responsible Authority contracts specialized entities to promote the systems and develop the planning processes. Mention must be made of Non-Governmental Organizations (NGOs) that play a dynamic role in promoting and implementing local development projects, including the supply of W&S. These institutions have the power to directly promote their own programmes and projects or, as outsourced entities, provide services to public entities upon demand.

[1] Solutions are considered as the individual supply of W&S services that are not really systems.

1.2.3 The target population

This group comprises several sub-groups of stakeholders depending upon their relationship with and inside the community and their links to the W&S systems or solutions. These groups may involve:

Community leaders or authorities. This refers to individuals who officially hold leadership positions in certain community organizations within the project's areas of intervention.

Although some community authorities have the capabilities needed to support promotion and planning, constant coordination is nonetheless required during the work process, with a particular focus on those who are less prepared.

Social leaders. These are the individuals who regardless of holding a public, community, social or religious position or not, have the full backing of the members of the local community. Their reputation is not challenged and they are capable of guaranteeing a balance between their acts and appropriate decision making. For instance, school teachers, doctors or health officials in charge of the health posts, the parish priest or pastor of Churches present in the area.

These leaders must be familiar with the objectives of the process to be achieved in the community and, in coordination with community members, how to approach the community. The influence and credibility of these leaders facilitates the project development process which aims at benefiting the target group.

The beneficiary community. In a broad sense, the beneficiary community is the organized or non-organized population linked to the project. The definition of the members of the beneficiary community is important because it represents the project's scope of intervention.

As concerns the dispersed population restrictions in the community and physical dispersion have a severe impact on identifying the beneficiary group and thus, the initial promotion process.

A lack of clear identification of the beneficiary population at the initial stages can seriously affect the sustainability of the project

In populations that have a certain degree of clustering, identifying the community is relatively simpler because of its physical concentration and higher level of communication. If a community does not have an organized group that is representational, this can be promoted and its members can be trained, of course, respecting local habits and customs.

As concerns indigenous communities**,** identifying the beneficiary community is easier because its inhabitants have a highly developed sense of belonging and recognize their leaders.

Key informants. These people are capable of providing true and reliable information as an input for the community prioritization process and to promote planning.

1.3 Who are the members of the team of promoters?

The Responsible Authority or Field Entity is in charge of promoting and developing the subsequent promotion process. As has already been mentioned, their own in- house promotion offices can develop the process or service to be outsourced by contracting enterprises or specialized organizations such as NGOs. Whichever the case, there must be a **Responsible Team** in charge of the promotion and, if so, it must also include the subscription of the Community Contract.

For this purpose, the promotion team must be made up of the following individuals and entities:

- One national,[2] regional or local representative of the Responsible Authority, with the power to represent.
- One representative of the Local Authority, delegated by a Mayor or a Municipal *Intendente* or by a provincial or departmental authority in cases in which they are not directly in charge of supplying W&S.
- One social promoter, preferably a person from the intervention area or who is familiar with it. Should the team work involve actions with the indigenous population, the promoter must speak the language of the target population.
- One planner who is knowledgeable about IRAP or has who been trained to apply the Guides that are part of this series. This person must be the technician in charge of the promotion process and technical outcomes of the Planning Process.

[2] In this case, the organization depends upon the competent National Government or entity that has the mandate to promote and implement W&S systems and solutions.

1.4 What are the expected outcomes of the planning process

The expected outcomes of the planning process are:

Diagnostic Report of the W&S Needs of the Communities within the sphere of the municipality or planning area.

Diagnosis of the need for Water and Sanitation in Communities within the Planning Area

- List of Priority Communities

1. Map of water sources and coordination with the **water authority** of the watershed or sub-basin.
2. List of W&S investments of the municipality or area of intervention. This refers to the valuation of the works required by the prioritized populations. The contributions made by each party must be mentioned (See point 3.8. of Guide 1)
3. Community Contract entered into between the Responsible Authority and the Chosen Communities, which must include:
   - Community commitments
   - Contracting entity commitments
   - Definition of the W&S technology used
   - Implementation of Works Calendar
   - Contracting Entity contributions
   - Community contributions
   - Responsibilities concerning the Future Operation of the System
     - Individuals in charge of management
     - Payment of rates
   - Supervision of entity in charge of the system's management and maintenance
     - Concerning the quality of water
     - Review of accounts and updating of rates

1.5 The gender approach

There is sufficient evidence at a global level about the fact that basically women fetch water as a fundamental contribution to the wellbeing of their families, much more than that of men. Tradition and culture that dictate that women must satisfy the basic needs of their families[3] are the factors that determine this unequal distribution of time and effort.

As concerns changing cultural habits and customs many factors are involved that go far beyond the scope of this Guide. However, once access to water in rural areas is improved this benefits all the inhabitants, particularly women. Therefore it is

[3] The role women play in satisfying the basic needs of rural families involve the supply of water, firewood, food and child-rearing.

recommended that W&S projects should adopt a gender-based approach from the onset of the planning stage.

It is estimated that this approach will have a positive effect not only on women but other vulnerable groups as well, such as the elderly and children, another aspect of women´s chores. Consequently, the Responsible Authority and the Promoter Team must develop a fundamental policy enabling the beneficiary women of a project to participate in all its stages.

The women beneficiaries of the project must participate in all its stages, from the planning and execution of works, to the operation and maintenance of the systems that are implemented.

However, we must bear in mind that often women who come from isolated rural areas or indigenous communities do not speak openly about their needs or problems to a man who is not a member of their family or community, nor even in the presence of men who belong to their own community. This is why the planning teams must have members of both genders. The presence of women on the planning team may help the women of these communities to speak out and have a say, that their opinions be noted and, eventually, be included in decision making.

Women participants of the planning team should ensure that views of women in communities, in particular indigenous women, are expressed, collected and adequately articulated in the decision making.

1.6 The inter-cultural and vulnerable groups approach

Just as in the former case, the opinions and information of other vulnerable groups, such as **the extremely poor**, must be taken into account and included from the beginning of the process, precisely because it is much more difficult for them to have a say, participate and express their views. Another very important group is **indigenous populations** that reside within the jurisdiction of the municipality or the planning area, since they are often excluded and discriminated against.

Other vulnerable groups may be **individuals who due to their ethnic characteristics or certain religious, historic, economic, political or social affiliations are excluded or discriminated against.** For instance, groups of migrants, displaced persons or refugees due to internal or external armed conflict. Under these circumstances, access to water

is linked to the camps of refugees or displaced persons where water is a scarce resource and often the object of manipulation, discrimination and domination.

A frequent example in refugee camps is the pressure on women to provide sexual favours in exchange for water

A person's age may also be a factor for being excluded. Therefore, **mechanisms must be created to gather the opinions of the elderly, children and adolescents** as concerns access to water and sanitation services in schools and educational institutions. All too often the supply of these services in such places is blatantly deplorable.

An important aspect in any IRAP process is to avoid a political party or group from **politicizing the subject**. The Planning Team must take the necessary precautions in order to enable any member of a political party or group to gather under conditions of equality and to avoid them from using the IRAP process in their favor or against other members of the community. The promoter team must foster a commitment for participant collaboration in order to ensure that everyone has been included in the planning process.

When a politicized or ideological environment is detected, it is advisable to call for an information meeting with representatives of all potentially challenging segments before starting the IRAP process, in order to ensure that the planning involves all in an equal manner.

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GUIDE FOR THE SECTORAL APPLICATION OF IRAP IN W&S

As concerns its overall application, the IRAP[4] aims at helping to satisfy the basic needs[5] of the rural population in a cost-effective manner, improving access to basic social and economic services needed for a decent standard of living.

The IRAP includes the identification of access issues to basic services in the area involved, the prioritization of these problems and the identification of the most appropriate interventions so as to solve them.

As a participative planning tool IRAP helps to make objective decisions. It is participatory because the process takes into account the points of view and opinions of inhabitants, thereby prompting a proactive, creative, innovative and positive attitude. It is objective because decision making is based on the primary data collected in the towns, villages, hamlets and communities which enables us to compare these populations and to determine the degree of satisfaction of needs related to several sectors (or in this case, a specific sector).

The IRAP is based on the collection of primary data and the participatory construction of consensus

By applying the IRAP procedures the planners can have a full picture of the planning area (or area plan) and can use this information to make more effective decisions.

2.2. The sectoral application of IRAP[6]

As concerns its traditional application, IRAP is a 10 step process that includes data collection and supervision and monitoring the plan's implementation. As concerns the sectoral W&S application, adjustments were made that led to an 8 step process that includes as a substantial element, the subscription of the Community Contract and the implementation of the works by the community.

[4] Taken and adapted from: Cartier, Serge. Editor). Integrated Rural Access Planning. ILO, Lima, 2005. (Page 16).
[5] Basic needs of rural families are related to water supply, firewood, food security; social welfare aspects to health and education; economic welfare aspects to agriculture, livestock and cottage industry. Taken and adapted from http://www.ilo.org/global/topics/employment-intensive-investment/lang--en/index.htm
[6] Taken and adapted from: Salomón, Emilio. Integrated Rural Access Planning in Water and Sanitation. Application Manual. Joint Programme "Building skills to define and apply Water and Sanitation Policies. UNDP, PAHO-WHO, UNICEF, ILO. Asuncion, Dec. 2012.

2.3. The IRAP planning process for W&S

2.4. Table 1 presents a schematic view of the IRAP process and the Guide of Activities according to each phase of the planning process:

Table 1: Guide of Activities for the W&S IRAP process

PHASE 1	ACTIONS PENDING
1. PREPARATION	1.1. Organize the Team of Planning Promoters
	1.2. Prepare the instruments to collect data
	1.3. Plan coordination meetings with local authorities
2. PRELIMINARY COORDINATION	2.1. Coordinate with local authorities
	2.2. Brief community leaders and authorities
3. DATA COLLECTION	3.1. Obtain secondary source data
	3.2. Train the team of surveyors
	3.3. Obtain primary source data
	3.4. Interview key government informants (local, watershed, water, health and sanitation authorities etc.)
4. DATA PROCESSING AND PRIORITIZATION OF COMMUNITIES TO BE INTERVENED	4.1. Order the data collected
	4.2. Train data keyboarders and supervisors
	4.3. Data analysis
	4.4. Prepare the Community Matrix of Priorities
5. VALIDATION OF THE INFORMATION PROCESSED AND DELINEATION OF MAPS	5.1. Validate the data processed and priorities established
	5.2. Delineate water sources and sanitation maps from the perspective of the watershed
	5.3. Seek over-arching solutions among sectors and provide solutions for several communities
6. DRAFTING AND APPROVING INTERVENTION PROPOSALS	6.1. Draft and approve intervention proposals
	6.2. Adopt basic agreements to subscribe the community contract
	6.3. Draft technical and economic proposals of the projects
7. APPROVAL OF THE PROPOSAL BY THE COMMUNITY AND THE RESPONSIBLE AUTHORITY	7.1. Include the works in the annual budget of the responsible entity
	7.2. Community approval of the technical and economic proposal
	7.3. Local Authority approval of the technical and economic proposal
	7.4. W&S Responsible Authority approval of the technical and economic proposal
8. SUBSCRIPTION OF THE COMMUNITY CONTRACT	8.1. Draft the Community Contract
	8.2. Subscribe the Community Contract between the Responsible Authority, the representatives of the community and other entities engaged in the process, such as, the Water Authority and Local Authorities

PHASE 1: PREPARATION

This phase of the process involves organizing the Planning Team and preparing the material instruments to collect primary data. Moreover, it aims at planning coordination meetings with local authorities in the geographic areas to be intervened such as counties, municipalities, watersheds, provinces, etc.

1.1. Organization of the Team of Planning Promoters

This team will be in charge of the planning process to be developed in the territories to be intervened. (See Annex 1: MAPS OF THE INTERVENTION ZONES IN PARAGUAY). As has been mentioned in the Conceptual Guide (**Guide No. 1** of this series), the Responsible Authority as concerns the supply of Water and Sanitation in the country is in charge of carrying out the planning process. In some countries the national entities that depend upon the Executive Branch do this job; in others municipalities or regional (provincial or departmental) governments are in charge, usually through municipal owned companies.

The Promotion Unit of the Responsible Entity is in charge of organizing the promoter team as suggested in point 1.3 Who are the members of the team of promoters? : One representative of the Responsible Authority; one Local Authority, if this person is not the responsible authority; one social promoter of the area who speaks the language of the indigenous populations, as required, one planner in charge of the technical development of the planning.

In order to fully acknowledge this team, the heads of the entities of origin must issue duly signed resolutions of appointment. The objective is that the heads formally appoint the members of the Promotion Team mandating them to carry out their duties.

1.2 Preparation of instruments to collect data

An appropriate questionnaire must be used to collect primary source data (See Annex 2: MODEL FORM TO CONDUCT INTERVIEWS WITH KEY COMMUNITY INFORMANTS).

The ILO used this form during the application phase for the Joint Programme for Water and Sanitation (UNDP, PAHO/WHO/UNICEF/ILO)[7] in Paraguay (JP W&S) and later, in the joint application by the Responsible Authority[8], the National Environmental Water and Sanitation Service (SENASA).

[7] Joint Programme "Capacity building to define and apply Water and Sanitation policies". UNDP, PAHO-WHO, UNICEF, ILO. Asuncion, Dec. 2012. Three districts in two departments were intervened.
[8] At first, the ILO decided to contract a consulting company as the Planning Team. Later it was decided that the Promotion Area of SENASA assume this function.

The objective of this activity is to have the materials approved and in sufficient quantity as needed for the field interviews.

1.3. Planning coordination meetings with local authorities

In order to plan coordination meetings with local authorities the Planning Team (PT) must define the departments and geographic areas to be intervened and know who will be interviewed: (Mayor or *Intendente*, Aldermen or Municipal Secretary).

Depending upon the prevailing conditions telephone calls or via internet will be used to coordinate the date and time of the appointments and agenda items to be discussed.

When coordinating with community leaders it is highly improbable that the Planning Team will have the necessary contacts *a priori* because they usually travel from their habitual place of work to the areas of intervention. Therefore, in order to set up meetings with these leaders, first we need to see the results of these coordinated meetings with the local authorities.

The objective of the activity is to have a coordinated plan of the meetings, including the necessary logistics, that is, transport, per diem and other necessary resources, depending upon the scope of work to be developed.

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PHASE 2: PRELIMINARY COORDINATION

This part of the preparatory stage differs from the former phase that involved desk work. In this case field work is coordinated with local authorities and community leaders or community authorities of Indigenous Communities.

2.1. Coordination with local authorities

The purpose of coordinating with local authorities is to inform them about the scope of the interventions to be performed within their municipalities and to raise their level of awareness about the actions being developed or that have been planned for the future in the W&S Sector. The support of local authorities is also needed for the coordination with community leaders.

In order to develop this activity the Planning Team (PT) must manage the conceptual discourse that governs the activity of W&S supply (Guide No. 1 of this series). Moreover, the Planning Team must clearly understand the scope of the interventions to be done in the municipality, such as, the possible number of communities to be attended, amount of money available for these interventions, available funding sources, intervention conditions, scope of an eventual participation by the municipality, etc. Moreover, the PT must manage the scope of the IRAP model (Guide No. 2) as well as the concepts and scope of the CC (Guide No. 3).

The Planning Team must explain the steps involved in the planning process to the authorities and clearly define the support needed from the municipality (or the *gobernación* if this is the case). **It is of the essence to remember** that not all the communities who lack W&S services in the municipality can be funded at the same time and therefore priorities must be established. Mathematical indicators will be used to determine the priorities in order to guarantee a technical selection thus avoiding any political distortion.

It is important to highlight that not all the Communities that lack of W&S can be financed at the same time, thus a prioritization will be necessary in order to determine which Communities will be addressed first and which ones later

Perhaps the authorities would like to know how the prioritization system works. The Planning Team must have a sound management of the criteria to be used and how the prioritization indicators and weighted matrix work (Chapter 3, Guide No. 1).

Finally, the Planning Team will ask the local authorities for their help in contacting the community leaders or indigenous leaders. Moreover, should the local authority want to

include other communities that perhaps were not taken into account, the promoter team will proceed in keeping with their institution's policy guidelines. Finally, should the Planning Team and Responsible Authority have not prepared the List of Pre-Selected Communities it must be prepared jointly.

The panel shown below presents the practical application developed in Paraguay. This Guide contains several rose colored panels of the case developed in Paraguay.

The *Gobernadores* (departmental authority) and *Intendentes* (municipal authority) were identified in the target departments of the Paraguay Programme their intervention was agreed, they appointed the delegates that would represent them on the Planning Team:

- In the District of Filadelfia the Head of the Directorate of Indigenous People of the *Gobernación* and the Head of the District's International Cooperation.
- In the District of Caazapá the Secretary of the Environment of the *Gobernación* and there was no municipal appointment.
- In the District of Abai the Person in Charge of Projects of the Local Development Council, there was no participation from the *Gobernación*.

The teams of planners appointed by the Responsible Authority and made up of the representatives of the Local Authority pre-selected the Communities that will be prioritized following the IRAP procedures.

Coordination with community leaders was then conducted and the relevant meetings were convened.

2.2. Briefing with community leaders and authorities

Once the List of Pre-Selected Communities has been defined, the Planning Team made up of the representatives of the local authority determines the necessary contacts to convene the community authorities for a briefing. Due to functional reasons and because the political commitment must be assured, it is preferable to convene the meeting at the municipality.

A Power Point or flipchart with the following information should be used:

1. Objectives and mission of the Responsible Entity.
2. Participation of the Local Authority.
3. Scope of interventions to be conducted at the municipality: Pre-Selected Communities and criteria they use.
4. Explication of concepts that substantiate the prioritization indicators.

5. Information needs to prioritize. Interview forms to be filled in by key informants. The community will choose the key informants.
6. Non-political nature of this mathematical type prioritization.
7. Perspective for non-prioritized communities on this occasion. Usually non-prioritized communities are admitted into a plan the second year and from there on.
8. Scope of Community Contracting and community participation levels to plan and implement works processes and particularly as concern service operation and maintenance.

   As concerns native communities, mention will be made of the fact that the participation will be adjusted to the Prior Consultation criteria if the country has ratified ILO Convention 169 and the Law of Consultations has been enacted.

The objective of the informative meeting with community leaders and authorities, is to prepare the conditions to initiate the planning process through the collection of data in the field

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PHASE 3: DATA COLLECTION

Data collection is the starting point of the planning process. The purpose of data collection is to obtain reliable information that can be used to prioritize the communities and also to identify the data regarding water sources, existing systems, sources of contamination, restrictions to implement W&S services, etc. jointly with them.

Let us remember that this data is used to define priorities to attend a community that belongs to a municipality, Intervention Area or Planning Area[9] and that does not have W&S services or have such services but they are in ill repair or insufficient. The information must also be helpful to identify the technologies that will be used in each case.

3.1. Obtaining secondary source data

Secondary source data is obtained from publications, studies and other documents from public or private entities. These provide general economic, geographic and demographic information of the intervention area and enable the planner to place each inhabited area within its context. Secondary source data can also provide the location of the current water and sanitation services, information on projects and programmes of other entities that supply these services. The information gathered must be disaggregated by gender as much as possible.

The following are examples of the data to be collected at this level:

- Population (numbers and densities)
- Distribution per village
- Number of families per village and its overall structure
- Percentage of inhabitants involved in economic activities
- Current water supply and sewage facilities in the area, their location, quality and condition
- Transport Infrastructure (access roads, type, length, location, condition)
- NGO and existing projects in the area
- Basic maps to be used in the Mapping are collected from these sources

The information of secondary sources allow to put in context the populations under study. This information must be disaggregated by gender as much as possible.

[9] The Planning Area is the geographic area in which the IRAP process will be developed. This denomination is used when the planning area does not match a specific political area, for instance, a watershed or county

3.2. Training the Team of Surveyors

Once the Responsible Authority has appointed or contracted the team of surveyors who will apply the survey, the Planning Team must train its members in order to guarantee that they will adequately apply these questionnaires in the field.

As concerns the first application done by the ILO in Paraguay through a consultancy, the surveyors were officials from the *gobernaciones* and municipalities appointed to intervene in the process.
As concerns the second pilot application the surveyors were officials from the SENASA Promotion Area.
In both cases, these officials were trained by the ILO experts in charge of transferring the relevant methodologies.

Table 2 contains a typical Training Plan developed by the ILO[10].

Table 2: Example of a data collection training programme

SESSION	Subject	Trainees
1	How to conduct an interview	Surveyors and Supervisors
2	How to apply the questionnaire	Surveyors and Supervisors
3	Field tests (pilot application)	Surveyors and Supervisors
4	Field test evaluations	Surveyors and Supervisors
5	Training the supervisors	Supervisors

The pilot application of the questionnaire is done to enable the surveyors to learn how to use the instrument but it also aims at gathering observations and proposals in order to adjust the forms if required.

The pilot application should be done in a community that has the characteristics required to be a representational sample of the universe to be intervened. If there are two clearly distinguishable universes a pilot should be run in each, as in Paraguay where the **Eastern zone** has heavy rainfall and is more integrated into modern economy than the **Western zone** that has a semi-tropical climate, scarce rainfall and a higher presence of indigenous populations.

[10] R. Dingen. Modular Package to Train IRAP. ILO, Geneva, 2000.

Interviewers should be trained about the implementation of the questionnaire. An inefficient implementation undermines the virtue of the process and can lead to poor decision-making.

3.3. Obtaining primary source data

Primary source data refers to data collected from the inhabitants through surveys or interviews with leaders or other key informants.

Key informants. These are usually local people who speak in representation of the group, such as: teachers, health professionals, leaders of women's organizations or heads of churches, etc.

Primary source data aims specifically at obtaining information about the communities Water and Sanitation needs, water sources and their possible contamination and their capacity to manage the systems implemented.

Although primary source data is preferable for IRAP processes, we must remember that in this case more funds are required. Therefore, the option of basing the analysis on primary or secondary data depends upon the amount of resources available.

IRAP has discovered that the combined application of interviewing groups of key informants and some families in representation of a community is an adequate and reliable method to collect primary data.

As concerns the families, a certain selection procedure, representational of the existing groups, must be chosen based on their a priori identification. This also includes people who will not be interviewed in order to be free of any suspicion. One valid method is at random, but this not always is the best. Data may also be obtained by geographic location, level of income, etc. This is why secondary source data must be linked.

3.3.1. Questionnaires

Questionnaires are the basic instrument to collect data from target communities. Annex 2: MODEL FORM TO CONDUCT INTERVIEWS WITH KEY COMMUNITY INFORMANTS contains a questionnaire that was applied in the W&S Joint Programme in Paraguay. This questionnaire is the result of an adaptation of the ILO[11] IRAP Guide generic model regarding W&S sectoral needs and the social, cultural and institutional reality of the target regions.

This questionnaire may be used in both groups (inhabitants and key informants). However, it must be pointed out that this questionnaire may be adapted for each

[11] Questionnaire developed at the Workshop Course: "IRAP in W&S in Paraguay". Deelen, Linda. ILO. Asuncion, 2011.

group in particular or a given local situation. Certain questions may be added, deleted or modified.

Below are examples of the data to be collected at this level:

- Basic, physical and socio-economic characteristics of the village
- Location of the W&S services and facilities, as well as their condition and the quality of the service
- Infrastructure used and its condition
- Amount of time it takes to reach the water sources and facilities available for this purpose
- Frequency of trips to water sources
- Type of instruments (deposits) used to fetch water
- Type of means of transport (human, animal, non-motorized vehicles)
- Family distribution of water responsibilities
- Perception regarding access to water and its quality
- Priority the community assigns to water and sanitation
- Presence of contaminating elements in water sources[12]

3.3.2. Decision making

The interview must be carried out by previously trained surveyors according to the Plan suggested in **Table 2.** The Responsible Planning Team supervises the work of the surveyors.

As concerns the Joint Programme in Paraguay, the ILO supervised the first pilot application through the contracted consulting company and officials designated by local authorities. In subsequent applications the Department of Social Affairs of SENASA was in charge of the implementation and supervision.

It is recommended that each group of interviewees be made up of two people one of which must be a woman. It is estimated that each group can visit 2 villages or communities per day. The supervisors also need to be trained in order to coordinate with the teams of surveyors and to agree upon the logistical support they will receive.

Each supervisor may take responsibility over three surveyor teams. It is preferable to have supervisors who are part of the local authority. The study will determine the number of villages to be intervened and the number of surveyors and supervisors who need to be trained. It is estimated that the training would take one week.

[12] As concerns Paraguay SENASA tested the presence of residual chlorine in potable water systems (See Annex 2 Water Section and Annex 4 Table 7). However, water quality tests are even more complex and therefore are only described by way of reference, in Chapter 3.7 of this Guide.

The report of the IRAP application of the Joint Programme in Paraguay mentions that in general exact data about the number of people who reside in the native communities is not managed.

The *Gobernación* of the Department of Boquerón used to do a census on Indigenous Communities. This census was a trustworthy source of information, even for the communities themselves.

It is very difficult to obtain reliable demographic data from communities belonging to the Ayorea ethnic group because these people are nomads and also because in some cases, the numbers reported included the leaders' future vision of their community.

3.4. An example of how data is collected:

Application of a Questionnaire

A questionnaire adapted to the local reality is applied in groups of qualified stakeholders from each community bearing in mind their cultural characteristics. By way of example, below is the information describing how the questionnaire was used in the indigenous communities of the District of Filadelfia, Department of Boquerón, Paraguay. The main characteristic of these communities is that they are made up of extensive families organized into tribes:

Application of a validated questionnaire in target communities of the District of Filadelfia, Department of Boquerón

- The questionnaire was applied on October 5 in the community called **2 de Enero**. The key actors interviewed were Angel Chiquenoi (Leader), Genardo Chiquenoi (member, the leader's son) Jurg Chiquenoi (member).
- The questionnaire was applied on October 5 in the **Jogasui** community. The key actors interviewed were Nicodemus Dosapei (schoolteacher, the leaders's son) Eulario Dosapei (member) Geraldo Dosapeio (member).
- The questionnaire was applied on October 5 in the **Ijnapui** community. The key actor interviewed was, Carlos Estakore (Leader).
- The questionnaire was applied on October 5 in the **Tunucojai** community. The key actors interviewed were Joime Estacore (First Leader), Guebei (2nd leader) Isaisa Posoraja (secretary).
- The questionnaire was applied on October 5 in the **10 de Febrero** community. The key actors interviewed were Danilo Chiquenjoi (Miembro), Teresina Chiquenjoi (member) María Chiquenjoi (the leader's daughter).
- The questionnaire was applied on October 5 in the **15 de Septiembre**. The key actors interviewed were Pepe Chiquenjoi (member), Cecilia Posijo (member) Angela Posijo (member) Lidia Posijo (member) Hugo Estakore (member).

As can be seen, all the interviews were done on the same day. The consulting company prepared the "operation" since its team members had to travel to the capital, Asuncion, which is more than 600 km. from where the communities are located. This was successfully accomplished thanks to the full support provided by the Gobernación and several teams of the consultancy company who operated simultaneously.

In most cases the team of professionals was attended by the "principal leader"[13] *accompanied by the "second leader" and, a third member of the community council, usually the Secretary. If one of these members is unable to attend, the principal leader designates another member of the community in his place.*

Some progress has been made as concerns the inclusion of women on the community councils, a fact which is unprecedented since formerly women were relegated to a lower rank in the communities'' social affairs. This reveals that today the community is much more integrated into modern thinking. Local authorities have played a key role in the inclusion of several women in the meetings.

3.5. Consideration of gender in this phase of the process

Evidence on the prevalence of the secondary role of women led to include questions concerning the division of work at home: Who does what? What is the role of women and men as concerns access to W&S? How much time do they spend on W&S activities?

The Planning Team must adopt special measures to enable women to express their needs. An adequate environment must be created to make women feel comfortable. For instance, if women from a given locality prefer not speaking in the presence of men, the informants can be split into two groups, one for men and another for women. It is important to have women as members of the Planning Team. In this case, the female surveyor encourages meetings with women wherever they feel comfortable.

Similarly, an additional meeting can be planned, exclusively for women, on another date. Inviting organized groups, such as, handicrafts, glass of milk programme and community kitchen committees, wherever such organizations exist, is a practical way of prompting the engagement of women since they are more accustomed in participating and speaking in public.

[13] As concerns the traditional organization of indigenous communities in Paraguay there is a principal leader, or 1st leader, who is always accompanied by a second leader and a third member of the community council. Each is elected by the community according to its tradition methods. Very seldomly have women been elected as leaders.

3.6. Interviews with key government stakeholders

Aside from applying the questionnaires on community stakeholders, the diagnosis may be enriched with interviews to government actors, such as, those in charge of the departments of national organizations and officials from the *gobernaciones*[14] and municipalities involved in the W&S sector.

In the example shown below, only officials from the *Gobernación de Boquerón* were interviewed since they share the responsibility of the supply of potable water with the indigenous organizations of the Ayorea ethnic group.

Questionnaire applied to the Secretary of the Indigenous Communities of the *Gobernación*, Mr. Cándido Galeano

- The communities have a water harvesting system from rooftops which stores the water harvested in a cistern tank. During droughts water trucks from the *gobernación* provide potable water each 15 days or whenever there is a demand from the community.
- As concerns the indigenous communities' educational level he indicated that at least 5% attended school, however very few actually know how to read and write. He explained that the basic knowledge of plumbing, construction and mechanics by some community members is entirely empirical.
- As concerns water sources of the indigenous population he mentioned: community and family owned cisterns or *tajamares,* Australian tanks and, in some cases, pits.
- He explained that the Gobernación provides the appropriate rooftops and cisterns. It is estimated that more community or family owned cisterns will be provided.
- The *gobernación* has water maps that indicate that the water table is brackish. Some communities have fresh water, but he warns that if this water is used by other communities, the water table in the well would drop and become brackish. Superficial wells must be 20 to 30 meters deep. The *Gobernación* does not have the special equipment needed to dig these wells.
- The desalinization equipment is extremely expensive and therefore the investment is not sustainable.
- An aqueduct to transport water would be a definite solution and this currently in the making, but the Project will still take time since it is large and is in the hands of the National Government.
- He informed that the communities have tractors and other means they use to fetch water in times of drought.
- As concerns the possible solutions and projects, Mr. Cándido reasserts that the solution with a safe roof to collect water and the community and family owned reservoirs in addition to the Wells with pumps, if possible, is the best solution.

[14] The *gobernaciones* refer to the second level of government that may be regional, departmental or provincial.

Comments from the interview to the Secretary of the Indigenous Communities of the Gobernación

The Secretary has a broad knowledge of the water problem in the Ayorea communities suffering from a severe water stress. The presence of the National Government is limited, and this has obliged the Gobernación to take charge of attending these vulnerable populations. There are low-cost solutions which are managed by the budget of each department. Higher level technical solutions are out of reach of the Gobernación, as well as the channel case, a mega project to deviate water from the Paraguay River up to the Chaco region.

Questionnaire to Prof. Daniel Falcón, Secretary of Education of Gobernación

- Mentioned that the members of indigenous communities suffer from diarrheic illnesses when there is scarce rainfall, since they drink water that is not safe.
- Mentioned that the Ayoreo people have been informed and trained about the use of chlorine and the importance of drinking potable water in order to avoid getting sick, but they argue that their bodies are used to drinking water without chlorine, aside from the fact that they do not like drinking potable water because it does not taste good.
- Indigenous people have asked for family sanitary latrines, since this would provide them with a greater level of comfort for their physiological needs and because they would dispel the odor and flies attracted to places where there are no latrines. He said that in general the indigenous people gather and burn their waste but have no strong hygiene habits as concerns handling the community's waste.
- As concerns the educational level, he explained that in the Ayorea culture the girls and boys can carry out activities at their will and therefore can decide for themselves if they want to go to school or not. Moreover, the level of assistance is more than 50% and is not regular. He added that the level of the school programme in these communities is not comparable to that of the general school programme.
- As concerns adults, he mentioned that less than 5% attended school. This has happened because these communities have been the last in adopting the Latin culture.
- Some community members may have a notion of plumbing, construction, carpentry, mechanics, but it is merely empirical.

Comment of the interview to the Secretary of Education of the Gobernación:

This interview reveals the low level of assimilation of the Ayorea ethnic group into the country's modern life style and the prevalence of concepts that demonstrate a low level of basic education, such as the idea they their bodies are better prepared to drink polluted water. When mentioning the higher incidence of diarrheic illnesses during droughts because they drink water used for animals, he is referring to the use of water from "tajamares" which is the water collection method used by the owners of the haciendas close by the communities.

It is interesting to note that these indigenous groups have become more aware about using latrines instead of defecating outdoors. The campaigns launched by the Ministry of Health has been a great help to raise awareness about the use of latrines and this continues to be one the main demands of most communities. It is nonetheless surprising to see how badly they manage their solid waste disposal.

It is also surprising to realize how these children have too much freedom to choose if they want to go to school or not. This explains why there is such a low level of school attendance and its strong impact on the development of the community as a whole. To a certain degree, this explains why the trades related to the technical development of the W&S sector have been based on empirical knowledge.

Questionnaire to Dr. Gladys Flaming, Health Secretary of the Gobernación

- Dr. Gladys Flaming, Health Secretary of the *Gobernación de Boquerón,* was designated by the *Gobernador* in order to answer the questions regarding the annual index of people affected by diarrheic illnesses in each community.
- There is no systematized data of the population affected by diarrheic illnesses per each community. He pointed out that the data of the Departmental Office of the Ministry of Health covers the entire District of Filadelfia and it is not possible to distinguish by each indigenous community.
- Dr. Flaming mentioned that the members of the indigenous communities of the Ayorea ethnic group in general always request sanitary latrines, so they are aware of how important they are for health reasons.

Comment of the interview to the Health Secretary of the Gobernación:

As concerns this interview that aimed at defining the prioritization indicator: "incidence of diarrheic illnesses in indigenous communities", although the data is better than that of the Ministries of Health, it is expressed in groups of communities without a disaggregation per gender or age.

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PHASE 4: DATA PROCESSING AND PRIORITIZATION OF COMMUNITIES TO BE INTERVENED

The purpose of data processing is to order the data collected from questionnaires and interviews in order to generate information that is useful for decision making purposes.

The aim of establishing priorities is to determine the pre-selected communities that urgently need W&S services.

4.1. Ordering the data collected

Qualitative information

The qualitative data is used to describe the characteristics of the communities to be intervened. For this purpose, the planners must assemble the discourse based on a logical order, linking ideas by thematic areas. The group of communities must be handled as one unit of analysis, supplementing specific information from each.

The description of the group of communities intends to provide an overview of the geographic and socio-cultural characteristics of the municipality or planning area intervened, indicating if there are common water sources and if these are available or have been polluted or deteriorated and cannot be used. The specific description presents the characteristics of each community particularly as concerns W&S services and their maintenance-related problems.

Annex 3: QUALITATIVE INFORMATION OF THE TARGET COMMUNITIES contains a summary of the qualitative data of the Ayorea ethnic communities of the District of Filadelfia presented by ILO Consultant[15] as concerns the pilot application of the W&S Joint Programme in Paraguay.

Quantitative Information[16]

The duly filled in questionnaires that have been verified in the field are gathered to be processed and, if required, are given a code to facilitate their systematization. The answers must also be coded to facilitate keyboarding the data into the computer. Generic spreadsheet programs (Excel) suffice for these processing needs.

The supervisors must certify that the data loaded on to the processing software match the original data of the questionnaires making sure that no mistakes were made when loading the data.

[15] Bendlin, Cynthia, "Diagnostic Report of the Water and Sanitation situation in the Districts of Abaí and Moisés Bertoni of the Department of Caazapá and the District of Filadelfia of the Department of Boquerón". OUTPUT Nº 2 of the consultancy: IRAP Planning. ILO, Asunción 2010.

[16] Taken and adapted from: R. Dingen. IRAP Training Modular Package. ILO, Geneva, 2000.

Certain **resources are needed for this purpose**:

- Technicians to input and process data
- One computer per each technician
- Supervisor of inputting the data
- Generic spreadsheet software (Excel).

As a general rule, one technician can input the data of 15 to 20 questionnaires per day.

4.2. Training data keyboarders and supervisors

Although inputting data is quite simple, data keyboarders and supervisors must be trained. The course to be delivered must cover the following:

Table 3: Example of training programme to input data

SESSION	Subject
1	Brief introduction to computers and how they operate
2	Software and how to operate
3	Coding and inputting data
4	Practical exercises
5	Results and back up copy

4.3. Data Analysis

After inputting the data into the database it can be systematized and analysed. presents the results of the ILO Consultancy for the indigenous communities of the District of Filadelfia in the Department of Boquerón, Paraguay.

Beyond the mathematics, the information obtained included generic, ethnic or other data for its evaluation. In former ILO experiences, the Access Indicator was calculated by gender since each gender has its own level of performance. However, it must be pointed out that as concerns Paraguay, this basically involves female work and has the support of the children of the family and therefore the data refers to this human group.

4.4. Preparation the Community's Matrix of Priorities

Taking the data obtained in Annex 4 as the basis and following the factor-based priority criteria mentioned in Chapter 3 of Conceptual Guide No. 1 of this series, the Planning Team will determine the priorities of the communities of each municipality or Planning Area under study. The aforementioned priorities will be presented at the Validation Workshop (See 5.1) and will be submitted for the approval of the communities.

Below is the matrix developed in the Conceptual Guide of this series as an aide memoire for its readers. We must remember that the matrix has been prepared on the basis of

an hypothetical case and does not involve the Ayorea communities of the example developed up to this point. This is because the practical application performed by the consulting company was aimed at a definition of priorities based on a consensus among community representatives, using simpler mathematical resources than those applied in the matrix.

Tabla 1: Matriz de priorización de comunidades por indicadores de A&S, Municipio AEÍ

(Ordenada por prioridades)

COMUNIDAD	A		B		C		D		E		F		G	H
	Cobertura (en N° de personas afectadas por el servicio)		Distancia (en minutos)		Incidencia de enfermedades diarreicas (en %)		Grado de Contaminación de Pozos y Sistemas (Alta, media, baja)		Conocimiento sobre A&S (Puntaje 1-3 Inverso)(*)		Capacidad de Gestión (Puntaje 1-5)		Valor de Comparación (Σ A – F)	Orden de Prioridad
	VA	VR	VA	VR	VA	VR	VA	VR	VA	VR	VA	VR	VC	Prioridad
A	250	0.71	20	0,33	70	1.00	3	1,00	3	0,33	4	0,80	**4.17**	1
D	300	0,85	10	0,17	45	0,64	3	1.00	2	0,50	5	1,00	**4.16**	2
C	180	0,14	50	0,83	25	0,36	1	0,33	1	1,00	5	1,00	**3.66**	3
B	60	0.17	35	0,58	20	0,29	2	0,67	2	0,50	3	0,60	**2.81**	4
F	75	0,21	60	1,00	25	0,36	1	0,33	3	0,33	1	0,20	**2.43**	5
E	350	1.00	0	0,00	1	0,01	0	0,00	1	1,00	2	0,40	**2.41**	6

VA = Valor Absoluto. Logrado por medición directa en cada una de las comunidades a ser priorizada.
VR = Valor Relativo. Logrado al dividir el valor absoluto de cada columna entre el mayor valor de esa columna.
VC = Valor de comparación. Logrado al sumar los valores relativos de una misma comunidad (suma horizontal).
Prioridad = El orden de prioridad esta dado por el mayor valor relativo de comparación.
(*) = La aplicación del indicador de conocimiento como factor inverso implica la adopción de una política de capacitación en gestión dirigida a las comunidades menos preparadas.

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PHASE 5: VALIDATION OF THE DATA PROCESSED AND MAPPED

In order to give the data collected and processed a definitive value the Planning Team must consult the communities as regards the qualitative and quantitative data organized and establish the priorities of the communities to be intervened. For this purpose a Workshop is implemented with the attendance of Community Leaders and Representatives of Local Authorities.

When this concerns indigenous communities in countries that have ratified ILO Convention 169, the consultation must comply with its principles. However, when a country has enacted a Law for Prior Consultation it will govern the type of process to be followed.

Consultation and participation in ILO Convention 169[17]

In order to encourage a more participatory conception of the process being developed, ILO Convention 169 provides certain guides for the promotion and implementation of projects that involve indigenous and tribal people:

- **Consultation:** Indigenous and tribal people must be consulted as concerns development projects and programmes.
- **Participation:** Indigenous and tribal people must participate in the design, application and evaluation of such projects and programmes.
- **Identification of needs:** The traditions, cultural values and needs of the people involved must be taken into account when drafting a project.
- **Evaluation of repercussions:** Before undertaking any development activity its impact must be studied and possible social, cultural, spiritual and environmental repercussions must be studied and evaluated.
- **Benefits:** All the development programmes and projects must contribute to improving the social and economic situation of the indigenous and tribal people and not jeopardize their wellbeing.

Consultation with Indigenous and Tribal People

Consultation is considered to be a fundamental principle of ILO Convention 169 and starts by recognizing that one of the main problems of indigenous and tribal people is that they have scarce or no opportunities at all to voice their opinions concerning the manner, moment and reason of the measures decided or already applied that have or will have a direct impact on their lives.

Convention 169 highlights consultancy as a right of indigenous and tribal people. This consultation can be carried out if a measure directly affecting the stakeholders can be studied,

[17] Convention N° 169 On Indigenous and Tribal People: a Handbook. Project to promote ILO policies on indigenous and tribal people ILO, 2003.

planned or applied. Among these measures mention is made of the example: Amendments to the National Constitution; their impact on official policies; new agrarian legislation; decrees concerning land rights or procedures to obtain titles; health and education programmes and services, etc.

In no case should the query be executed if there is no secure basis of understanding between the parties.

As a reference and guideline, the parties must act honestly, in an environment of trust and with a high level of communication

To this regard the consultations must take into account the following criteria:

- Stakeholders: Those who will be affected by a specific measure. Stakeholders must be consulted and given the opportunity to report to the authorities their opinions about these measures. Undoubtedly they must be able to suggest options.
- Adequate procedures: The manner of consulting stakeholders depends upon the circumstances. In order to be "adequate" the procedures must be adjusted to the demands of each situation and must be useful, sincere and transparent. Speaking to a few inhabitants of the villages is not enough. A closed meeting with a few chosen people who do not represent the opinion of the majority is not a "real" consultation.
- Representational institutions: These may be traditional (council of the elderly, village councils, etc.) or contemporary structures (parliaments of indigenous or tribal people, local leaders who have been elected and who are recognized as genuine representatives of the community or stakeholders). Each case will be different.
- Adjustment to the community's reality. In this case it must be noted that Prior Consultation is applied in territorial units and areas are defined in terms of socio-cultural dynamics.

5.1. Validation workshop on information and priorities

Workshop objectives

- A participatory workshop of the qualitative and quantitative data of the diagnosis regarding community access to W&S.
- A validation of community priorities based on the Priorities Matrix prepared by the Planning Team.

Participants

Qualified representatives of communities, key informants and government representatives who participated in the process must attend the validation workshops.

In each case the Planning Team must convene the community leaders and key stakeholders. As concerns the indigenous communities their manner of convening and participating must be respected in order to comply with the rights enshrined in ILO Convention 169.

Furthermore, the presence of women representatives of each community must be assured because they are in charge of fetching water when a community does not have household potable water connections.

The data validation allow to have a simple and accurate diagnosis of the Communities, from the perspective of the interested ones, focused on the thematic axes and adapted to the reality of each Community.

Validation of Qualitative and Quantitative Data

The Planning Team presents a summary (using a Power Point or flipchart) of the systematization of the qualitative and quantitative data.

For this purpose the data of the diagnosis presented as examples in Annex 3: QUALITATIVE INFORMATION OF THE TARGET COMMUNITIES and in Annex 4: SYSTEMATIZED QUANTITATIVE INFORMATION OF THE DISTRICT OF FILADELFIA will be used as the basis.

The facilitator of the workshop opens a round of questions and answers inviting participants to voice their doubts or state their agreement or disagreement with the data presented.

The idea is that the data on the situation of water and sanitation must be accepted by the community representatives, since it reflects the information they collected.

First point of agreement:

In the validation workshop with indigenous communities of the District of Filadelfia the facilitator consulted the community leaders to see if they agreed with the data presented in the diagnosis.

- Each participant answered that they agreed.

Approval of the Prioritization

The prioritized list of communities must be the outcome of a consensus built during the Validation and Prioritization Workshop. It is important to reiterate to the communities that the matrix-based priority system ensures a higher level of political neutrality in decision making and that the list of priorities is an entirely technical output. One measure that generates trust is the choice of venue for the Prioritization Workshop. For instance, in Filadelfia the workshop was carried out in a public school.

As concerns the application of the questionnaire and holding the Prioritization Workshops, the communities' communication system and manner of taking decisions must be taken into account, especially with regard to indigenous communities, in fulfilment of ILO Convention 169, as has already been pointed out.

At the workshop in Filadelfia, after the consultant presented the Prioritized Matrix, the indigenous leaders requested a pause to discuss the matter in their Ayoreo native tongue. Afterwards they informed the consultant that they agreed with the prioritization.

They only mentioned the need to include a recently created community that had as many or even more needs than theirs as concerns water and sanitation

Prioritization list of the communities of the District of Filadelfia

Note: *As a function of the Planning Team, at the workshop the consultant developed an approval process of the indicators used, which were only two, due to a lack of information: population and W&S teams. Subsequently the Table shown below was prepared in order of priority.*

Communities	N° Families	Standardization[18]	Infras-tructure[19]	Standardization	Comparison Value	Order of Priority
2 de Enero	17	0.40	50	1.00	1.40	**1**
10 de Febrero	26	0.62	30	0.60	1.22	**2**
Tunucojai	42	1.00	10	0.20	1.20	**3**
Jogasui	30	0.71	20	0.40	1.11	**4**
15 de Septiembre	13	0.31	40	0.80	1.11	**4**
Ijnapui	23	0.55	25	0.50	1.05	**6**

[18] Standardization divides all the factors of a column by its highest value. In this manner, "homogeneous factors" are left (because they are compared at the level of the unit). Once these factors have been standardized they may be added to others, to add value to the comparison that the prioritization allows for.

[19] It must be mentioned that since the infrastructure factor is reverse (the greater the infrastructure the lower the weighted average), it has been standardized as a direct factor, because the qualification done by the Planning Team was already reverse, since the community with the lowest infrastructure was given the highest score. (See Chapter 3 of Guide 1).

Observe the tie in the fourth rank. This happens because the matrix applied a limited number of factors. In order to decide on this tie, workshop participants were consulted again and they decided that Josaguí ranked fourth since it attended more families than the 15 de Septiembre *community. The principle of solidarity among the communities prevailed in this decision.*

5.2. Mapping water and sanitation sources from a watershed perspective

Mapping is a graphic way of presenting information that refers to the problems of each community. The tables and graphs are useful in providing and comparing existing information, but the mapping is extremely useful in visualizing geographic information, such as the location of water sources, the location and distribution of services, the infrastructure to access these services, the physical characteristics of the catchment areas, etc.

The main objectives of the mapping are:

- To geographically show the geographic distribution of the services and the needs to have access by communities of an area or district
- To support in identifying the problems of access to water and sanitation and to formulate the interventions required.
- To facilitate communicating the information and recommendations to the audience
- To evaluate the possible impact in other sectors of the projects in order to improve the access to water and sanitation

The procedure for the mapping involves:

- Preparing basic maps
- Identifying and localizing services
- Determining the catchment areas (water sources)
- Determining access problems
- Determining relations with other sectors such as agriculture and others

The basic maps usually contain the following information:

- Villages
- Water currents and bodies or swamp areas
- Roads, paths and bridges to enable access
- Mountains, hills and forest areas that hamper access
- Some specific characteristics such as water collection points, the distribution of wells and latrines, etc.

These base maps are usually topographic maps at a scale of 1:50.000. However we must bear in mind that the maps are not always updated, therefore it is important to verify the elements represented on the map in the workshop and correct them with the participation of the inhabitants whenever necessary.

In ideal terms, the Planning Team must verify in the field the location of the critical points mentioned, if possible by using a Global Positioning System[20] (GPS). However it would be best if the national entities in charge of W&S management use geographic information systems[21] (GIS) in view of the big advantages this poses for the integrated management of the systems. (See Chapter 1.6 of the Conceptual Guide)

Catchment areas are frequently used to plan accessibility. A target catchment area often refers to a certain distance or travel time (subsequently the units are converted using the equivalency of 1 hour = 5 kilometres, based on the average speed of 5 km/hour, walking on flat ground.

The target catchment area is a circle of a certain diameter that puts in the centre the service under study and eventually encompasses all the people or families that have access to this service. This allows the planner to clearly see how many families are being attended by the service and thus determine if the size of the service is appropriate for the number of families who use it. It also is used to compare if the target number of people and families have an adequate access to the service, as concerns quality.

Annex 5: MAPPING W&S SERVICES IN RURAL COMMUNITIES, for example, the maps done by the ILO Consultant in the W&S Joint Programme in Paraguay as well as three maps done by the SENASA team at the Validation Workshops carried out by the promoters of the SENASA Directorate of Social Affairs (DASOC in Spanish) who acted as the Planning Team.

It must be noted that in all cases the land was flat, had no topographic accidents, unlike the reality of the country. In fact, aside from this, the Eastern part of the country has the Guarani Aquifer, the largest in the world, and this determines that the main source of water is underground. The western zone, el Chaco, suffers from water stress[22] and there water harvesting solutions are the option.

[20] The *GPS* (*Global Positioning System*) is a global satellite-based navigation system that determines the position of an object, vehicle or ship in any part of the world (geographic coordinates) with a precision of a few meters. The system was developed, installed and operated by the Department of Defense of the United States.

[21] The *GIS* (*Geographic Information System*) integrates hardware, software and geographic data that has been designed to capture, store, manipulate, analyze and display the referenced geographic information in all its forms, in order to resolve complex planning and management problems.

[22] According to UNEP, water stress refers to a situation characterized by a greater demand for water than the amount available during a given period. Water stress is also generated when the use of water is restricted due to its poor quality. The water stress provokes a deterioration of fresh water resources in terms of quantity (over-exploited aquifers, dry rivers, etc.) and in terms of quality (contamination of organic matter, saline intrusions, etc.). Taken from the Climate Change Portal of the Ministry of the Environment, Peru. http://cambioclimatico.minam.gob.pe/manejo-de-la-tierra-y-el-agua/manejo-del-agua/que-es-el-estres-hidrico/

In both cases, the Entities Responsible seek ad hoc multiple family solutions according to the size of each community

5.3. Search for cross-cutting sectoral solutions or solutions for several communities

In this phase of the workshop solutions must be sought that go beyond one sole community but rather encompass several. This provision must be encouraged in the measure in which the conditions of distance and cost-effectiveness justify it. To this regard, it is recommended that the Responsible Entities have a "Catalogue of Technologies" containing solutions according to different types of problems. In the case of the UN Joint Programme in W&S, the ILO prepared an Inventory of Technologies[23] that SENASA and the sub-national governments used.

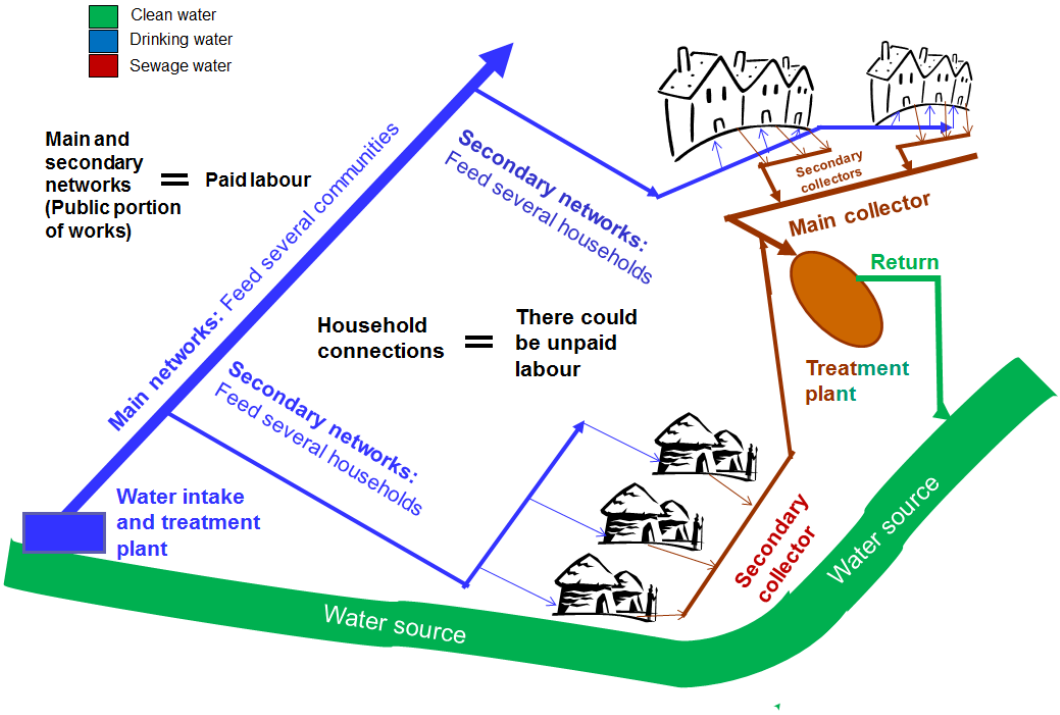
Annex 5: MAPPING W&S SERVICES IN RURAL COMMUNITIES contains the most important technological solutions used in Paraguay.

It is important that should the interests of other sectors be affected, such as, agriculture, the responsible local entities of the sector or, the Water Authority, if there is one, at the level of the watershed, district or province will be contacted. This measure is particularly important when the intention is to draw water from the normal flow of the rivers or streams that may be used for agriculture and livestock; and also when the sewage system should dump water that has been previously used for these activities into the water bodies.

Below is a typical schematic view of the water supply to several communities, with an intake from the river and an outlet from the treated sewage water:

[23] González Sotelo, Miguel Ángel. Catalogue of Technologies for the construction of W&S rural works in Paraguay. W&S Joint Programme / ILO. Asuncion 2011.

Diagram 1: Typical schematic of water supply for several communities and for agricultural use



Prepared by the author.

Annex 6: EXAMPLE OF WATER AND SANITATION SOLUTIONS contains the most frequent solutions applied to water supply and sanitation services, particularly as concerns dispersed rural and indigenous populations.

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PHASE 6: DRAFTING AND APPROVING INTERVENTION PROPOSALS

Intervention proposals to improve the access to water and sanitation are based on the priorities identified with the target population through interviews with Key Informants of the Community and government entities.

The proposals are prepared by the Planning Team based on information processed in the previous steps. These proposals must be presented in the workshop to draft and approve intervention proposals in order to reach joint agreements with stakeholder communities.

6.1. Workshop to Draft and Approve Intervention Proposals

Participation

This workshop includes the participation of local and departmental authorities, aside from key stakeholders and community leaders, including women, individually or through as representatives of women's organizations. As has already been pointed out, the participation of women is of the essence because of the direct relationship between rural women and the use of water.

The participation of authorities is achieved if throughout the process care has been taken to link their commitment to the outputs of the planning process and there is a manifest will to solve W&S problems in their communities, particularly those most vulnerable.

Development of the workshop

Below is the case of the Workshop developed in the District of Filadelfia by the ILO Consultant within the Joint W&S Programme in Paraguay[24].

In the case of the District of Filadelfia, the Intervention Proposal Prioritization and Formulation Workshop had the support of community leaders, key community stakeholders and municipal and departmental representatives members of the Planning Team.

The *Gobernador* of Boquerón and the *Intendente* of Filadelfia attended and with their presence endorsed the agreements reached.

[24] Taken and adapted from: Bendlin, Cynthia, "Development of an investment proposal to improve access to water and sanitation in two districts of the Department of Caazapá and one of the Department of Boquerón, based on priorities identified with the target population". Output 5 of IRAP Consultancy. ILO. Asuncion, 2010.

Presentation of the systematization outputs

After the formal greetings and presentations, the workshop presents the Outputs of the Systematization prepared by the Planning Team. In this case, the six pre-selected indigenous communities of the District of Filadelfia in the Department of Boquerón, Paraguay.

Table 4: Community projects (taken and systematized from the Questionnaires and Key Community Informants)

Community projects					
Community	Project Name	Participants		Funding Sources	Community Contribution
		M	F		
Ijnapui	Increasing community and family cistern's capacities (aljibes). 2 artisanal wells.	X	X	Gobernación	No financial contribution
10 de Febrero	Family aljibes with safe roofs.	X	X	Gobernación	No financial contribution
Jogasui	Repairing the motor pump of the artisanal well. Family aljibes.	X	X	Gobernación	No financial contribution
2 de Enero	Shed with community aljibe Tinglado con aljibe comunitario.	X	X	Gobernación	No financial contribution
25 de Septiembre	Family aljibes. Water pipes to bring water from the Jesudi artisanal well.	X	X	Gobernación	No financial contribution
Tunucujai	Family aljibes.	X	X	Gobernación	No financial contribution

Opinion of the responsible authorities

The two end columns must be filled during the workshop, depending upon the opinions of the Responsible Authorities on the projects and the funding offers made at that time.

Below is the Filadelfia case:

The **Secretary General of the Municipality** explained that it has the financial support of UNICEF and that the works will be implemented in 8 communities of the District of Filadelfia, three of which are targets of this project: first Ijnapui, followed by Jogasui and finally Tunucojai.

He explained that the project involves 3 drillings per each community to explore water wells and to **use the one with the best characteristics to distribute potable water in the community.** He added should one or more communities not need to carry out three drillings these will be dug in other communities. He underscored that the studies performed as part of the project helped to define **if these drillings can only supply water to the community or if there is enough water to supply neighbouring communities.**

He commented that SEAN geologist technicians have studied the vegetation and soil of Ijnapui and said that there was 100% possibility of the existence of fresh water, but, they said that by drilling could they confirm this hypothesis. *To be continued….*

Continuation: If the flow and characteristics of the Jogasui, Ijnapui and Tunucojai water tables are sufficient, water could be supplied to the communities by the 15 de Septiembre, 2 de Enero, and 10 de Febrero by the new wells.

Finally, The Secretary explained that the Project funded by UNICEF is completed once the wells have been cased. He stated that it would be convenient that the W&S Joint Programme finance the pumping system to distribute water to these communities.

In the words of the communities about the support that the Jesudi community needs to repair the engine of the water pump it owns, the consultant pointed out the if this is done it would open the possibility of supplying other communities.

The Secretary of the municipality responded that they are looking into the possibility of repairing it but he indicated that it would be best if the communities had their own independent operations and maintenance systems, as in the case of State policy.

The consultant pointed out that this planning process considered **the approach to the subject of operation and maintenance to be important** and of the essence for the long term sustainability of W&S systems. The Secretary answered that as concerns Ijnapui, during droughts potable water could be supplied to Jogasui, Jesudi and small communities of the northern zones.

The Secretary of Indigenous People of Gobernación of Boquerón added that as concerns building deep wells, superficial wells should also be built as reinforcement, in order to avoid what happened at Ebetogue where the well became saline after a long drought. He added that the Gobernación is working to make community or family aljibes with own funds, in the communities of 15 de Septiembre, 2 de Enero and 10 de Febrero. Expresó que estos aljibes pueden recolectar agua cuando llueve y utilizarse en épocas normales. De esta manera el pozo profundo solo se utilizaría en épocas de sequía y se evitaría el uso indiscriminado del mismo, evitando que se seque o se salinice.

He said that the Gobernación has Project to make family aljibes in Ijnapui, and community or family aljibes the 15 de Septiembre, 2 de Enero and 10 de Febrero. He also said that in Tunucojai there are four community aljibes but only two function and that family aljibes will be used to supplement the supply.

Finally he said that it is important to not duplicate actions and to try to supplement them through the agricultural sector since tajamares are built for agriculture and livestock purposes, this may contribute to the care of potable water consumption, since the tajamar is used only to wash clothes and for personal hygiene, but not for human consumption. In this manner, the potable water is only used for human consumption, reducing its consumption and ensuring its sustainability for the future

Funding and community contribution sources

Based on a proposal presented by representatives of the municipality and the Gobernación, the facilitator summarizes the proposals and fills in the column of the Tables “Funding Sources” and “Community Contribution”. Moreover, the need to address action in order to enable the community to have permanent access to healthy water and sanitation is also mentioned.

Annex 7: INVESTMENT PROPOSALS IN WATER AND SANITATION, DISTRICT OF FILADELFIA contains the List of Proposed Investments.

List of obstacles and restrictions to implement the works

By way of concluding this part of the workshop, the facilitator proposed that a list of obstacles and restrictions to implement projects be prepared. Community representatives and municipal promoters help to draft the table of contents.

As concerns the District of Filadelfia, Table 5: List of obstacles and restrictions to implement projects in each community contains a summary of the results.

Table 5: List of obstacles and restrictions to implement projects in each community

Communities	What are the main obstacles / restrictions that have an impact on the implementation of projects by communities in the zone?
Ijnapui	Artisanal wells cannot be dug in all localities since the water table is brackish.
10 de Febrero	Artisanal wells cannot be dug in all localities since the water table is brackish.
Jogasui	The well of the locality has a windmill and an engine if need be. There is not enough wind to move the windmill and the engine is out of order.
2 de Enero	Artisanal wells cannot be dug in all localities since the water table is brackish
25 de Septiembre	Artisanal wells cannot be dug in all localities since the water table is brackish
Tunucojai	Artisanal wells cannot be dug in all localities since the water table is brackish

6.2. Basic agreements to subscribe the community contract

This phase of the workshop aims at achieving basic agreements to enable the community to participate in the entire process of building, operating and maintaining the W&S systems provided to them by the State and some Private Development Organizations (PDOs) or NGOs.

Guide No. 1 of this series describes the general scope of community contracting, and, **Guide No. 3** provides an *in extenso* description of community contracting to implement works under the responsibility of the community. This Guide contains a list of the topics to be dealt with at the workshop that refer to Community Contracting:

6.2.1. Concerning the execution of the works

The facilitator must point out that the works will be done gradually according to the results of the prioritization and the investment calendar to be determined once the Planning Team has prepared the technical file as agreed with the Responsible Authority.

Moreover it clearly mentions that these agreements shall be mentioned in the Community Contract that the community will enter into with the Responsible Authority as the final output of the planning process.

It is very important that the estimated beginning date and implementation dates of the works be realistic in order to not create false expectations. It must be clearly understood that the works will be implemented in strict compliance with the order of priority as defined in the prioritization workshop and according to the outputs of adequate planning.

6.2.2. Concerning the economic contributions

The economic contribution of the communities through labour and the supply of local construction material must be defined. Any agreement will be integrated into the Community Contract. A valuation of the community's contribution in labour and in kind (local material) must be done in a timely manner. The ILO recommends that the Responsible Authority establish a policy stating that whenever the community contribution surpasses the percentage limit specified by Law (5% in the case of Paraguay) that this amount be paid to the community members who participate in the physical execution of the work. **Guide No. 3** of this series provides a detailed description of Community Contracting.

6.2.3. Concerning the system´s operation and maintenance

In order to approach this topic the specific management model that the country promotes must be born in mind since in certain cases the systems are delivered to the communities to be managed by them (community-based self-management) and they assume the responsibility of operations and management. In other cases the management is delivered to municipal enterprises; in others competent entities take charge of the management and in others, a joint formula is applied that keeps the management under community rule with the assistance of the competent authorities.

Should the management model lean towards different types of state management, community participation will be undoubtedly restricted and emphasis will be placed on the payment of rates. In the case of self-management modalities, community participation is a determinant factor, because the demand for training to adequately manage the operations and maintenance is much higher.

The management model of the W&S systems by the community requires a higher level of responsibility and knowledge.

The Responsible Authority should provide them with proper education and training to ensure a sustainable management and technical assistance and supervision in the medium and long term.

6.2.4. Concerning the need for training

At this point of the workshop, the Planning Team must prompt a collective analysis of the training needs of each community. For this purpose, the information of the Interview Form and management model to be adopted must be taken into account. The proposals contained in this form may be eventually updated in this workshop by community representatives and women leaders who are attending it.

The agreements that are adopted on education and training, should be part of the Community Contract

The need for training demanded by the communities mostly concerns technical aspects, such as, plumbing, hydraulics, mechanics, etc. that are needed to operate and maintain the infrastructure that will be installed in the communities. However, one of the topics that has grasped the attention of the Responsible Authorities is systems management. This is interpreted as the determination of operational costs in order to know how much to charge for the service, as well as, how to manage collection and management of accounts.

In areas where solutions are individual, the subject of the operational cost (potable water treatment) and maintenance cost of the system (rooftops and aljibes, as well as manual or mechanical pumps) must also be discussed at the workshop since the responsibilities assumed must also be evident and openly discussed. As concerns indigenous communities in particular, the subject much be approached by showing respect for the indigenous community´s traditional relationship with water.

A basic principle that must be taken into account is that water is a free good in its natural state, but it ceases to be once is installed as a service that has costs of operation and maintenance

As concerns maintaining the service, **one option proposed at the Filadelfia workshop** was that the Municipality prepare and operate a mobile unit to provide maintenance to multiple family facilities, and also to train families who have individual solutions to keep them adequately maintained and in operations.

6.2.5. Subscription of agreements

The facilitator of the workshop must point out that any agreement reached must be included in the Community Contract. This is why the agreement between the Responsible Authority and the Community must be signed.

Another option is a verbal agreement backed by the commitment of the Responsible Authority. However, one more convincing option for community members is the signing of the Minutes of the Agreement between the Responsible Authority and Community Authorities, eventually including representatives from other governmental entities who may have intervened in the process.

The Planning Team must draft these Minutes during the meeting, so that once the meeting has concluded, both parties may sign them.

It is convenient that the agreements reached in the workshop be written in an Act of Agreements.

This Act will be subscribed by the competent authorities and by the representatives of the present Communities.

Terms of reference to draft the Minutes of the Agreement

The Minutes of the Agreement must at least contain the following information:

1. List of projects approved by the Community and the financial commitments of the parties. The Table presented in Annex 7: INVESTMENT PROPOSALS IN WATER AND SANITATION, DISTRICT OF FILADELFIA will be taken as a model to draft the list.
2. List of economic contributions of the communities, valued by each community
3. List of contribution of the Responsible Authority, amounts per communities.
4. Implementation terms as a function of the priorities established in the plan
5. Agreements on the operation and maintenance of the systems
6. Agreements on training and technical assistance
7. Agreements on the long term supervision and sustainability.

6.3. Drafting the technical and economic proposals of the projects

According to the circumstances of each planning process and the character of the Responsible Entity, as the culmination of its technical work, the Planning Team must present a Technical and Economic Proposal for each district intervened, or Planning Area. Consequently the Planning Team must coordinate with the offices in charge of the technical and economic aspects of the Responsible Entity.

6.3.1. Technical Proposal

The Technical Proposal must be sustained on the work carried out throughout the Planning Process, particularly the results achieved in the drafting of the Intervention Proposals by district and community.

This Technical Proposal must mention each project and establish its technical parameters in order to facilitate the work of the experts in charge of preparing the Technical File of each work.

6.3.2. Economic Proposal

In the planning phase, the valuation of the works will be done only as an estimate, at standard costs, bearing in mind other previously developed works.

As concerns the W&S Joint Programme in Paraguay, the ILO developed an Inventory of Technologies (González Sotelo, *Op. Cit.*) that includes budgets at standard costs per each system frequently used in Paraguay.

The definite budgets will be executed by the Responsible Authority in the Pre-Investment Phase after the Planning Phase.

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PHASE 7: APPROVAL OF PROPOSALS BY THE COMMUNITY AND RESPONSIBLE AUTHORITY

7.1. Inclusion of works in the budget of the Responsible Entity

Before seeking the approval of the technical and economic proposals by the community the Planning Team must take the necessary steps to include the Project in the implementation budget of the Responsible Entity, in order to ascertain which works can be implemented in the current year and which will be implemented later. If the Entity Responsible has a national scope and does not have an ongoing project that immediately includes works in the current year´s budget, it must try to include this item in the next year´s budget after planning. The idea is that the realistic implementation dates of the works can be estimated in order to discuss properly and in good faith with the communities.

Should the Responsible Authority be the municipalities or *gobernaciones* the process will be as described before, that is, that if there are no entries that allow for an immediate availability of the budget, the investment proposals must be included in the budget of the next year after planning.

The incorporation of works in the Responsible Authority budget allows to be certain that these will be executed and that it can be communicated with integrity to the communities.

7.2. Approval of the Technical and Economic Proposals by the Community

The Technical and Economic Proposals prepared as specified in Chapter 6.3 Drafting the technical and economic proposals of the projects must be submitted for the approval of the community before formalizing the subscription of the Community Contract with the Responsible Authority.

The idea is to develop an Approval Workshop in the community itself, aiming at the participation of all the members who will be benefitted by the Project. The objective is to have the community issue its social agreement to the Project and all the beneficiaries are clearly aware of the commitments they will assume before the Responsible Authority. These commitments will be included in the Community Contract. Thus, all actions will be taken in keeping with the principles of ILO Convention 169 that has the force of a law in the countries that have ratified it.

The technical and economic proposals must be approved by the community in an Approval Workshop.

Previously, the planning team must ensure that the necessary certificates are approved at a budget level.

7.3. Approval by the local authority (municipality or gobernación)

In a manner similar to that described in the case of the Community, before subscribing the Community Contract, the local authorities must approve the Technical and Economic Contracts according to the commitments acquired for each community that will be intervened. In this case the purpose is that the local authority ratify the degree of participation it will have in the project, that is, the contributions and commitments it will assume vis a vis the Community and the Responsible Authority.

This participation must cover the contributions related to the implementation of the works, as well as more long-lasting contributions for instance, those concerning the operation and maintenance of the services to be installed within the scope of their competence. The intervention can be done in one of two levels of government, or in both, and must clearly state what is will do in each case.

Local authorities can commit to the execution of works, as well as for the operation and maintenance of the services or individual solutions.

If the local governments (municipal, provincial or departmental) have the competency of the Responsible Entity, the agreements taken will be the only ones that the Planning Team must have, as explained in the previous chapter.

7.4. Approval by the Responsible Authority

Once the Community and local governments have approved the Technical and Economic Proposal the Planning Team can coordinate the drafting of the community contract that defines the roles and contributions of each entity that will be party to it.

Once the scope of the community contract has been defined, it will be signed, following the criteria as specified in Phase 8.

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PHASE 8: DRAFTING AND SIGNING THE COMMUNITY CONTRACT

8.1. Drafting the Community Contract

The Responsible Entity's legal department or another office under its institutional organization must draft the Community Contract. The Planning Team will be in charge of coordinating the drafting of the contract with the responsible area and will also coordinate the physical act of the subscription.

The contract must clearly specify:

- The scope of intervention (repair, improvement, construction etc.) of the Responsible Authority
- Type and character of the water system to be installed
- Type and characteristics of the sanitation system
- Responsibilities of the community and valuation of its contribution
- Responsibilities of the municipality or *gobernación* and scope and valuation of its contributions
- Responsibilities of the Responsible Authority and valuation of its contributions

It is important that the Planning Team be thoroughly informed about the Community Contract, and therefore its members must be trained about the content of **Guide No. 3** of this series.

8.2. Signing the Contract

This activity is the highlight of the Integrated Planning of Rural Water and Sanitation process. In a strict sense it is made up of the signatures of the representatives of the community, local authorities and the Responsible Authority who are duly accredited and have the power to subscribe the contract.

However, considering the crucial importance of the water systems for the life of the community, it is convenient to give the act a ceremonial nature that will strengthen the commitment of both parties. As concerns the Community it is a factor that helps to strengthen the model and the systems' sustainability, and, as regards the authorities, it reinforces its commitment to implement the works and deliver technical assistance and supervision during the system's operation.

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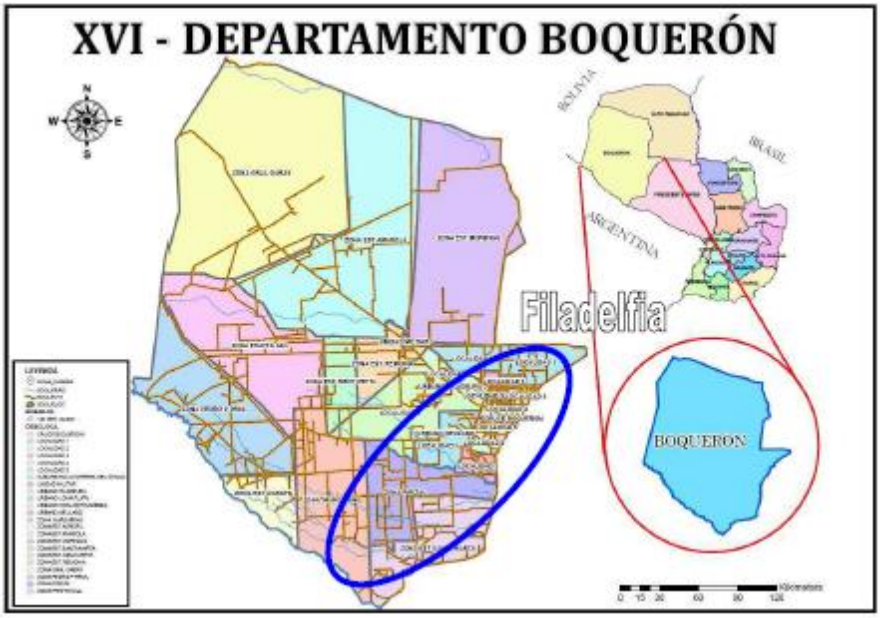
ANNEXES

Annex 1: MAPS OF THE INTERVENTION ZONES IN PARAGUAY

6.1. Department of Caazapá, Districts Abaí and Dr. Moises Bertoni

6.2. Department of Boquerón District of Filadelfia



Annex 2: MODEL FORM TO CONDUCT INTERVIEWS WITH KEY COMMUNITY INFORMANTS

MEETING WITH KEY INFORMANTS			
Municipality:			
Zone:			
Community:			
Date of Meeting:			
Key Informants:			
Nº	**Name:**	**Gender**	**Post:**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Other participants:			
	Name:	**Gender**	**Post:**
1			
2			
3			
Data collected by:			

INFORMATION ON THE COMMUNITY	
Directions from the Municipal Headwater (NSEO)	GIS Coordinates
Distance from the Municipal Headwater….K*m*	Watershed it belongs to
Type of terrain: (trace a circle as needed) Flat Ondulated Steep Mountainous Swampy	
Ethnic groups present in the community:	
Dominant language spoken in the community	

Demographic information about the community		
Total Population of Men		Men
Total Population of Women		Women
Total Population of Boys		Boys
Total Population of Girls		Girls
Total Population		**People**

Sectors/Sub-Zone of the Community	N° families
Total Number of Families/Households	

HEALTH

Diarrheic illnesses:

Number of people affected (number of people affected in the last 12 months, registered at health centres)					
Percentage (1) of people affected	Up to 20%	From 21 to 40%	From 41 to 60%	From 61 to 80%	From 81 to 100%
Score	5	4	3	2	1

(1) These percentages refer to the zone of high incidence such as the Municipality of Filadelfia in Paraguay. In other cases, the percentages adjusted to the local reality must be inserted. The purpose is to establish a distinction between the groups of communities that are comparable against each other.

Knowledge about potable water

Know the importance of the use of potable water					
Percentage of the population	Up to 20%	From 21 to 40%	From 41 60%	From 61 to 80%	From 81 to 100%
Score	5	4	3	2	1

Knowledge about sanitation

Know the importance of using latrines					
Percentage of the population	Up to 20%	From 21 to 40%	From 41 to 60%	From 61 to 80%	From 81 to 100%
Score	5	4	3	2	1

Know the importance of cleanliness (adequate waste management)					
Percentage of the population	Up to 20%	From 21 to 40%	From 41 to 60%	From 61 to 80%	From 81 to 100%
Score	5	4	3	2	1

EDUCATION

Number of Adult People who:	Number	Percentage of the total community
1. Has no formal education		
2. Has basic education (partial or complete)		
3. Has intermediary school education (partial or complete)		
4. Has a technical or university level of education *		

Data on the Education of Girls and Boys:	Number	Percentage of the total community
Girls and boys up to 14 yrs. Old who do not go to school		
Girls and boys over 12 yrs. old who do not know how to read or write		

*** Technical level of education**				
Category	Incomplete Courses		Complete courses	
	Without experience	With experience	Without experience	With experience
Score	4	3	2	1
Courses				
Plumbing				
Construction				
Engine Mechanics				
Administration				

*** At a university level of education**				
Category	Incomplete course		Complete course	
	Without experience	With experience	Without experience	With experience
Score	4	3	2	1
Careers				
Engineering degrees				
Administration				
Others				

WATER

Number of protected water sources functioning in the community		
Type	**Number**	**State of operations**
Artisanal well		
Protected well		
Unprotected well (Aljibe)		
Protected Source		
Tubes and pipes system – number of taps:		
Tajamar		
Australian tank (elevated uncovered tank) *		

Headwater		
Other		

* Do Australian tanks have chlorine?					
All		Some		None	

Travel time to the service	
Time	**Time in Minutes**
Average time to reach the source of water:	
Average waiting time at the source of water	
Average time of return trip	
Average time of duration (to, waiting and back) per month	

Frequency:	
How often does a household have to fetch water	1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10 per day
Mark one per each season	
Drought season	1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10 Per Day
Rainy season	1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10 per day

Who fetches water:	Percentage (%)
Women	
Men	
Boys	
Girls	

Means of Transport used	
On foot	
Bicycle	
Cart	
Donkey /Horse / Mule	
Pick-up truck/Truck/automobile	
Motorbike	
Other	

MANAGEMENT CAPACITY

Community's Management Capacity					
	Up to 20%	From 21 to 40%	From 41 to 60%	From 61 to 80%	From 81to 100%
	5	4	3	2	1
Capacity to supply inputs for the community´s needs					
They organize themselves and resolve community issues that involve logistics					

Administrative knowledge					
Maintenance of works by the community					

COMMUNITY PROJECTS

Project Name	Project Type	Funding Sources	Participants		Sector	Beginning Date	Community Contribution	Status	Agency	Project Cost
			M	F						
What are the main obstacles / restrictions in the zone and that affect the implementation of the Project by the communities?										
Up to what point can the people participate in the decisions that affect the communities and how is this organized?										

W&S Intervention proposed by the community		
What are the 3 most important W&S interventions for the community?		
W&S Interventions proposed by the community	**Score 1, 2 o 3**	**Notes and Suggestions**
Improve/ built water supply works		
Improve/built sanitation works		
Train people in how to use potable water		
Train people in how to have an adequate sanitation		
Capacity to build the management of the current water and sanitation system		
Improve internal paths from the community to the water sources		
Other (specify)		

Annex 3: QUALITATIVE INFORMATION OF THE TARGET COMMUNITIES[25]

Common characteristics of the target community

The target communities belong to the District of Filadelfia of the Department of Boquerón, in the Central Chaco Area of the Western Region of Paraguay. It covers six indigenous communities of the Ayorea ethnic group. This ethnic group was the last to abandon living in the wild and first met Man 60 years ago, people who did not belong to the indigenous people, which they called the "Paraguayans" or "white men".

These people are devoted to hunting, gathering and handicrafts. Some are seasonal workers on large farms. Tunucojai belongs to the Ayoreos Garaigosode Family and the others are part of the Totobiegosode Family. Both speak the Ayorea language and have the same communication system through their leaders. As concerns the application of the IRAP methodology, special attention was given to respecting their customs and habits to communicate. Moreover, precautions were taken to ensure that the consultation include women, so that their views would be taken into account.

The communities are made up to clans and these in turn of families. Each family has an average number of 5 children. Disputes are directly related to water and the community's access to services including W&S and when a dispute arises between two leaders of a community one of the two decides to leave the clan and set up a new community. This hampers the capacity of the community to satisfy its basic needs, because when it has basic services, another community appears demanding the same service. As concerns the community 2 de Enero it sets an example, since it is the most recent and only has three tents and two water tanks (reservoirs) which the cattle raiser gave them. Each fifteen days the Gobernación fills this tank with potable water. This is the only infrastructure that this community has.

NOTES:

Each community has been located and a map of these places has been annexed.

In this case the GPS system was not used however, wherever possible it should be used.

A socio-cultural description of the modes of behaviour of the clans has also been provided..

Dry Tajamar | Community tap | Treatment system

[25] Taken from the report presented by the ILO consulting Enterprise in the W&S JP in Paraguay. Bendlin, 2010.

Water and Sanitation Situation

All the communities lie on flat land made out of sandy clay soil. The Gobernación has water maps that indicate that the water table of the community territories is brackish. Some communities have fresh water in specific places (such as Campo Loro that is not a target community of the Project), but not much. According to the Gobernación if this limited amount of water were to be distributed among other communities, the water in the well would drop and would become brakish.

It was verified that there were community and family aljibes, as well as tajamares and Australian tanks, and, in some cases, wells. The stakeholders interviewed mentioned that the aljibes are provided by the Gobernación and are built on strong metal sheet roofs and have an underground reservoir which is used during rainfall to harvest water. This is also an initial solution for the household and each family will be in charge of shutting it down. The Gobernación intends to provide the communities with more community and family aljibes.

During droughts, the gobernación sends a cistern truck to the indigenous communities to supply them with potable water. This water truck supplies water each 15 days or whenever needed. Droughts usually last 5 to 6 months, beginning in November and ending in March.

There have been cases of winter droughts. During 2008 and 2009 the drought lasted 18 months. As a result many water sources dried up and some have not recovered to date (2010) since there has not been enough rainfall.

The communities have acquired a level of organization and submit their demand for potable water to the Gobernación well in advance in order to organize and plan the delivery. If despite prior notice, it is impossible to organize an immediate response, the Ijnapui community transports water directly from the outsourced service used by the Gobernación, from Campo Aroma. The transfer is done by the tractor-wagon, and transports women, girls and boys carrying empty jugs and buckets of water to fill them with potable water. As concerns the 10 de Febrero community the women, boys and girls cross the road to a neighbouring estate and fetch the water from a nearby tajamar.

In all the communities the women are usually in charge of fetching water. Girls and boys who have the capacity to carry a bottle (one litre) also help depending upon their age and possibility: the older they are, the heavier the load they carry.

Without water supply from the Gobernación in times of drought, 100% of the target communities would not have access to water, not even potable water. This solution is criticized by other stakeholders as a strategy of political clientelism. This could be solved by building a feeder cannel to transport water from the Paraguay River up to el Chaco, but this would be a major investment which would take several years.

Both the indigenous communities as well as the Municipality of Filadelfia identified two possible places to dig shallow wells in Tunucojai; these had already been taken into account when the intervention was designed. However, it has been noted that these shallow wells, capture water from the surface at a depth of 20 to 30 meters and there is no way of knowing beforehand if they are brackish or not. In this zone, a deep well has a depth of 100 to 200 meters and special equipment is needed to build one. In this case the probability that the well will be of fresh water is higher.

Annex 4: SYSTEMATIZED QUANTITATIVE INFORMATION OF THE DISTRICT OF FILADELFIA

TABLE 1. GEOGRAPHIC INFORMATION OF FILADELFIA

Community	Direction from the Municipal Headwater	Distance from the Municipal Headwater	Type of Land	Ethic Group
Ijnapui	Northeast	94 Km.	Flat	Ayoreo Central
10 de Febrero	Northeast	68 Km.	Flat	Ayoreo Central
Jogasui	Northeast	73 Km.	Flat	Ayoreo Central
2 de Enero	Northeast	66 Km.	Flat	Ayoreo Central
25 de Septiembre	Northeast	64 km.	Flat	Ayoreo Central
Tunucojai	Northeast	54 Km.	Flat	Ayoreo Central

TABLE 2: DEMOGRAPHIC INFORMATION OF FILADELFIA

N°	Community	NF	Men	Women	Boys	Girls	Total Population
1	Ijnapui	23	36	33	7	9	85
2	10 de Febrero	26	24	26	19	11	80
3	Jogasui	30	49	24	16	16	105
4	2 de Enero	17	21	17	9	9	56
5	25 de Septiembre	13	10	7	12	5	34
6	Tunucojai	42	93	69	18	18	198

TABLE 3. INFORMATION ON THE LEVEL OF EDUCATION IN FILADELFIA

Number of Adult Population that:	Ijnapui	10 de Febrero	Jogasui	2 de Enero	25 de Septiembre	Tunucojai
4. Has no formal education	95%	95%	95%	95%	95%	95%
3. Has basic education (partial or complete)	5%	5%	5%	5%	5%	5%
2. Has intermediary school education (partial or complete)	0%	0%	0%	0%	0%	0%
1. Has technical or university education	0%	0%	0%	0%	0%	0%

Obs: The inhabitants do not refer to the number of people who had access to formal education. However in no community does this surpass 5% of the population, not even in 3rd grade basic education.

TABLE 4. INFORMATION ON THE LEVEL OF EDUCATION OF BOYS AND GIRLS IN FILADELFIA

Data on the Education of Boys and Girls:	Ijnapui	10 de Febrero	Jogasui	2 de Enero	25 de Septiembre	Tunucojai
Number of boys, girls up to 14 yrs. Old who do not attend school.	50%	50%	50%	50%	50%	50%
How many boys and girls over 12 yrs. Old are illiterate	50%	50%	50%	50%	50%	50%

Obs: Usually the communities do not refer to the exact number of boys and girls attend school. The Secretary of Education of the Gobernación said that the Ayorea boys and girls are free to attend school if they want to, and this is why not all attend and those who do, do not do so on a regular basis.

TABLE 5. INFORMATION ON THE LEVEL OF EDUCATION IN FILADELFIA

Level of Technical Education				
Category	Full course with experience	Full course without experience	Incomplete Course	With experience, without prior formation.
Score	3	2	1	
Course classification				
Plumbing				X
Construction				X
Engine mechanics				X
Administration				X

Observations: All the communities stated that they had the ideal people in plumbing, construction, engine mechanics and administration, but they only had empirical knowledge and practice and had never attended a training course.

TABLE 6. QUANTITATIVE INFORMATION ON TECHNICAL EDUCATION

Number of people with empirical technical knowledge				
Community	Plumbing	Construction	Engine Mechanics	Administration
Ijnapui	1	1	2	2
10 de Enero	1	1	1	1
Jogasui	1	3	2	2
2 de Enero	1	1	1	0
15 de Septiembre	0	1	0	1
Tunucujai	0	4	3	2

TABLE 7. PRODUCING POTABLE WATER IN FILADELFIA

		Do the tanks have chlorine?				
N°	Communities	Yes	All	Some	No	None
1	Ijnapui				X	
2	10 de Febrero				X	
3	Jogasui				X	
4	2 de Enero				X	
5	15 de Septiembre				X	
6	Tunucojai				X	

TABLE 8. FETCHING WATER (Gender) FILADELFIA

N°	Communities	Men	Women	Boys	Girls
1	Ijnapui	2%	58%	20%	20%
2	10 de Febrero	2%	58%	20%	20%
3	Jogasui	2%	58%	20%	20%
4	2 de Enero	2%	58%	20%	20%
5	15 de Septiembre	2%	58%	20%	20%
6	Tunucojai	2%	58%	20%	20%

TABLE 9. FETCHING WATER (number of times) FILADELFIA

Number of times a household fetches water (During droughts).	
Community	Number
Ijnapui	1
10 de Febrero	2
Jogasui	2
2 de Enero	0 (*)
15 de Septiembre	2
Tunucujai	6

(*) Only have one water reservoir in the community.

TABLE 10. FETCHING WATER (Means) FILADELFIA

Means of Transport used	Ijnapui	10 de Febrero	Jogasui	2 de Enero	15 de Septiembre	Tunucujai
On foot		X	X	--	X	X
Bycicle						
Cart	X					
Donkey /Horse/Mule						
Pick-up Truck/Truck/Automobile						
Motorcycle					X	
Other: Tractor	X					

TABLE 11. TIME TO VISIT FILADELFIA

Time of the tour					
To + waiting + back					
N°	Community	To	Waiting	Back	TR
1	Ijnapui	30	20	30	80
2	10 de Febrero	15	5	15	35
3	Jogasui	15	5	15	35
4	2 de Enero	0	0	0	0
5	15 de Septiembre	10	20	10	40
6	Tunucojai	10	5	10	25

TABLE 12. SOURCES OF ACCESS TO POTABLE WATER IN FILADELFIA
(Without external support)

Access to Water- with external support- during DROUGHTS					
N°	**Communities**	**Potable Water Sources (Reservoirs) functioning**	**Potable Water (Sources Reservoirs) that do not function.**	**Total**	**Observations**
1	Ijnapui	12	0	12	2 community Aljibes and 10 family aljibes
2	10 de Febrero	2	0	2	1 community Aljibe. They fetch water from an artisanal well in a nearby estate.
3	Jogasui	2	1	3	2 community Aljibes 1 will with a mill that does not work because there is no wind and the engine is out of order
4	2 de Enero	1	0	1	1 water reservoirs
5	15 de Septiembre	2	0	2	1 water reservoir. They fetch water (with a tractor wagon) from the Jesudi artisanal well.
6	Tunucojai	19	0	19	4 community Aljibes and 15 family aljibes.
General Total of Water Sources (Reservoirs)				**39**	

TABLE 13. SOURCES OF ACCESS TO POTABLE WATER IN FILADELFIA
(without external support)

Access to water – without external support – during DROUGHTS					
N°	**Communities**	**Functioning**	**No funciona**	**Total**	**Observaciones**
1	Ijnapui	0	0	0	Without support of water supply received from the gobernación they have no source of water.
2	10 de Febrero	0	0	0	Without support of water supply received from the gobernación and the collaboration of the neighbouring estate, they have no source of water.
3	Jogasui	0	1	1	If the well does not have an engine it does not work. Without support of the water supply received from the gobernación, and the collaboration from the neighbouring estate they have no source of water.
4	2 de Enero	0	0	0	Without the supply of water received from the gobernación they have no source of water.
5	25 de Septiembre	0	0	0	If the well has no engine it does not work. Without the support of the water supply received from the gobernación and the collaboration of the Jesudi community they have no source of water
6	Tunucojai	0	0	0	Without the support of the water supply received from the gobernación they have no source of water.
General total of water sources (Reservoirs)				**1**	

TABLE 14. SANITATION INFRASTRUCTURE IN FILADELFIA

Communities	Number of latrines
Ijnapui	4
10 de Febrero	1
Jogasui	3
2 de Enero	0
15 de Septiembre	1
Tunucojai	22
Total	**31**

TABLE 15. IMPORTANCE OF THE USE OF POTABLE WATER IN FILADELFIA

Are aware of the importance of using potable water?					
Percentage of the population	Up to 20%	From 21 to 40%	From 41 to 60%	From 61 to 80%	From 81 to 100%
Puntaje	5	4	3	2	1
Ijnapui	X				
10 de Febrero	X				
Jogasui	X				
2 de Enero	X				
25 de Septiembre	X				
Tunucojai	X				

Obs: Received training on potable water but they say that they are immune and do not get sick from drinking non potable water.

TABLE 16. IMPORTANCE OF THE USE OF LATRINES IN FILADELFIA

Are aware about the importance of using latrine?					
Percentage of the population	Up to 20%	From 21 to 40%	Fron 41 to 60%	From 61 to 80%	From 81 to 100%
Puntaje	5	4	3	2	1
Ijnapui					X
10 de Febrero					X
Jogasui					X
2 de Enero					X
25 de Septiembre					X
Tunucojai					X

TABLE 17 IMPORTANCE OF SANITATION IN FILADELFIA

Are aware of the importance of cleanliness (adequate waste management)					
Percentage of the population	**Up to 20%**	**From 21 to 40%**	**From 41 to 60%**	**From 61 to 80%**	**From 81 to 100%**
Score	5	4	3	2	1
Ijnapui		X			
10 de Febrero		X			
Jogasui		X			
2 de Enero		X			
25 de Septiembre		X			
Tunucojai		X			

TABLE 18 MANAGEMENT CAPACITY

Score				
Up to 20%	**From 21 to 40%**	**From 41 to 60%**	**From 61 to 80%**	**From 81 100%**
5	4	3	2	1

Management Capacity						
Community	**Ijnapui**	**10 de Febrero**	**Jogasui**	**2 de Enero**	**14 de Septiembre**	**Tunucojai**
Capacity to supply inputs to the community	1	3	1	4	4	2
They organized themselves and resolved a community issue that involved logistics	2	3	1	4	4	2
Knowledge of administration	1	3	1	4	4	1

TABLE 19. MANAGEMENT-INFRASTRUCTURE CAPACITY

Capacity to maintain the infrastructure		
Community	**Infrastructure**	**Comments on the quality of the maintenance**
Ijnapui	Tractor wagon, chainsaw, motorcycle.	Functioning. Tractor and chainsaw provided by the Gobernación.
10 de Febrero	Chainsaw, motorcycle.	Functioning. Chainsaw provided by the Gobernación.
Jogasui	Tractor wagon, chainsaw, motorcycle.	The tractor is out of order. Tractor and chainsaw provided by the Gobernación.
2 de Enero	Motocycle.	Functioning.
15 de Septiembre	Motorcycles.	Functioning.
Tunucojai	Tractor, motorcycles.	Functioning.

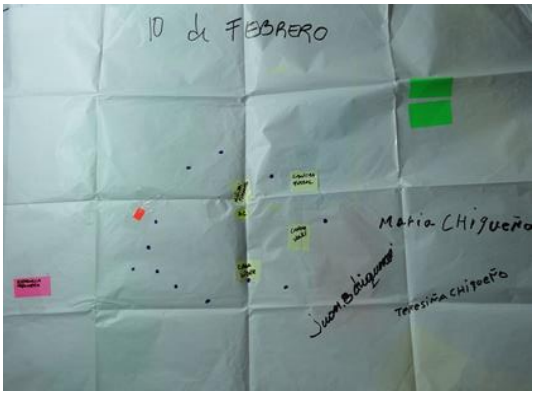
Annex 5: MAPPING W&S SERVICES IN RURAL COMMUNITIES

5.1. Indigenous communities of the District of Filadelfia

Community of Tunucojai

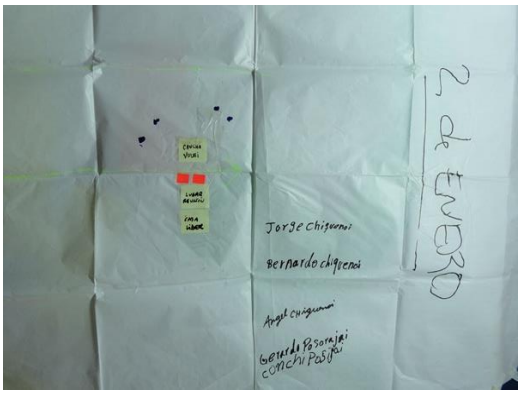
Community of Josaguí

Community of Ijnapui



Community of 10 de Febrero

Community of 15 de Septiembre



Community of 2 de Enero

CAPTION:

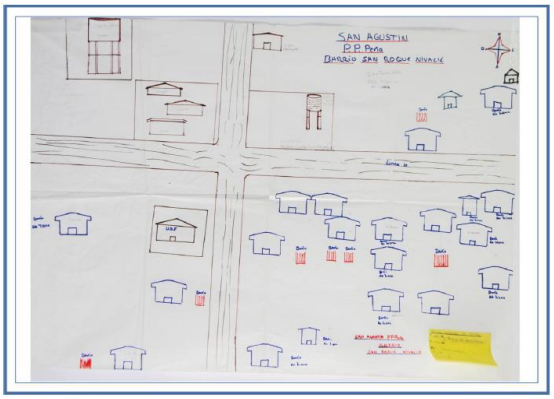
Tajamar Institution Australian tank Well Tank Latrine Piping Households Path

SENASA

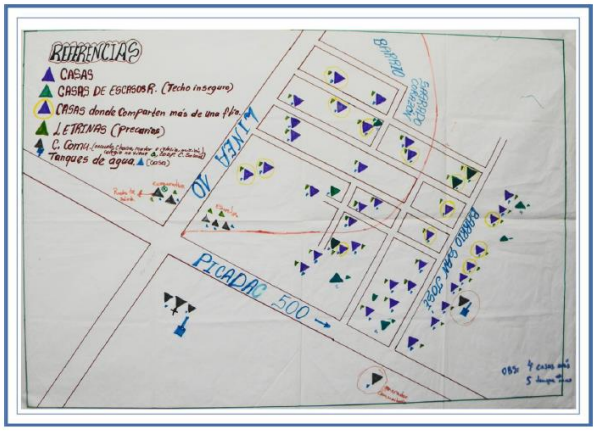
5.2. Indigenous communities attended by SENASA

COMUNIDAD SAN EUGENIO

COMMUNITY OF SAN ROQUE



COMUNIDAD SAGRADO CORAZÓN – SAN JOSÉ



Annex 6: EXAMPLE OF WATER AND SANITATION SOLUTIONS

Water supply systems and their treatment[26], [27]

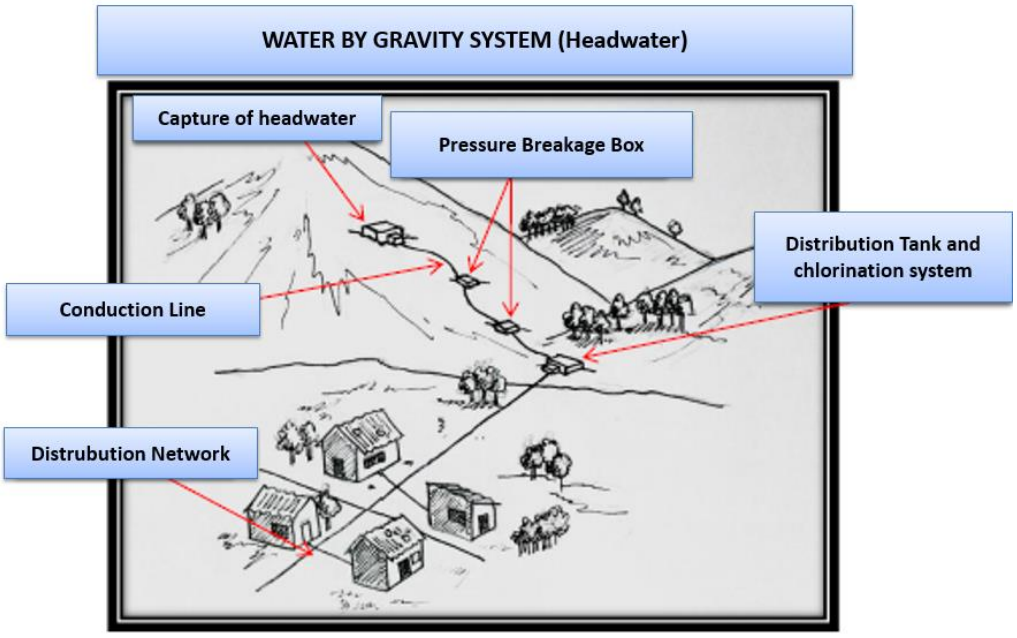
The technical options to supply water depend upon the yield and location of the sources, the size and dispersion of the population, its geographic location, climatic conditions etc. **These conditions determine if the technical option will be conventional or non-conventional. For rural populations** in most cases a simple technological system can be used that does not need skilled staff or have high operational costs.

6.1. Conventional Systems

The installation may be supplied by a public or private network. Feeder plumbing to household connections is not public. The systems may:

- Gravity supply systems without (GTS)

  In this case the water is of a good quality and does not require supplementary treatment, with the exception of chlorine. It does not need to be pumped to be delivered to the users. The water sources are underground and outcrop to the surface as springs; or is groundwater[28] that is captured by means of galleries that filter it. The water is filtered by underground layers and is of a good bacteoriologic quality. The water needs to be treated with chlorine to guarantee its operation.



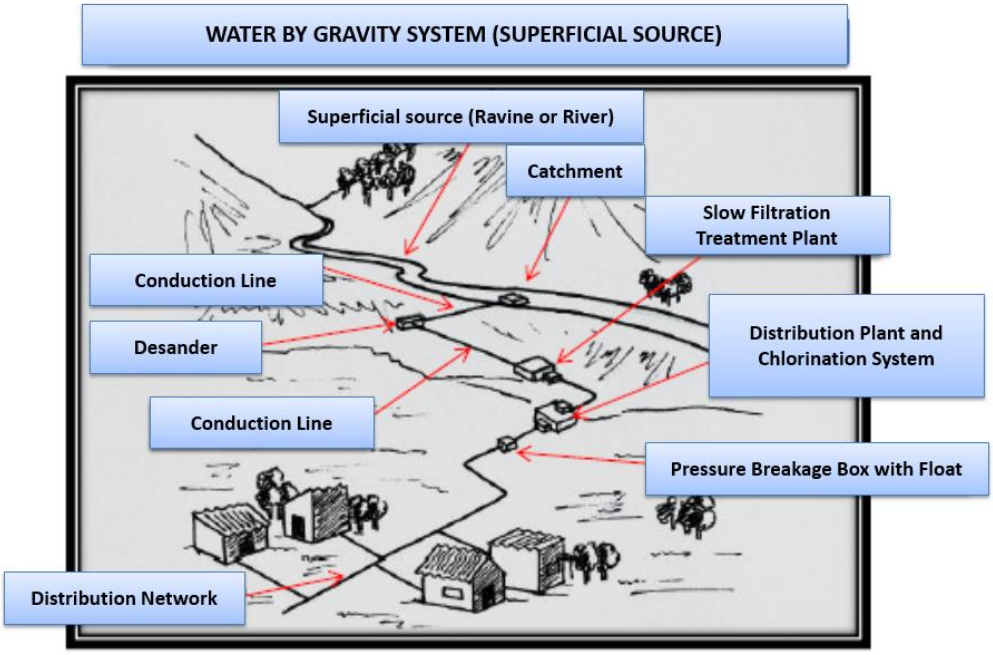
[26] The texts have been taken and adapted from: Basic Sanitation Handbooks for Gobernaciones and Municipalities. N° 2 Water Supply Systems. PAHO/WHO. Paraguay 2012.

[27] The graphs have been taken from the Handbook for the administration, ration and maintenance of potable water and sanitation systems. PAHO/WHO. Guatemala. Electronic version. 12/04/2015: http://www.mdgfund.org/library?submit=search&country=&focusarea=&publication_type=&language=&term=809&title=&page=2

[28] That are found underneath the river beds or streams.

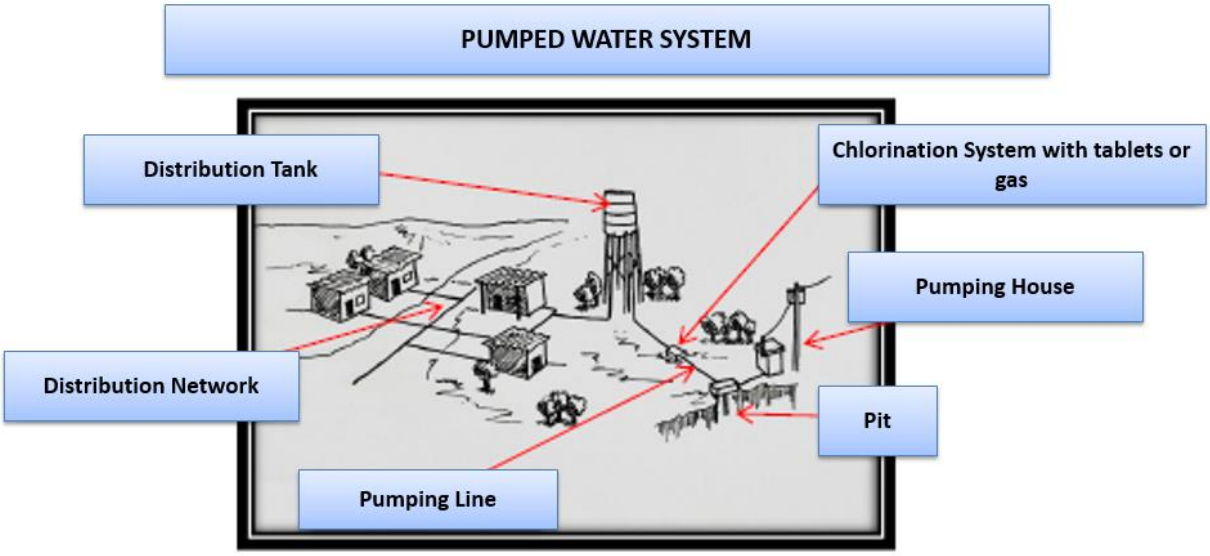
- Gravity supply systems with GCT treatment

  When the water sources are superficial and captured in canals, irrigation ditches or rivers then need to be clarified or disinfected before being distributed. The treatment plants must be designed as a function of the physical and bacteriological quality of the untreated water. These are more complex systems and require maintenance.



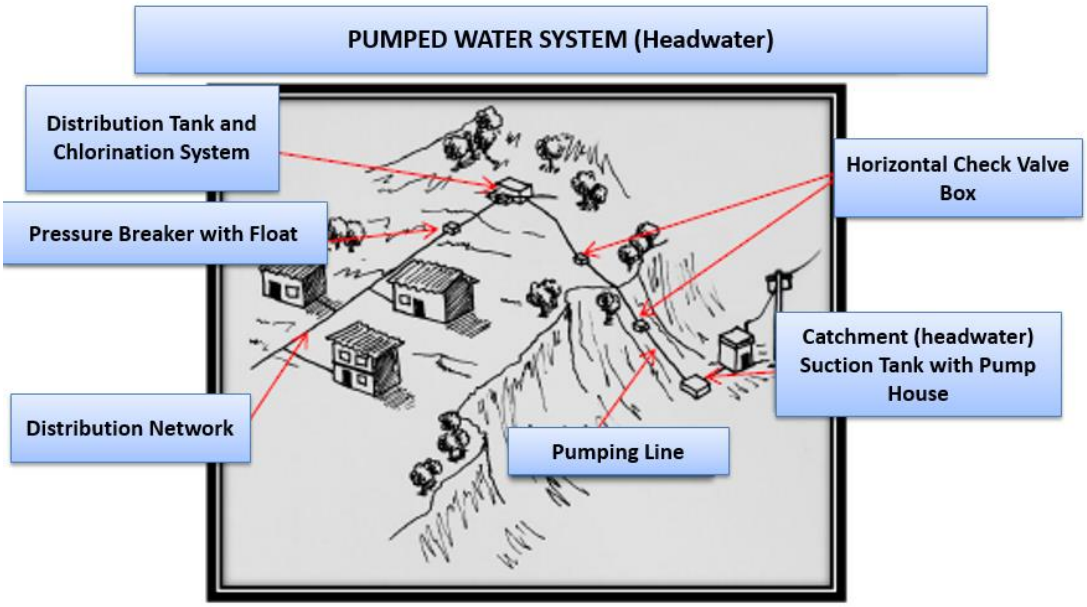
- Untreated pumped supply systems (BST)

  These systems also supply good quality water that does not require treatment since it comes from groundwater, except for the chlorine with pills or liquids. The water must be pumped to be distributed to the users and therefore these systems' operation and maintenance are more complex.



- Pumped treated water supply systems (BCT)

  This water contains impurities and therefore needs to be treated. The treatment processes are defined according to the quality of the water and type of impurities that must be eliminated. Physical, chemical and bacteriological tests must be done. However, the design of a treatment installation must be done in the simplest way possible, avoiding mechanical equipment or specialized controls.



6.2. Solutions for dispersed indigenous and rural populations

SOLUTIONS FOR POTABLE WATER

- **INDIVIDUAL**

  - **Capturing water from the water table**

- Springs or headwaters
- Superficial wells
- Deep wells excavated/operated by hand

  - **Gathering and storing rainwater**

- **COLLECTIVE**

- Water flows: rivers, streams, wetland, reservoir, diversion
- Drilled deep wells
- Reservoirs and elevated tanks
- Distribution networks

SOLUTIONS OF SANITARY SEWAGE

- **INDIVIDUAL**

- Dry pit latrines
- Ventilated improved pit latrines
- Double-vault compost latrine
- Water seal latrines (pour-flush latrines)
- Septic systems
- Septic tanks
- Drain pit

- **COLLECTIVE**

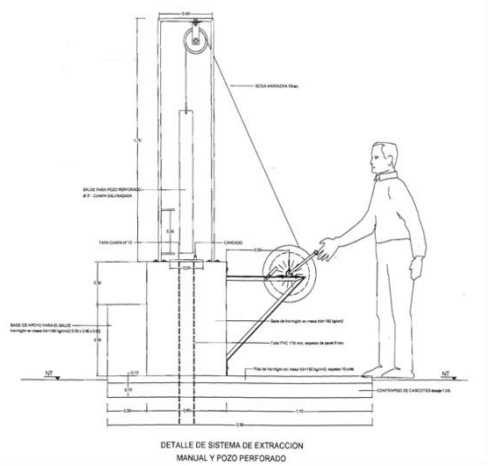
- Simplified sewerage
- Condominial sewerage
- Decanted sewerage (without entrained solids)

Capturing superficial water:

Capturing water from the water table

Superficial wells down to the water table

Deep wells operated by hand



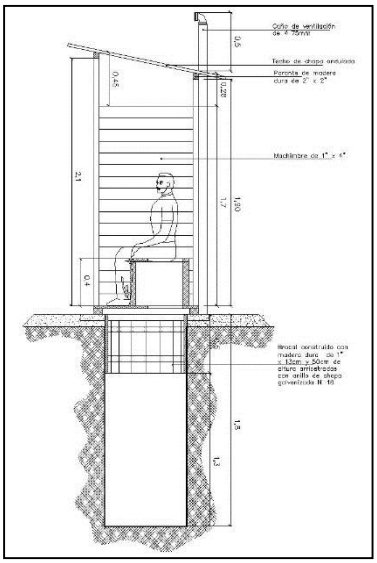
Gathering and storing rainwater

Roofs, troughs and aljibes

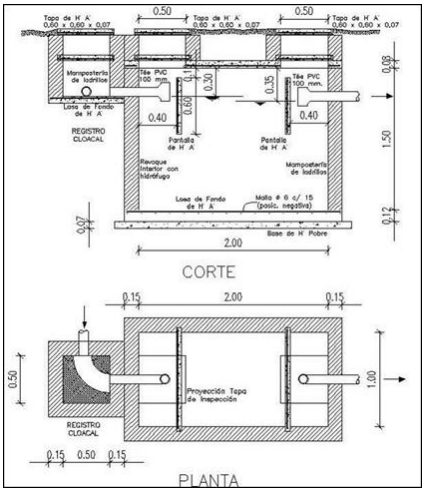
Schematic view of a tajamar (only to store water in areas that have water stress)

CORTE LONGITUDINAL TAJAMAR

Family latrine systems



Modern latrine and septic tank:



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Annex 7: INVESTMENT PROPOSALS IN WATER AND SANITATION, DISTRICT OF FILADELFIA

Investment Proposals - FILADELDIA, BOQUERÓN.						
COMMUNITIES	**IJNAPUI**	**10 de Febrero**	**JOGASUI**	**2 de Enero**	**15 de Septiembre**	**TUNUCOJAI**
WATER INFRASTRUCTURE						
Improve/build water supply works.						
To build superficial wells in the community. Certain communities can have potable water and distribute it to nearby communities. *Ijnapui, Jogasui and Tunucojai (Jesudi, Sto. Domingo, San Martin, La Esquina and Garay) are on the list of the Municipality to perform drills with UNICEF funds.* *Mr. Cesar of the Municipality explained that they are looking into the possibility of drilling another well in Jogasui, recovering the well at Jesudi and putting up an elevated tank to provide water to nearby communities in case of an emergency.*	Three drills were done for a superficial well then a water study and, if water that can be treated to make it potable is found, the well will be cased. Obs.: This work will be done by the Municipality with UNICEF funds.	The community will receive water from Jogasui or Jesudi. (This part of the works will be done with funds from the Joint Programme).	Three drills will be done for a superficial well to be followed by a water study and, if potable water is found, the well will be cased. *Obs.: This work will be done by the Municipality with UNICEF funds.*	The community will receive water from Jogasui or Jesudi. (This part of the works will be done with funds from the Joint Programme).	The community will receive water from Jogasui or Jesudi. (This part of the work will be done with funds from the Joint Programme).	Three drills will be done for a superficial well, then water study will be conducted and if the water is potable the well will be cased. *Obs.: This work will be done by the Municipality with funds from UNICEF.*

To construct the pumping systems for Jesudi and Jogasui, so that they can be the emergency water supply center. This action will be funded by the Joint Programme.	In emergencies the water from the Jogasui and/or Jesudi wells will be used to supply water.	In emergencies the water from the Jogasui and /or Jesudi wells will be used to supply water.	Jogasui has a well.	In emergencies the water from the Jogasui and/or Jesudi wells will be used to supply water.	In emergencies the water from the Jogasui and/or Jesudi wells will be used to supply water.	In emergencies the water from the Jogasui and/or Jesudi wells will be used to supply water.
To build community and family aljibes neded in the communities. Thus the inhabitants will not have to depend exclusively on the well and maintain its potability. This action will be performed by the Gobernación with own funds.	To build 13 family aljibes to satisfy the local demand. And to provide 22 safe rooftops.	To build 22 family aljibes to satisfy the local demand.	To build 18 family aljibes to satisfy the local demand.	To build a community aljibe with shed/tinglado.	To build a community aljibe with a shed/tinglado.	To finish the necessary gutters/ canaletas for the existing aljibes and to build 29 family aljibes.
Mobile unit for the district. Municipality and UNDP.	The mobile unit will visit the communities.	The mobile unit will visit the communities.	The mobile unit will visit the communities.	The mobile unit will visit the communities.	The mobile unit will visit the communities.	The mobile unit will visit the communities.
To provide the aljibes with the Canals they need. Funds from the Gobernación.	To provide 13 gutters/ canaletas.	To provide 26 gutters/canaletas.	To provide 14 gutters/ canaletas.	To provide 17 gutters/canaletas	To provide 15 gutters/canaletas.	To provide 29 gutters/ canaletas.
To build a tajamar, depending upon the soil study. In this manner the water from the tajamar can be used for personaly hygiene and washing clothes and therefor the water from the wells or aljibes would be spared for this use.	Under construction with MOPC.	Under construction with MOPC.	To build 1 tajamar.	To build 1 tajamar.	To build 1 tajamar.	To clean two existing tajamares. (They are clogged with plants, branches and leaves).

SANITATION INFRASTRUCTURE						
COMMUNITY	**IJNAPUI**	**10 de Febrero**	**JOGASUI**	**2 de Enero**	**15 de Septiembre**	**TUNUCOJAI**
Provide sanitary latrines:	23 Sanitary Latrines.	22 Sanitary Latrines.	18 Sanitary Latrines.	18 Sanitary Latrines.	20 Sanitary Latrines.	20 Sanitary Latrines.
TRAINING						
Training how to use potable water and sanitation	Applied in all communities.					
Training how to manage the water system with an emphasis on the coverage of operational and maintenance costs	Applied in all communities.					
Construction Training as a function of community implemented works	Applied in all communities					
Infrastructure maintenance training. Plumbing, civil engineering construction, engine mechanics.	Applied in all communities					