

Appendix 2.

Results of Surveys and Workshops

A.2.1 Participatory Rural Appraisal (PRA)

A.2.1.1 Methodology

(1) Selection of facilitators for participatory village development

In order to explain the training of facilitators for participatory village development and request the selection of suitable candidates for the training, all neighborhoods in Munguine and Maluana Localities were visited. Meetings were held with the *bairro* (ward) secretaries, co-operative and association representatives and some of the community leaders to create awareness about the need for the candidates to be trained as facilitators for village development. Criteria for selection were discussed with the groups mentioned above in each *bairro*, and it was agreed that the ability to read and write was a basic criterion, the choice should be accepted by the community of each *bairro*, they should be willing to participate as volunteers in the future activities for village development, and women and men should both be considered. After one week, each location produced a list of names of potential candidates, which totaled 27 (17 men and 10 women). The candidates have between four and ten years of schooling, which is considered by the villagers as the absolute minimum to be able to effectively absorb and analyze the situations in the Study area.

(2) Training of facilitators for participatory village development

Training of the selected 27 facilitators for participatory village development was carried out for six days at the Union headquarters in Munguine Locality. Participatory Rural Appraisal (PRA) methods were adopted to identify community priorities and their historical context so that realistic solutions could be discussed with a view to formulation of village development plans. Participants were trained to assess communities' needs through learning about the area's history, its natural resources, the social life and traditional power, the economic activities including agricultural production systems, livestock raising, fishery and others, infrastructure situation, main problems and possible solutions. They learned the following tools: direct observation, semi-structured interviews, village mapping, daily routines, seasonal calendar and priority matrix.

But the short duration of training and the low education level of participants resulted in slow understanding of the participants and a need for further training particularly on the problem analysis and the methods to collect gender-specific information. So from the 27 trained people, ten people were selected by the group itself to receive further training during the first week of PRA implementation. During the additional training, the following additional techniques were added: village history (timeline), farm map, and gender-disaggregated mobility map, gender-disaggregated activity calendar.

It was noted that because of the newly trained facilitators' "proximity" to the community that problem analysis was neither objective nor critical. Questions were developed on the identified problems, their causes, alternative solutions (including actual problems; the kind of improvements needed; alternative

means of bringing these about), actual and potential roles of the community and other relevant actors in these solutions, and local resources that could be used in these solutions.

(3) Implementation of Participatory Rural Appraisal (PRA)

Participatory Rural Appraisal (PRA) was carried out in the facilitators' own residential areas and among their associations and co-operatives so that the conditions and inter-relations of the five capital assets (natural capital, human capital, social capital, physical capital and financial capital) could be assessed and the development potential and constraints identified. The study area was demarcated into the following 11 areas in order to conduct PRA in relatively small and cohesive communities:

- 1) Munguine Bairro 1
- 2) Munguine Bairro 2
- 3) Munguine Bairro 3
- 4) Munguine Bairro 4
- 5) Munguine Bairro 5
- 6) Maluana Bairro 1
- 7) Maluana Bairro 2
- 8) Maluana Bairro 3
- 9) Xerindza
- 10) Pateque
- 11) Musutho

In addition, the following five associations/co-operatives are included in PRA exercise mainly to assess their farmland situation and the needs of associations/co-operatives.

- 1) Association Pembe
- 2) Association Tchuri
- 3) Association Pateque Block 1
- 4) Association Pateque Block 2
- 5) Co-operative Pateque

Action-based training of facilitators was carried out during the implementation of PRA and targeted the group of ten facilitators selected at the end of the first training phase. It was expected that through close supervision, and additional training, this team would improve its capacity for critical analysis and independent determination of the direction and scope of PRA carried out from then on. After this PRA exercises, seven facilitators (out of ten trainees) demonstrated the greatest capacity to carry out PRA exercises. They had been previously selected during the past two years by the co-operative and association members to participate in a three-week training course in agricultural extension methods and techniques at the Agricultural Training Center in Boane, Maputo Province.

A.2.1.2 Major Results form Participatory Rural Appraisal (PRA)

(1) Characterization of principle differences in the study area

The most significant difference between Munguine and Maluane is based on the presence of the Incomati River valley in Munguine. This valley has been used since colonial times for commercial agriculture and has had a certain amount of prominence due to the scale of private operations in colonial times and the occurrence of official government assistance after independence. As a result of the prominence of the area in terms of its potential, ex-farm laborers and others people migrated to settle here after independence in order to take advantage of these opportunities.

Major agricultural infrastructure was constructed by the private farmers in colonial times including large-scale dike protection from flooding and controlled irrigation. This investment is located adjacent to the current *bairros* 1, 2, 3, and part of Xerindza in Munguine Locality.

South of this area (*bairros* 4 and 5 in Munguine, and Pateque in Maluana), agricultural land was not protected by the dike, and although improvements had been made for it was more vulnerable to flooding and droughts, and thus had slightly less commercial potential. The dike has progressively deteriorated with washouts since 1977, and this year's floods have completely neutralized its potential. At present, none of the lowland area is being exploited to the extent of its potential because of the lack of the dike and possibilities for irrigation. *Bairros* 4 and 5 have no social or basic infrastructure such as water supplies and road access.

The concentration of settlement along the edge of the river valley has occurred in *bairros* 1, 2, 3, and Xerindza as a result of the perceived potential of the valley for commercial farming. In addition, there are better facilities for water supply in this area and the entire social infrastructure of Munguine is located in these *bairros*. The population is more stable and has developed subsistence dry land farming systems in the highland area bordering the river. The low areas are perceived solely as a source for income generation, from which they can augment their household consumables and durable goods.

Further to the interior, near Maluana trading center on the main EN1 highway, most residents have no alternative commercial income source from lowland farms. Many people in Maluana are migrants who have settled following their refuge to the area during the war. A significant proportion of these are still returning to their original settlement areas and Maluana is experiencing a continuous trickle of out-migration. Social infrastructure in the Locality is distributed between Maluana center, Musutho by the EN1 and Pateque.

A large proportion of community members (particularly women) in the high potential commercial agriculture zones of *bairros* 1,2,3, and Xerindza are members of agricultural associations and co-operatives through which they obtain access to farm land in the low lying areas. Although the men of these areas may officially be registered as members of the associations/co-operatives, since the work is not salaried, it is not perceived as a priority for them. Presently, with the deterioration of the dike in the southern area, the largest amount of land available for cultivation by hand and without the threat of

flooding, is in this northern part of the valley adjacent to *bairros* 1, 2, 3, and Xerindza. (The flood plain reaching to the river is much broader in this area in relation to the area adjacent to *bairros* 4, 5, and Pateque.) This has continued to make the former area predominant in local commercial activities.

Community organization in Maluana was hardly prioritized by the residents who were not positive about their experiences. These were based on the single co-operative that had managed a shop and 'lost' the income from its sale after a period of decline and lack of capital. They showed a significant disinterest in carrying out any associative activities. Their only expressed interests were based on employment opportunities, and food-for-work programs, which were generally perceived as unjustly favoring *bairros* 1,2 and 3 in Munguine.

(2) Community history and profile

a) Munguine and Maluana

Munguine Locality is divided in 5 *bairros* and the areas of Machovane (often considered as part of Munguine *bairro* 5) and Pateque (including Musutho along the EN1 highway) to the south. Maluana Locality is divided into 3 *bairros* and the areas of Pafeni and Xerindza to the north and Macandzene to the northwest. The majority of these *bairros*, particularly those of Maluana, were created at the end of 1970s and 1980s during the civil war years. The name Munguine is derived from the sand dunes found in the area. In the local language "Mungu" literally means 'sand mountain', and the area where this is located is known as Mungu-ine, hence the name of the Locality. The name Maluana, on the other hand, has no particular meaning.

Munguine is traversed by an important railway line, which links Maputo Port and the Republic of Zimbabwe. This is particularly relevant because most of the agricultural produces from Munguine are carried by the train to neighboring urban areas for sale, such as Maputo city and Manhica town, as well as Chokwé city and Chicualacuala further away in Gaza Province. Maluana not only has the railway line passing through it, but also the national highway EN1.

In Munguine Locality, *bairros* 1, 2, and 3 are the administrative center and have the highest population density in the area. Scattered among houses constructed of local materials, there are many houses made of cement blocks with corrugated iron roofs which are said to have been financed with income from the sale of bananas.

Historically, the area of Maluana was more affected by the war, is scantily populated and, along the principle road transport corridor of the country, has attracted a mixture of people from different areas with little legitimate connections based on residence and family. In distinction, Munguine, closer to the river Incomati, also has "outsiders", but these are people who voluntarily returned after their obligatory labor contracts in South Africa.

b) Social Organization

In Munguine and Maluana Localities, the social organization of families is very similar throughout the area. Households tend to be small with an average of about 6 people per family. This was described similarly by all participants in PRA and it was found that, in all areas, they claimed that children left their parents' homes, many times against the will of the latter, and quite often citing their parents as sorcerers. This phenomenon appears to occur when the children reach about 16 years of age. During discussions throughout the study area, participants were unanimous that young people marry very early these days and that this is a basic reason for the high number of divorces in the area. Participants (most of whom were adults) claimed that marriages are occurring among youths who have not yet reached maturity adequate to the creation of a stable home.

Formal and traditional marriages are not carried out in the Study area in general. Instead, a young woman usually reaching 15 or 16 years leaves her parents home and goes to join her husband. Among the reasons cited for this situation, according to those interviewed, is the fact that marriages carried out in the civil registry or the church are expensive and lengthy, such that they are not affordable by most people.

A "lack of respect" manifest by children in relation to their parents was noted by participating parents as another major reason for unstable homes. In spite of this apparent weakening of relationships, they do not sever social relations completely, since it is in the interests of sons to claim their inheritance rights and during their lives, to their rights with their wives to farm part of the family land and therefore feed their homes. This is most apparent in the highland area rather than in the valley lowlands. Even following the death of a man, his wife maintains the right to farm the land which he had access to, and it will be eventually passed to his sons.

A practice cited, that apparently is no longer carried out, but illustrates the importance of parental authority, is that of parents permitting all their children except the last girl to marry. This ensures that the parents will be able to guarantee that they are taken care of in their old age by the remaining last girl.

c) Power structure in the bairros

Timelines and discussions in groups revealed that, in Munguine and Maluana, the predominant power structure is formally led by the secretary and his adjunct, followed by the heads of 60 and 10 houses. This structure was created after independence in 1975 to replace the traditional structure that was formally abolished. The "traditional" structure used in colonial times for local governance involved the *régulo*, the area chief and the chief of the land. The current *bairro* structure has the tasks of organizing and mobilizing the community to participate in various *bairro* and Locality activities. It acts as a link between the *bairro* community and the Locality structure.

Traditional authorities maintain their status as societal foundations to a certain degree though not a significantly obvious source of power. Occasionally the formal structure resorts to them to carry out

traditional ceremonies such as those to call rain and to force out plagues. The traditional structure also continues to be important in the distribution of plots of land for use in the highland area. In this area, the land is considered to 'belong to' the original residents, and in the case of new arrivals wishing to live in the area, it is these known and respected traditional 'owners of the land' who are solicited to concede land use rights.

d) Natural resource use

The Study area consists of a broad highland area to the west used principally for residential purposes and some dry land agriculture. To the east and forming the border of the Study area is the lowland valley of the River Incomati. This is a floodplain and is solely used for irrigated agricultural purposes. Visits and meetings confirmed that water was collected for drinking and other domestic uses from very shallow wells hand dug at the edge of the valley. These are subject to occasional flooding, but not on an annual basis. Natural springs also occur in the valley, as do two in the highland area in Maluana town and in Xerindza. There are four small tributaries draining into the Incomati Valley that are located in the Study area. These, like the valley itself, are used for "wetland" farming.

Meetings and transects confirmed the presence of light forests in the highland areas, with reeds used for building purposes. These resources, people said, were used in the following manners: in the highland, firewood is collected from the forests for use and for sale in Manhiça town and Maputo City. The wild fruit producing "masala" tree and sugarcane are valued for their use in the distillation of alcohol, and are frequently sold in the towns and local rural areas. Cashew fruits were also used for the same purpose until the most recent years when cashew trees have ceased to be productive. A number of reasons were given for the poor production of cashew trees, including anecdotes citing their registration by the government after Independence as causing this. It is likely that their age is a major factor in the decline of production. Some trees are cut and their trunks (approximately 15-cm diameter) used for building purposes. Cashew trees and all fruit trees are prohibited by the Ministry of Agriculture and Rural Development to be cut, so where these are cut, they are only used locally. In the meetings, residents of the highland areas complained that distances are constantly increasing for women to search for firewood.

Some mentions were made of trees as a source of traditional medicine for use by herbalists and by families with members that have specialist knowledge of particular treatments. No right to use of forest products from specific areas was mentioned. However, families retained the right to grazing areas for their cattle and goats.

(3) Major stakeholders and organizations in the community

Predominant among residents in the study area were the farmers' associations and agricultural co-operatives. The majority of female residents close to the Incomati Valley are members of these associations. In Maluana in the interior, a lower proportion of residents are involved in these associations. Participants in meetings explained that around 80% of members are women, and that men only participate when they have no other income providing activity. The notable exception is

Association of Ex-Miners which has a majority of male members (15 of a total of 18 members), and the female members are miners' widows. Women have become members as a form of obtaining access to farming the lowland areas, and as a means to producing enough so that some may be sold. Most women members are female heads of households, widows or otherwise responsible for children without support from men. A woman and her husband are almost never members of the same association. This strategy was said to ensure a member of the family available to cultivate the family plot, when the routine weekly obligation to work on the Association's plot arose.

The principal distinction between co-operatives and associations in the area was that co-operative members only work on communal land, while associations provide the right to the access to land for individual members, from which the produce is the responsibility of the individual, as well as common association land which should be worked on by all members. The produces of the latter are used for the benefit of all members. Co-operatives have become less popular and today, and there are very few of them still actively operational.

Many participants in the PRA meetings cited religious groups as key stakeholder groups. Of these, the most important group in terms of numbers of members is the Zionist Church. It is a healing church, which focuses its activities at night so that people are free to participate in them. Religious meetings are frequent and promote the spiritual and physical health of believers. A few members of the Catholic Church live in the area. Although numerically few, activities are reinitiating with interest in rehabilitating infrastructure and resulting in new churches, a school and water points. This is strengthening the position of the church once again.

The military training center, although not part of the community, was noted as having had a significant impact in the social life of the area. During the civil war, many people took refuge here so that they would be better protected. The center has an electricity supply and is due to have telecommunications shortly.

Ex-soldiers that have returned to their homes have no experience of working in the area, have had no education, and constitute an important stakeholder group, because most of those are not employed today. Ex-soldiers in Munguine *bairro* 3 who participated in PRA demonstrated their interest in initiating income-generating activities such as chicken raising.

Most of ex-miners in the area tend to be those who returned before or during the civil war, subsequently lost their possessions during the civil war, and currently find themselves unable to return to the mines due to the lack of available contracts. A group of ex-miners in Munguine *bairro* 3 showed interest in participating in income generating activities such as a bakery or pig rearing.

Administrative Post of Maluana is administratively divided up into two Localities, each of which has a general secretary, then into *bairros*, each of which have a secretary. There are also the appointed heads of 60 houses, and the appointed heads of ten houses. This administrative structure was originally created by FRELIMO party after Independence.

The traditional medical practitioners' association AMETRAMO has representation in the area. Although it is not a numerically significant stakeholder, its roles in healing people and mediating the land and social conflicts make it important.

Other important stakeholders include community leaders, *ex-régulos* - the "traditional" leaders used by the colonial government as the local authorities, and the traditional chiefs of the land. The latter are important elders (male organizers and female implementers) who are asked to assist in the maintenance of fertility of the soil, in the prevention of plagues and in the demands for rain.

The trained community extensionists in the area constitute an important resource for community organization and facilitation of learning processes. During the PRA implementation, they demonstrated their capacity and key roles as younger moderators and facilitators of development.

(4) Situation on agriculture and livestock

Discussions concerning the history of the area also revealed that, in colonial times, the major agricultural producers in the lowland part of the Study area included Manuel Pateque, Martins de Azevedo and some Chinese farmers. They had large agricultural companies that focused on the commercial production of rice, bananas, maize, wheat and vegetables. These companies employed cheap labor from the three southern provinces of Mozambique, and also used machinery that worked on the land and cleaned the main drainage channels in the lowland farming areas.

Information collected during the PRA demonstrates that drainage channel maintenance was carried out manually, but mechanical excavators carried out the task of amplifying the network. Production from these farmlands was sold in the markets of Maputo and Manhica among others. It was a significant contribution to the agricultural economy of southern Mozambique at the time.

After Independence, many of these commercial farmers left the area and the state introduced the agricultural co-operative system. The introduction of co-operatives was an effort to try and make rational use of the potential of the area. Information from the field says that the co-operatives were successful initially. They produced a significant amount and income from the sales of produce was kept in a bank account. However over time many of the co-operatives failed and closed or became discredited. Among reasons cited for this were:

- Lack of transparency in the management of funds obtained from the sale of produce
- Lack of the sense of ownership on the part of co-operative members; many of them did not understand that they had to work in the co-operatives
- Lack of adequate tools for working the land
- Lack of maintenance of existing hydraulic infrastructure such as the dike, drainage channels and floodgates
- Natural and political disasters such as droughts, floods and the civil war

The people of Munguine and Maluana over the past 20 years have been victims of the natural and political disasters mentioned above. At the end of the war and at the end of each new disaster, avalanches of humanitarian assistance from organizations were trying to re-establish the people's normal life. During these occasions, almost all assistance was offered directly to the villagers.

In the analysis carried out by the different groups, one of the reasons why so many donor organizations appeared to assist was that this area is close to the capital city of Maputo and thus easily accessible. Another reason, for the selection of Munguine in particular, was that it includes the low lying farm land with such great agricultural potential, that has fed the idea that with a little assistance the community should be able to work the land and very rapidly achieve a better state of socio-economic well being. For this latter reason, donor organizations have offered agricultural tools (hoes, rakes and large knives), gumboots and food-for-work to open drainage channels.

The above situation has created a certain dependence among the communities of the area. This was evident throughout the area in all meetings and the attitude of dependence is well ingrained in people's views of outsiders' roles in the area. Thus people are accustomed to receive all donations without any obligations and with little energy exerted. Cleaning drainage channels to benefit the community in general became dependent on food-for-work situations, and the result was that maintenance of the channels was abandoned altogether when there was no external stimulus. This latter situation is cited by members of local communities as a particularly preoccupying problem, because agriculture in the lowland zone is greatly dependent on the good operation of the hydraulic infrastructure – the dike, drainage channels and their floodgates.

Membership of associations guarantees access to lowland farming areas. In Mozambique, all lands are owned by the government, and the right to use the land for 50 years can be given to associations and individuals, but the formal procedure for applying for this right is very bureaucratic and time-consuming. As such, for small farmers, the land is only accessible through associations which give members the access to a plot for their own individual production as well as oblige them to work on the common field.

Presently agriculture in many of the lowland areas is said to be impractical as a result of the deterioration of the drainage system. The floods this year have significantly deteriorated the situation. The only areas where it is possible to work are those most distant from the river, those closest to the higher lands, where it is possible to use traditional agricultural tools such as hoes, large knives and oxen for example.

People claimed that the experience of the bad management in agricultural co-operatives after Independence and the weakness of associations created later have severely damaged the community spirit. The individual farming work has also become very difficult for most people due to their shortage of adequate agricultural tools. Collective work in common spaces and common work such as

cleaning drainage channels require the co-operation and contribution of all members. With the debilitated organizational capacity, this is seen to be impossible in many cases.

a) Seasonal calendar

Most of the population in the study area is involved in farming in the highland areas as well as a significant proportion in the low lying valley. Dry land farming is practiced in the higher areas almost exclusively for subsistence, and involves the following crops: cassava, maize, peanuts and cow peas. Some cattle and goats are kept by a few families. These crops are only cultivated during six months of the year immediately prior to, during and following the major rainy season commencing in October.

The low lying areas in the valley are used for intensive year-round 'wet land' farming producing maize, sugarcane and produce in high demand in the urban areas such as bananas, sweet potatoes, cabbage, lettuce, onions, and garlic. Income from the sale of these products is used to purchase manufactured goods such as salt, soap, matches, cloth, paraffin, cooking oil, hoes, large knives and axes for example.

Months/Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize						Tilling						
								Planting		Weeding		
												Harvest
Peanuts						Tilling						
								Planting		Weeding		
												Harvest
Cow peas						Tilling		Planting				
										Weeding		
				Harvest								
Cassava						Tilling		Planting				
										Weeding		
	Weeding								Harvest			

Figure A.2.1.1 Seasonal Calendar of the Highland Area

Months/Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize	Preparation		Planting					Planting			Harvest	
	Harvest					Harvest						
Banana	Planting suckers				Weeding							Cut leave s
		Harvest						Weeding				
Onion			Seedlings	Transplant				Harvest				
Sugarcane	Planting											
	Harvest											
Sweet potato	Harvest											
Cabbage		Seedlings				Har- vest						
			Planting									
Lettuce			Seedlings	Transplant								
					Harvest							
Cassava							Planting					
					Harvest							
Beans			Planting									
					Harvest							

Figure A.2.1.2 Seasonal Calendar of the Lowland Area

(5) Situation of other productive activities

In the study area, aside from agriculture and animal care, people also produce alcoholic drinks (from sugarcane, masala and maize chaff), cutting and sale of firewood, the production and sale of charcoal, and the sale of poles for house construction, the cutting and sale of reeds for construction and wood for carving. Only alcohol is solely sold locally, all of the other products are mainly sold in Manhica, Marracuene and Maputo.

(6) Situation of Gender

Gender-sensitive PRA tools were used to obtain information about roles and participation of men and women in different spheres of social life. Thus, agriculture was said to be carried out by men and women, however in reality, this is basically women's work. Many men said that they go to the fields to assist their wives. Men think that 'work' for them means the paid employment, and their other activities include cutting firewood for sale, cutting wood for the production of charcoal, cutting poles of varying sizes for construction of houses. Women carry out all activities related to the sale of these products, and may leave her home for between a day and a week to Maputo, Chicualacuala, Manhica, Maracuene and Chokwe for this.

Daily routines were carried out as one of the PRA exercises. It was only partially useful insofar as women's notion of time was not based on the use of a watch, and their activities are not regularly executed, causing some confusion in the discussions. In addition, the routine nature of so many tasks caused women in particular to be unable to distinguish them verbally as independent activities. The

daily routine exercise did not include occasional activities such as trips to Maputo to sell goods. Table 2 illustrates the kinds of activities mentioned during the PRA. Table A.2.1.1 is an example taken from Munguine *Bairro* 1, which is fairly representative of the other areas.

Table.A.2.1.1 Women's Daily Routine – Munguine *Bairro* 1

Time (hours)	Women's activities
6:00-7:00	<ul style="list-style-type: none"> - Wake up and wash the face, - Sweep outside the house, - Collect water, - Prepare breakfast for the children going to school;
7:00-7:30	<ul style="list-style-type: none"> - Leave and arrive in the field
11:00	<ul style="list-style-type: none"> - Finish work in the field - Search for food for lunch - Collect firewood along the way
11:30	<ul style="list-style-type: none"> - Arrive at home and prepare lunch
12:30-18:00	<ul style="list-style-type: none"> - Lunch - Firewood collection, - Water collection - Return to the fields - Prepare the evening meal - Heat water for the husband and children to bathe.
18:00-19:00	<ul style="list-style-type: none"> - Evening meal
19:00-21:00	<ul style="list-style-type: none"> - Amusement and sleep

Men, as mentioned above consider their role as supporting their women in the fields. Many consider their work in supporting their wives in the fields as a result of their lack of employment. Very few consider this their primary activity, despite it being their sole source of subsistence and family income. Men tended to simply think of work as being paid for working in another's field, working in the mines in South Africa or in a manufacturing industry. Table A.2.1.2 below shows the daily routine of the men in Munguine *Bairro* 1, considered representative of most men in the Study area.

Table.A.2.1.2 Men's Daily Routine - Munguine *Bairro* 1

Time (hours)	Men's activities
5:00	<ul style="list-style-type: none"> - Wake up and prepare to go to the fields
6:00-6:30	<ul style="list-style-type: none"> - Arrive in the field
11:00	<ul style="list-style-type: none"> - Finish work in the field
12:30	<ul style="list-style-type: none"> - Arrive at home
13:00	<ul style="list-style-type: none"> - Lunch followed by a rest
13:30-14:00	<ul style="list-style-type: none"> - Rest
15:00	<ul style="list-style-type: none"> - Return to the field or carry out other activities
17:00	<ul style="list-style-type: none"> - End of work / activities
17:30	<ul style="list-style-type: none"> - Bathe
18:00	<ul style="list-style-type: none"> - Evening meal - Amusement telling stories to the children
21:00	<ul style="list-style-type: none"> - Rest through to the next day.

(7) Positive aspects in the community

Parental authority, though waning, is still considered important, as is the influence and respect of so-called traditional elders. The fundamental principles of respect for age and experience are still evident. Traditional systems for caring for family members is vestigial and widows, for example, still have the right to assistance from the husband's family when the widow has had his children.

Mutual assistance is still carried out, although less strongly than in the past. This occurs usually, at the beginning of the rainy season when groups of neighbors and family join to clear and prepare land for planting. Seeds are sometimes loaned at this time to those who have none, with the expectation of return of some after the harvest.

The accumulated experience of women participating in associative activities and commercialization of natural and agricultural products has helped them develop a strong sense of corporate independence. Women are the managers of the income generated from almost all commercial activities they carry out. Indeed many men pass the responsibility of management of funds for their children's schooling and for provision of food and essential goods to the home to their wives.

(8) Principal problems in the community

The principle problems named in almost all locations were the need to reconstruct and extend the dike, the maintenance / cleaning of the drainage channels, lack of agricultural tools (hoes, large knives, axes and ploughs), lack of seeds, clean water supplies, improved health services and secondary schools. Community members mentioned their willingness in contributing voluntary labor to the resolution of some of these problems. Prioritization of the problems by the communities differed according to specific zone, and as a function of particular local factors. Table A.2.1.3 is a summary of these:

In the lowland area, among the associations, it is clear that their priorities lie with agricultural tools, seeds and infrastructure. In the highland residential areas close to the River Incomati, the priorities tend to focus on basic needs such as water and health (with the exception of *Bairro 1*), while inland towards Maluana, priorities are more focused on income generating activities.

Table A.2.1.3 Problems as Prioritized by Communities

Location	1st priority	2nd priority	3rd priority
Munguine Bairro 1	Employment	Water	Ambulance
Munguine Bairro 2	Water	Seeds	Health post
Munguine Bairro 3	Water	Repair of dike	Rehabilitation of drainage
Munguine Bairro 4	Water	Road	Health post
Munguine Bairro 5	Agricultural tools	Seeds	Water
Maluana Bairro 1	Chicken breeding	Tractor	Ploughs
Maluana Bairro 2	Chicken breeding	Tools	Seeds
Maluana Bairro 3	Ploughs	Tools	Seeds
Musutho	Water	Seeds	Small animal breeding
Xerindza	Health post	School	Water
Pateque	Agricultural tools	Seeds	Water
<i>Association/Co-operatives:</i>			
Association Pembe	Agricultural tools	Seeds	Rehabilitation of drainage
Association Tchuri	Agricultural tools	Seeds	Rehabilitation of drainage
Association Pateque Block 1	Agricultural tools	Seeds	Water
Association Pateque Block 2	Agricultural tools	Seeds	Rehabilitation of drainage
Co-operative Pateque	Fertilizers	Seeds	Construction of a dike

(9) Analysis of the major problems and proposed solutions

The problems related to cultivation and agricultural production have entered a critical phase due to natural disasters such as the recent floods. Many agricultural tools that are habitually left in the fields at the end of the day were all lost in the floods. Most of the agricultural infrastructure already deteriorating was severely affected by the floods. Most people are interested in donations of seeds and tools and food-for-work to rehabilitate the infrastructure.

There have never been any secondary schools in the area; their construction would be part of social development of the area. Health facilities are few and far for many people, and the shortage of their staffing and medical supplies are big problems as much as the lack of physical facilities. Water supplies are scarce as a result of the high cost of investments, the lack of access to some densely populated areas and the lack of available clean water close to the surface in the majority of the study area. Social infrastructure can only be built with external assistance in the opinion of the communities.

Income generating activities were mentioned as solutions to the problem of lack of disposable income as well as food. However, a strong component of the external assistance is foreseen to initiate these.

The PRA did not deal directly with specific solutions to the above-mentioned problems. This was mainly due to lack of capacity of the facilitators to conceptualize the process of solutions, and their capability of analyzing the requirements for a viable project.

A.2.1.3 Problems Encountered During PRA

A significant negative influence on the PRA was brought about by its timing, occurring immediately after the flood with the resulting humanitarian assistance programs throughout the area. As a result, the

Study was not seen as a developmental activity, clearly separated from the emergency activity. It probably had a significant influence on the type of responses received.

The area has been subject to so many natural and political disasters over the past 20 years, so the local people have become accustomed to wait for the next humanitarian assistance program to provide them with basic needs and other assistance. Their expectations from the Study are framed by this experience, people's attitudes of dependence and certain mistrust on the government which was borne of the unrealized promises by the government in the past about the assistance to the area.

A.2.1.4 Lessons for Participatory Development in the Study Area

- Because of the ingrained attitudes of dependence in local population which affect negatively genuine participatory community development, the time is necessary to gain the confidence of the people and change their attitudes. So the pilot activities should be carried out in a small scale with a small number of the enterprising community members who are willing to work for village development and are trusted and respected by the local population.
- The lack of literacy and ability of the local facilitators to analyze situations objectively is a risk when using local people to carry out and potentially lead their own development programs. In addition, these facilitators were unable to develop the flexible and creative solutions based on their own resources, and this obviously restricted the depth of understanding obtainable about the area, its people and their potentials at this stage. It would probably have been more effective to have employed external teams of more experienced people in this first stage, and at a later stage, focused on training local facilitators as part of the local capacity development approach.
- Assumptions about the organizational capacity and experience of people involved in associations and co-operatives has probably been too high to date. One typical such assumption (from government and non-governmental organizations) is that because of the high natural potential of the area, as soon as physical infrastructure problems are resolved, the people will immediately be able to take the most effective route to increasing production in the area and thereby benefit their socio-economic well being. So when designing pilot action plans, they should be a few in number, in a small scale to be managed easily by local population, and directly respond to local people's priority needs in the study area.

A.2.2 Village Organizations Self-Diagnosis Workshop

A.2.2.1 Background and Objectives

Munguine Locality has 20 associations and co-operatives under the wing of a local Zonal Union. The members are local smallholder farmers, families of demobilized soldiers and former laborers of South African Mines. These associations and co-operatives have faced difficulties of adjusting their vision, structures and plans to meet the needs of the membership. This is simply deep-rooted in the history of the country. The associations and co-operatives have never been expected as autonomous agencies with an independent vision and mission, a set of values, goals and strategic objectives to meet their needs. These difficulties are also caused by the people's dependence on the external resources.

Each and every association has a leadership of 7 members: President, Vice-President, Treasurer, Secretary and 3 ex-officio members. They are supposed to be elected every three years, but in many cases they keep the seat for life and their power and influence suffocates the whole membership's aspirations. It is also worth to say that the income from their collective plots is far lower than the income from individual plots

Therefore, it is quite important to encourage the institutional capacity building (vision, mission, strategies, norms, and values) and management development related to leadership and management. A participative organization diagnosis with representatives of 17 associations and co-operatives has been arranged at the study area.

A.2.2.2 Methodology

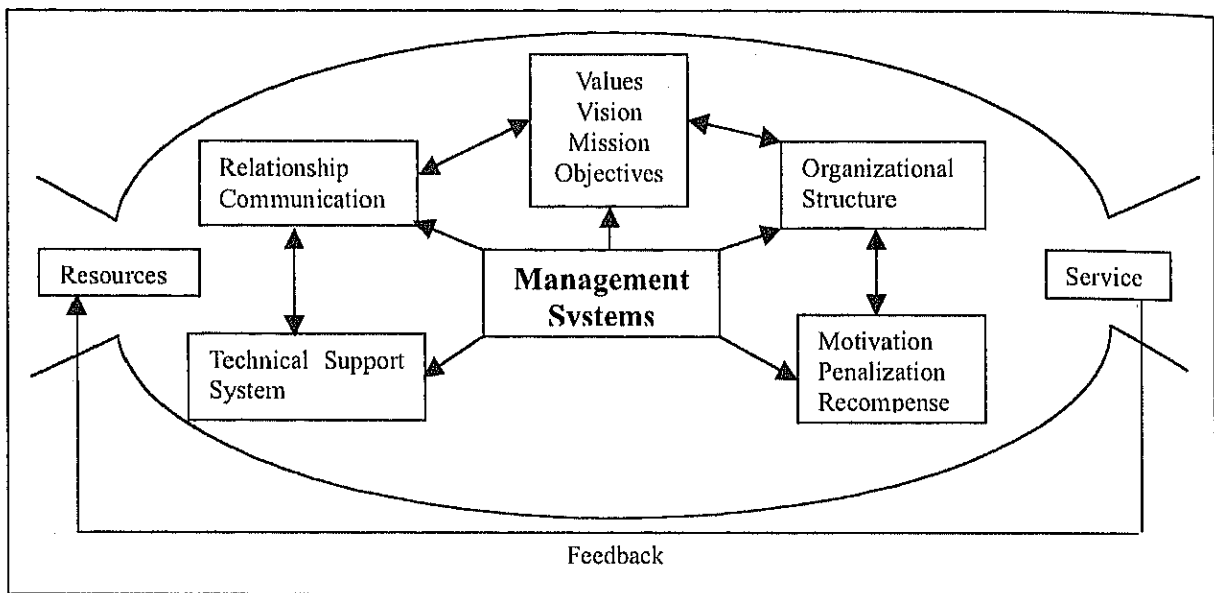
There are two phases of organizational development self-diagnosis, namely three days workshop and two days workshop. It is expected that the diagnosis applying interactive processes of group dynamics is facilitated.

(1) Phase I (Three-Day Workshop)

Day One

- To facilitate organizational development within the frame of Weisbord's Organization Diagnosis Diagram with its six-boxes' model (see Figure A.2.2.1)
- To reveal the organizational culture, and the life cycle tool to assess their growth stage in cycle

Figure A.2.2.1 Weisbord's Organization Diagnosis Diagram



Day Two

- To understand the difference between wants and solutions by discussing the problem tree and solution tree (See Figure A.2.2.2, Figure A.2.2.3 and Table A.2.2.1 in the end of this chapter.)
- To judge the importance, opportunity, relevance and feasibility of activities presented by participants
- To understand the utility of resources needed based on local material and 'traditional know-how' to solve their problems
- To identify the key causes of their problems and the attitude to overcome resistance, traditional myths and 'taboos'

Day Three

- To invite participants to take note for further discussion with other members, who couldn't join the workshop, in leading learning organizations through a changing process

(2) Phase II (Two-Day Workshop)

Day One

- To encourage the participants to understand the necessary of vision, goal, results-oriented strategy, and validated norms again
- To understand organizational structure and these roles above

Day Two

- To find leadership as an engine of organization and members' ownership

A.2.2.3 Findings through the Workshops

(1) Vision, Mission, Values, and Norms

It is generally understood that the associations and co-operatives have no shared vision of their own in relation to what they want to achieve as a group and how? Since the only or the major goal for the members is to get external resources and share in the community, planning production, strategic crops, markets and on-job training to sharp skills and attitudes becomes a non-goal.

They don't have agreed norms and values to guide their behaviour and relationship. In many cases some influential members gain control over the association's property and use it without transparency and without being held accountable. Members are seen by their leaders as beneficiaries. They are no longer the owner of the co-operative or association. They have no ground to make decisions or demand clarity and transparency of procedures to their leadership. In many cases, co-operatives and associations have no project or plans of activities. They rely on external resources and design projects on their behalf. The yearly objectives and goals are not clear and in many cases they are not discussed.

(2) Structures

There is lack of a dynamic process of power sharing and alternate leadership. Once elected leaders make every effort to remain on power for life and bring close to them all friends, associates and family members. Elections were supposed to be held every three years and no leader could be allowed to serve more than two terms. However, there is no clear distinction between the Board of Trustees, the Management Committee and the Control and Auditing Committee.

There are no regular and scheduled meetings of General Assembly and the several committees to discuss the business of the group and ask to see the indicators of progress and performance. The books and financial records are not well kept and the handling of finances and property is in the hands of only a few that can read, and tell whatever they want to the illiterates.

(3) Motivation: Reward and Penalties

In general there are no agreed code of conduct or code of ethics. Leaders do what pleases them and members loose motivation. There is no praise and recognition for those who excel and there is no punishment for those who do wrong.

It is common to see leaders failing to be accountable or misusing group's property and to see member failing to perform their duties and obligations to the group without punishment. A set of values and enforced code of ethics need to be put in place for co-operatives and associations to develop and meet the needs and aspirations of the membership.

(4) Technical Support

Almost all the co-operatives and associations need to build a shelter to be home or headquarter. They need access roads to break isolation from outside world. All of these needs can be realized locally by people through utilizing available resources.

Secondly, they need tools for work. In this case main tools are cattle for agricultural purpose. If they possess cattle they can plough more land and generate more income. Cattle need appropriate implements such as plough and harrow.

Thirdly, they need know-how transfer in terms of extension services and expert advise to help them with strategic crop selection, market targeting, quality control and packaging, storage and transport. For making their operation smooth, the groups need to be taught basic bookkeeping, financial control and reporting.

(5) Relationship

It is necessary to improve the communication within the village organizations. Members and leaders need to be equal as partners in decision making process. Communication with other groups is also important. Communication with government departments is weak, and communication (feedback) with donors is very weak.

Reports should be produced after meetings and on quarterly basis in both Portuguese and local language to make group's activities widely known to the stakeholders. The statute law of co-operative and association should be translated into local languages to make its content known to the members and each member should be entitled to one copy for his/hers guide. This will help members to know their duties and rights.

(6) Management

Management member should be elected and renewed on periodical basis. Politics and religion should be avoided inside co-operatives and associations as the country enjoys many political parties and religions that members as individuals are free to join or to stay out. Political and religious leadership should be elected, if so, by individual qualities and personal merit rather than by the status they enjoy in the community. Experience shows that they tend to mix roles and duties from outside the co-operatives into it.

Management should be in the hands of literate people in national languages or Portuguese. This brings a balance into the power sharing process. The group should invite ex-officio auditors, such as local nurses, teachers and other respected members of the community, into the Audit and Control Committee to check the records and books of the co-operative and associations. This practice may protect the interests of the illiterates. Training programmes are needed for leaders, managers and ordinary members as how to run the associations and which role to play positively.

(7) Organizational Culture

It is like an iceberg in the sea. We see in organisation what is visible like: Plots, crops, members, animals, buildings, equipment, etc., but we are unable to see the inner part of it. How power is distributed and shared, how influence works, how fair is managed, the transparency issues, the values and the unwritten rules of the game. Participants were argued to look deeper inside to disclose the root causes of their failure that happens under water.

A.2.2.4 Facilitating Issues

More than 30 participants drawn from 17 associations and co-operatives in Munguine and Pateque, with representatives of the Farmer's Zonal Union, attended the seminar.

The covered topics were:

1) How to build own's vision

(the individual needs, the family needs and means of fulfilling them involving the whole family [elders, women and children (male and female)]).

2) How to build group vision

(common interest, common problems, common approach, common ground, common rules, norms and objectives, maximum use of local and traditional expertise and resources. Involving the association's member families).

3) How to network

(self-help and mutual help, forming clubs for individuals with situation alike to support each other, creating savings clubs and solidarity bank accounts, labor clubs and social solidarity clubs. Creating capital investment clubs to acquire assets, such as cattle, houses, ploughs, and home furniture and households).

4) How to develop from peasant to farmer

(Planning property development through crops and livestock development: The interdependency of crops and livestock to feed one another; the value of trees and fruit trees as retirement income and property defenders, the value of livestock as family bank account for both savings and order accounts with small and large animals playing different roles.

5) How to appreciate the potential of the resources that they possess already

It was "discovered" by the trainees that for example:

- A well-fed hen could provide them with 48 chicks a year that sold could earn them 1,680,000 MT. A duck approximately 1,500,000 MT a year,
- A rabbit approximately 2,000,000 MT a year the same as she sheep!
- A pig could provide them 16 piglets that would earn 5,600,000 MT a year.

- A she/goat only 700,000 MT a year.

All this at no extra cost than labor, as the feeding would come from the farming sub-products after harvest.

- 6) The importance of defining regional strategic crops along with subsistence crops to attract markets
(The importance of producers groups within a region or association to protect prices and create a solid and sustainable market)
- 7) The importance of democratic governance in associations.
(Leaders democratically elected, participatory decision making in management, in line even with the culture and tradition of the land. The importance of accountable management for both funds and assets and the need to keep simple and clear-to-understand records of the assets and financial transactions of the association)
- 8) The importance of producing and circulating information to members and partners on regular schedule
 - The importance of evaluating the job on regular intervals, holding planning sessions and general assemblies to update members on progress of the activities.
 - The need to keep report in both Portuguese (official) and the local language to reach more members
(Many read and write in their own language, due to church literacy programs to enable them to read the Bible)
- 9) Above all, the importance of electing the right people for the right job at the right time.

A.2.2.5 Conclusions and Recommendations

- Co-operatives and associations are feasible organisations to work with but they are at a stage that needs training and monitoring for them to succeed.
- Almost all co-operatives and associations need to define a vision, a mission, their set of values and norms and sound development strategy before heavy investment is done.
- There a risk of many donors with different policies and development approaches fighting for the same groups. They may create more problems than solutions if dialogue between them, partners and stakeholders, is avoided.
- The soil is fertile and people willing to work. There is a great potential for pilot projects if the diagnosed problems are dealt with on time.

Figure A.2.2.2 Tree of Problems - Munguine Associations

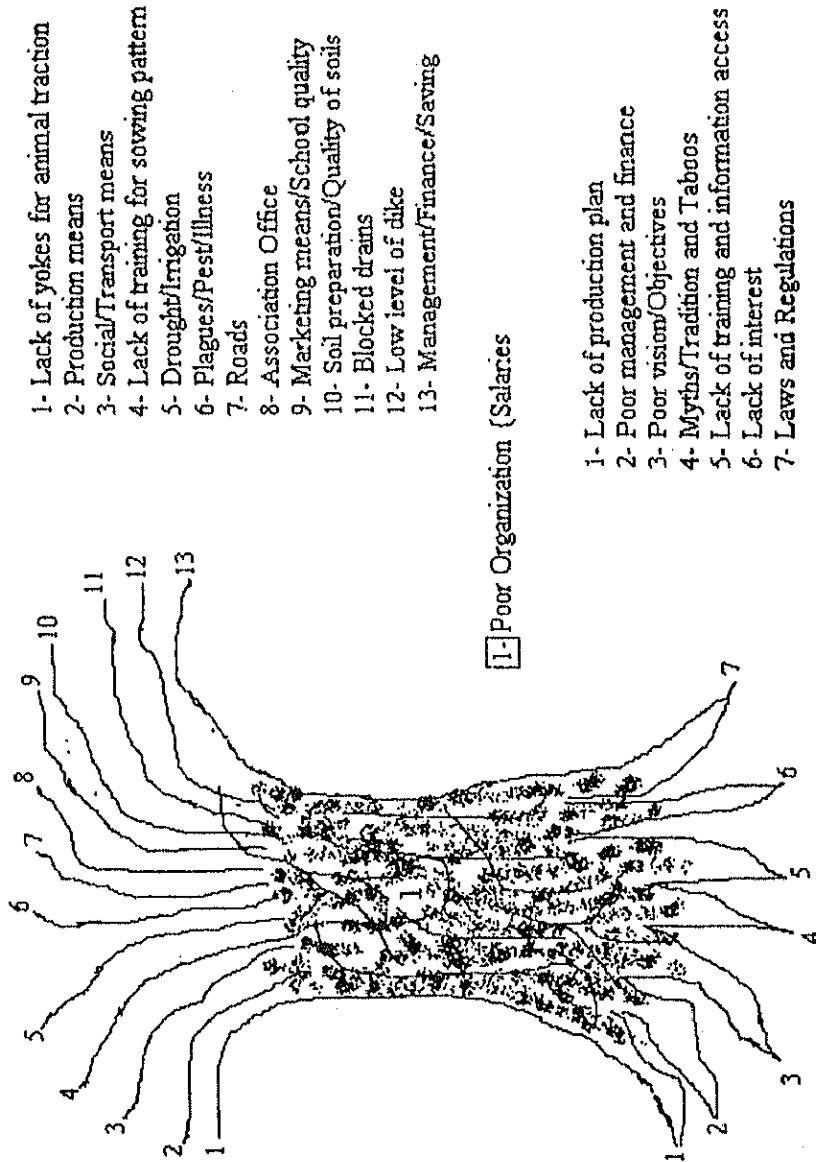


Figure A.2.2.3 Tree of Solutions - Munguine Associations

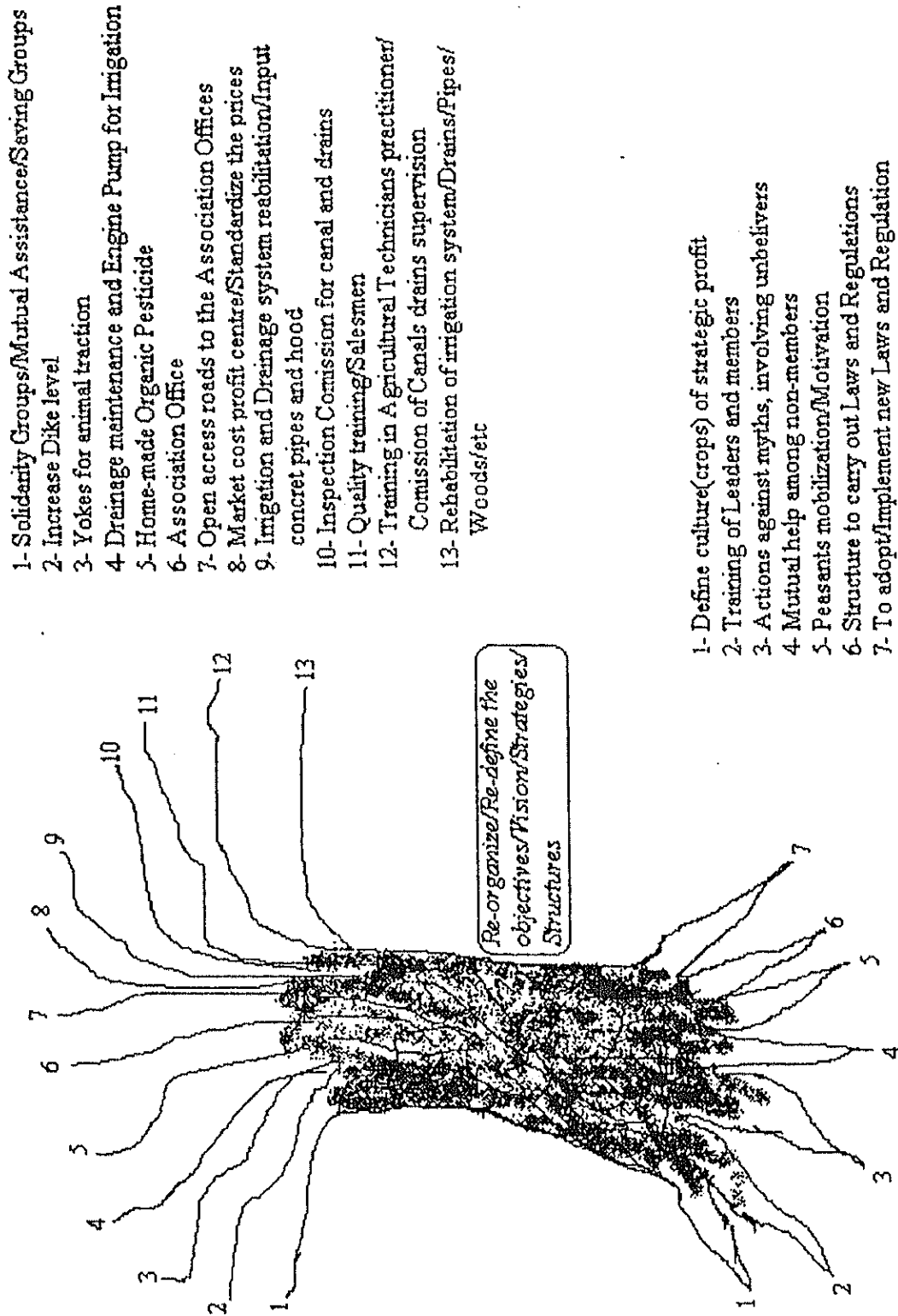


Table A.2.2.1 Problems and Solutions Tree

	PROBLEM TREE	SOLUTIONS TREE
Branches	<ul style="list-style-type: none"> ● Poor agricultural techniques ● Drought ● Pests and plant disease ● Co-operative headquarters ● Lack of access roads ● Lack of oxen and implements ● Poor irrigation and drainage system ● Poor soils due to overcropping ● Poor management ● Lack of marketing skills ● Defective Protection dicks 	<ul style="list-style-type: none"> ● More training and extension on agricultural techniques ● Setting self-help groups ● Regular maintenance of water pumps, dicks irrigation and drainage system by users ● Co-operative headquarter to sell farmers production at agreed prices and product quality ● Co-operatives to build centres or headquarters along with access roads to break isolation ● Increase height of flood protection dick to prevent future floods. ● Member to form saving clubs based on mutual trust ● Use of organic pesticides
Trunk	<ul style="list-style-type: none"> ● Poor organisational skills and ineffective management 	<ul style="list-style-type: none"> ● Re-organisation of co-operatives and associations structures. ● Re-definition of vision, mission, values and objectives.
Roots	<ul style="list-style-type: none"> ● Lack of production plans ● Poor management skills ● Lack of vision, mission, shared values and clear objectives ● Traditional taboos and practices causing resistance to change ● Lack of interest ● Lack of information and training 	<ul style="list-style-type: none"> ● Define strategic crops for market in the zone ● Create norms and by-laws agreed by member and to be enforced by all. ● Motivate and encourage farmers outside the groups ● Support to non- members ● Training to members, leaders an managers. ● Fight resistance due to traditional believes and taboos

Table A.2.2.2 SWOT Analysis

<p>Strength</p> <ul style="list-style-type: none"> ● Individual property (plots) ● Rehabilitation of the drainage and irrigation system ● Association with some degree of organisation ● Will to work and progress ● Common plot in association to create a reserve fund 	<p>Opportunities</p> <ul style="list-style-type: none"> ● Fertile soil ● Water resource from Incomati river ● Donors and friends willing to help ● Grazing land ● Potential for crops and fruit trees for food and cash generation ● School for children ● Trainers and extensionists to assist in crop production and livestock
<p>Weaknesses</p> <ul style="list-style-type: none"> ● Poor organisational skills ● Poor vision and objectives setting ● Lack of knowledge of membership and leadership roles and responsibilities ● Lack of enforced norms and bylaws 	<p>Treats</p> <ul style="list-style-type: none"> ● Gossiping ● Lack of interest ● Lack of transparency and accountability ● Fear of powerful members and leaders ● Treating leaders ● Strong traditional believes creating resistance to change

A.2.3 Survey of Water Users' Groups

A.2.3.1 Introduction

At the end of 2000, the JICA Study team in co-ordination with the Ministry of Labour carried out a water source inventory in Munguine and Maluana Localities. It was found that the main water source for drinking purposes in the Study Area is groundwater abstracted in the high land. In general, the groundwater in this area is clean and chemically potable. The inventory identified 21 functional boreholes all equipped with hand pumps and 10 hand dug wells serving the community. It was noted that there was a general lack of attention to conservation, maintenance and hygiene practised at the water points in the Study Area resulting from a lack of sense of ownership on the part of the communities.

As part of the Study, short-term interventions responding to community priorities will be supported as pilot projects. These will assist in resolving some of the problems identified in participatory exercises carried out in 2000, and serve as material for evaluation and recommendations concerning the forthcoming development of the area. A survey of water users groups in the project area was carried out to identify and discuss the problems related with operation, maintenance and management of existing water points, and this was followed through with a process to identify potential pilot projects that would improve the situation. Small-scale activities were identified that gave priority to building the organisational capacity community users groups to ensure the sustainability of their water supplies.

A.2.3.2 Objectives

Identification of short-term interventions that should address two key issues raised though the inventory study: (1) the lack of involvement of user communities and (2) the need to improve the quality of water used by the communities.

- 1) National norms require that the OMG should be organised for all water points. At each of constructed water source an Operation and Maintenance Group (OMG) had been formed to take care of it. However, at the time of the inventory these were not functional.
- 2) All water points should be equipped with an apron and drain for protection against intrusion by contaminated water. In addition to the improvement of works, users' awareness regarding water quality should be raised through hygiene education and training. Chemically the quality of the groundwater in the Study Area is reasonable, while the quality of water in individual boreholes and shallow wells appears to be variable. Due to the lack of headworks (aprons and drains) on hand-dug wells, the risk of cross-contamination from water seepage is high.

A.2.3.3 Methodology

A water users' survey was carried out over a period of two weeks, through two rounds of meetings with representatives of water-users groups and local leaders involved in water supply management from Maluana centre, Pateque, Xirindza and Munguine. The objective of the first round of meetings was to identify and discuss problems related with Operation, Maintenance and Management (OMM) of water points.

In the first round, the consultant explained to representatives of the water users groups, the survey's purpose and that after identifying principle problems, small projects would be identified by them to develop as pilot activities. In this phase, it was clearly explained to the community that only small projects related to existing water supplies should constitute their applications for support from JICA. The participants were informed of the necessary steps to be taken to apply for assistance from the JICA Study and that the following criteria should be borne in mind when considering appropriate projects:

- To have a water user group established to carry out Operation, Management and Maintenance (OMM) activities,
- To provide a financial contribution for the OMM of the rehabilitated water points,
- To provide a labour contribution during the construction/rehabilitation phase.

Participants were asked to return to their communities to inform them about the intentions of the Study, and discuss, seeking consensus, and the potential activities/projects/actions that may be taken to improve their water supply and sanitation situation.

After the meetings held among community groups, community representatives returned for a second round of meetings. They presented proposals for projects they hoped to carry out, identified resources they agreed to contribute, and resources they require to complete the project, and finally their preferred implementation modalities. In this second phase the consultant team visited the proposed community water points for preliminary evaluation of feasibility and determination of the possible kind of intervention. A field assessment permitted an assessment of ideas proposed in terms of:

- Being realistic
- Level and type of community involvement
- Sustainability potential
- Potential cost
- Type of intervention

A.2.3.4 Organization for Implementation

Through community meetings to which representatives of water-user groups from the surrounding protected community water points were invited, problems with operation, maintenance and

conservation of the water points were raised and discussed. It was intended to carry out two rounds of meetings with the same communities:

The first round aimed to identify problems, prioritise them and identify potential ways of resolving them. Participants in the meeting were encouraged to identify the steps needed to improve their situations, they were helped to identify their own local resources for assisting with this, and resources they might need from outside. They returned to their own communities after the meeting with the objectives of sharing the ideas discussed at the main meeting, and seeking consensus on what potential activities / projects / actions could be taken to improve their water supply and sanitation situation.

The second follow-up round consisted of a set of meetings to discuss consensus reached back in the user communities about their participation in resolving their water related problems. Community representatives identified the activity they aimed to carry out, resources they agreed to contribute, resources they required to complete the activity, and defined a time frame for completing this.

The four awareness-raising community meetings were carried out in the areas of more concentrated location of water points – Maluana Centre, Pateque, Xirindza and Munguine. Feedback and project identification meetings took place in the same locations.

After each round of meetings there were opportunities to follow-up cases where interventions were being proposed. Thus after the meetings, visits were made to water points of interest.

The range of proposals and content presented in the second round of meetings constituted the raw material presented for proposal evaluation. After all meetings had been held, the proposals were evaluated to see how best they met the following requirements of being realistic, potentially sustainable, of a reasonable cost and being a type of project with a high level of community involvement, particularly in capacity development activities.

Locality leaders informed the representatives of the water user groups with the proposals that met the requirements and a meeting was held with these representatives to inform them of the next steps that should be taken on their part and on the part of the JICA project.

A.2.3.5 Summary of Survey Results

All communities agreed that the objective for improving their situation in regard to water supply was to guarantee the supply of protected water in sufficient quantity to the population. They wanted to reduce the distance to water for families. Less important to them was the reduction of risk of drinking contaminated water and the incidence of water related diseases. They argued that more operational water points could create the conditions in which time is reduced for water collection freeing people to carry out other activities that could generate income or be of general interest to the community. The database providing the technical details of the selected eight water points is given in Table A.2.3.1.

(1) Maluana centre

a) Present situation

In Maluana centre water users groups from three Bairros participated in the meeting (Bairros 1, 2 and 3). The participants identified their major problem as being an insufficient number of water sources, and the bad location of existing ones close to one another in the centre of Maluana. They cited problems for the majority of the people who live far away of the centre, particularly people from Bairros 2 and 3. It was also learned from the District Director of Public Works and Housing that the DNA Emergency Commission through the Provincial Directorate of Public Works and Housing is currently drilling three new boreholes in Maluana in these periphery areas.

Participants in the meeting identified only one functioning borehole in Bairro 1. This is located close to the primary school and, according to them, this borehole "belongs" to the school and not to the community. The second functioning borehole is far away from the Bairro centre and it was constructed to serve the military camp during the civil war.

In Bairro 1 two non-functioning community water sources were identified by the group: one borehole and one hand-dug well. The borehole was inspected, water pumped, and then the Afridev hand pump was dismantled and the pump rods removed. It was discovered that the piston was very severely worn on one side indicating it was rubbing against an obstruction during pumping. Upon reinstallation no water was produced at all. It was concluded that the rising main may be badly glued, bent or badly joined. Further investigation with the contractor that rehabilitated the borehole revealed that it had been developed and cleaned, and therefore should produce sufficient water. It was concluded that the pump should be dismantled, the tubes removed and verified, the static water level (SWL) verified and the immersion depth of the cylinder verified. A new piston, possibly cylinder and rising main tubes may be required before reinstallation.

The hand-dug well shown to the consultants was very deep and dry. The lining rings are badly displaced and cannot be rehabilitated.

The Bairro has a Water Commission composed of three men and two women, which was trained to carry out OMM activities. The community used to contribute 5.000,00 MT per month per family for OMM before the hand pump broke down. They use to buy the spare parts in Manhiça at a shop called Jassub Comercial. Upon visiting the shop it was noted that there were no stocks of most of the parts that are frequently required for routine maintenance. In addition, the factory prices today are around seven times higher than the retail price of some of these parts in Manhiça. They had evidently been provided free by the government many years ago, and never replenished to date. This is a crucial issue in relation to affordability and the issue of the government and private sector commitment to facilitating sustainable community maintenance and management of water points.

b) Community requests

It was notable that all the Bairros requested new boreholes. They were willing to contribute to cover 100% of the OMM costs, as well as an up-front contribution of 500,000.00 MT. Some have already started collecting this money in the expectation that the government will respond to their preparedness.

Following repeated affirmations that JICA would only support small-scale activities with existing water points, the communities of Bairros 1 and 2 proposed two activities. One consisting of the rehabilitation of the broken down Afridev pump in Bairro 1 and the other being the training of the OMM group of Bairro 2. Bairro 3 did not submit any proposal, they only wanted new water points.

(2) Pateque

a) Present situation

The community identified three functioning boreholes in the area, one belonging to the primary school, one belonging to the Catholic Church and other belonging to a private owner. They claimed that the community only has access to three unprotected hand-dug open wells that are not in good condition. They have no organised water users' groups. They had heard about the need for contribution towards OMM and are willing to do so if any improvement is made to the existing community wells. They stated they would be very interested in new community boreholes.

Technical inspection of the wells revealed that all are heavily used, though the one closer to the EN1 (Thobué) and the well capturing water from a spring near the mosque are probably used the most. The well by the road at Thobué presents the best conditions for rehabilitation having well aligned rings, a wall constructed by the community itself though degraded now, a fair amount of water inside and apparently highly valued by the community in the area.

The narrow diameter rings (0.80 metre inside diameter) installed on the spring source near the mosque in Pateque (Mesquita) are on marshy ground with a small stream passing less than one metre away. Rehabilitation may require raising the terrain with stones before constructing an apron and drain. The well is frequently used, and was affected by the floods of 2000. It features on the list of wells to be rehabilitated by the DNA/Emergency Commission in the context of emergency actions after the floods of 2000, and would probably be best left to this programme to rehabilitate.

The last well in the residential area of Pateque (Honwana) is located in a depression excavated by the population to ensure that they have access to water using the least number of lining rings possible. The depression is approximately two metres deep and ten metres wide, made wide to reduce the inflow of sand during the rain. This depression would have to be filled, and after cleaning the well, it should be lined with more rings so that it has a depth of at least 3 to 4 metres from the surface to guarantee the water is safe from surface infiltration.

All wells suffer from sand intrusion and would have to be cleaned and decontaminated. If hand pumps are to be installed on any of these, yield tests using a de-watering pump would be required before the decision to install the pump is taken, to guarantee that there is enough water. The risk of water points lowering their SWL during the dry season will be difficult to assess at this stage, and therefore should be mitigated against at all times.

b) Community requests

After discussion, the community reached consensus and is willing to participate in the improvement of the three community hand-dug wells. They will contribute, financially, to cover the OMM costs; they will provide labour during rehabilitation; they will constitute the Water Commission to carry out OMM activities and organise all community participation. They requested external assistance for training of the Water Commission and local artisans to carry out OMM activities. Rehabilitation will require construction material, equipment and specialist contractors to rehabilitate the three wells.

(3) Xirindza

a) Present situation

The community identified three functioning boreholes one belonging to the primary school, and two belonging to the community. According to them, this number of boreholes is not enough. As their top priority they would like to have more boreholes because the area is so big and they were not consulted during the previous interventions with the consequence that the boreholes were badly located. There are also three unprotected hand-dug wells that are not in good condition. The community representatives focused on their need for new water points, so that identification of alternative activities did not generate very much enthusiasm.

A well (later identified to be the sole project proposed) in Xirindza, was visited to make a technical assessment. It is located near the National Highway No. 1, and is a deep hand dug well, lined with some 13 rings. It is difficult to assess the condition of the base of the well without entering into it. It has water and is being used. It appears to be suitable for rehabilitation, given that its location is appropriate, and the rings are in good condition. It will require the rebuilding of a wall around the lip of the well, since the existing lip is low and worn. If a hand pump is to be installed on this well, cleaning and a yield test will be necessary to guarantee that water production is sufficient.

b) Community requests

After discussion, the community reached consensus and is willing to participate in the improvement of one community hand-dug well. They will contribute, financially, to cover the OMM costs; they will provide labour during the rehabilitation; they will constitute the Water Commission to carry out OMM activities and organise the community participation. They requested external assistance to train a Water Commission and local artisans to take carry out the rehabilitation and future OMM activities. They need construction material, equipment and specialised contractors to rehabilitate their well.

(4) Munguine

a) Present Situation

The area has two operational hand pumps and two inoperational ones. One of the inoperational pumps is at the primary school on a new borehole drilled in 2000, and the other is a dismantled pump that had been installed on a borehole said to be silted up. There is a capped borehole in the area that has never had a pump installed on it, lying within a kilometre of these two pumps, and an old deep ring-lined community well approximately 500m from the health unit borehole, that is no longer in use due to caving and undercutting at the bottom of the rings as a result of years of use. The people of this area are principally interested in new boreholes with hand pumps. However, since their pumps are broken down and the well that served as the community's principle water source in the past is now degraded, they are interested in support to improve the condition of their existing water sources.

Visits to verify the status of each water point revealed that the water point at the school is currently the responsibility of the school. As such the existing trained Water Commission has never had any responsibility for it. The rising main pipes removed from the borehole have been stored on the roof of a house for several months. As a result some of them are badly curved, sufficient to impede the efficient operation of the pump. The rising main had been removed after the cylinder became unstuck and the tubes separated soon after installation. This was probably due to putting a load of water in the pipe before the glue had dried at installation, or another error caused during installation. The pump has never worked since its installation. The Provincial Rural Water Station (EPAR) removed the pipes and has not yet returned to re-install them. This activity is still the responsibility of the EPAR. The community may easily be trained in the removal and replacement of pipes so that they may carry out these activities themselves. It is probable that new pipes and unions will have to be purchased to conclude installation of the pipes at this site.

The silted up borehole no more than 500 metres from the health unit would require cleaning using a large compressor and testing its yield to assess its potential in the future. The hand pump has had its rising main pipes removed, and they are correctly stored inside the home of a caretaker living near the pump. These tubes are in good condition.

The final borehole visited, was said to have been drilled in the past decade, and the white PVC borehole lining is visible about half a metre above the ground surface. It is correctly capped with a lid glued in place. The community recalled that the drilling company fled and never returned to the site. Further investigations have revealed that the borehole is not registered in the DNA database of boreholes, and it is likely that it was drilled by a South African drilling company that carried out a contract to supply water for the Refugee Assistance Programme in the 1994/5 period. A drilling company named Osmo was identified as perhaps being responsible. This company was not authorised to operate in Mozambique and was sent out of the country after its discovery. This may explain why there is no registration of data. This borehole appears to be in good condition. It will require removal of the cap, a pump test to discover its yield and verify that installation of a hand pump is viable.

The old hand dug well is very deep at approximately 13 or 14 metres, and it has a relatively small diameter at 0.80m. This will provide difficult conditions for working in down the hole. The Water Commission of Munguine however assured the consultants that they had a volunteer who would only require training in masonry. This person was willing to go down and carry out the repairs necessary. Rehabilitation of this well would require a detailed assessment of the amount of undercutting below the last ring. This would allow an estimation to be made as to whether a smaller diameter ring could be inserted, backfilled and the well excavated further to guarantee more water. The community repeatedly claimed that the well never dried and used to serve the whole community.

All the water points in this area are located within one kilometre from one another. As such, it will not be necessary to rehabilitate all of them.

b) Community requests

After the discussion, the community reached consensus and is willing to participate in the rehabilitation of three community water sources: one hand-dug well and two boreholes (the borehole at the school and the capped hole). They will contribute, financially, to cover the OMM costs; they will provide labour during the rehabilitation; the Water Commission has already been formed and trained and is ready to carry out OMM activities and organise community participation.

A.2.3.6 Feedback from the Study Team

A meeting of the JICA Study team to discuss the relative merits of each proposal was held on the 2nd of March. Key factors discussed were the inclusion of proposed projects in other agencies' intervention plans, community attitude and preparedness to participate in the projects, the logistical capacity of the Study to support community organisation and training at the various sites and the technical viability of interventions.

At the first level, two sites were deemed not eligible: the well near the mosque in Pateque due to its rehabilitation being part of the DNA/Emergency Commission plan, and the re-installation of the rising main at the school in Munguine because of the EPAR's continued obligation to finish its task. In terms of community willingness to participate, doubts concerning commitments to improving the well in Xirindza were discussed due to the community's fixed hope for new boreholes, and its isolated location near the National Highway. Finally it was recognised that if two boreholes were to be rehabilitated in Munguine, given that they were located within one kilometre of each other, the difficult rehabilitation of the deep hand-dug well would not detract from the aims of improving the quality of water and community organisation to support this in the area.

Thus, in recognition of a high degree of willingness by the communities to participate with funds and labour, the logistical capacity of the Study to support community training and organisation, and the impact of community capacity building, the projects selected for support at this stage were:

- The hand-dug well in Thobué, Pateque;

- The hand-dug well in Honwana, Pateque;
- Capacity building of the Water Commission in Maluana using investigation of the problem of the broken down borehole as the means to carry out hands-on training; and
- The rehabilitation of the abandoned borehole in Munguine as the means of building capacity of the Water Commission managing all the pumps in that area.

Implementation planning – community decision-making

During the process of verification and subsequent mobilisation of the target communities identified above, it became evident that there was a certain lack of agreement among the communities in the Thobué and Hungwana areas of Pateque.

The community selected for the project in the Thobué area was passive towards any participation in a rehabilitation project, while members of a community from outside the project area, on the western side of the road repeatedly appeared at meetings called by the animator in Thobué. This latter community expressed its interest in project support for the construction of a borehole on the western side of the road. Many confused messages were being received in this location. These included:

- 1) the community leaders stressing that Thobué should be rehabilitated,
- 2) the water point users showing no interest and avoiding all meetings,
- 3) a third party from outside of the project currently collecting water near Thobué that wanted a borehole to be located outside of the project area.

Doubts about whether to include the rehabilitation of the well in Thobué in the rehabilitation programme encouraged the JICA team to review the situation and the project approach in relation to community project identification and mobilisation. In addition, following a rapid response by the project to the two borehole rehabilitation requests, it was confirmed that none could be rehabilitated. All results of pump tests and development were negative. As a result it was decided to review the project selection process in order to make it more sensitive to local community dynamics, and understanding of local community conflicts.

Review of the approach resulted in:

- 1) clarification of criteria for ranking communities and development of a format through which the animator could carry out a process of self-evaluation together with communities;
- 2) the decision that the animator should stay in the communities themselves so as to gain their trust and understand more clearly the complex decision-making processes at local level; and
- 3) the design of an approach whereby due to the limited availability of funds, priorities could be established between communities and a process would be facilitated for them to select at a final decision-making meeting, which community water supply projects should be funded.

The objective of this changed approach was to measure the commitment of communities to their proposed projects and raise awareness among these participants of the importance of the two criteria of need and sustainability. The aim was to provide a basis for selection among them of projects that would be sustainable.

Once the revised process was initiated, the animator spent time in all communities where through a participatory evaluation process she facilitated the identification of priority projects:

- obtaining proof that they had funds collected to initiate the physical works,
- that there was a real need expressed by all members of the location, and
- that they were willing to participate in rehabilitation, operation and maintenance of the new water points in the future.

In Maluana two projects were identified for Bairro 1, a new hand-dug well near the western edge of the Bairro, and a new borehole in the middle of the Bairro. In Munguine one new borehole site was identified. In Pateque, the community of Hungwana decided that they preferred to carry out rehabilitation of their well themselves while the community in Thobué continued to not appear to any meetings. The community of Xirindza which had not been considered in the first round of project selection prioritised a site on the western side of the main EN1 highway, where the community there had major difficulties in gaining access to safe potable water.

All evaluations and proposals were completed and the final meeting with representatives from the three locations (Munguine, Maluana and Xirindza) was held during the second week in August. At this meeting the community representatives expressed their unhappiness with the low budget of the Rural Water Supply Program, as well as the geographical limitation of the Study Area which excludes Xirindza community's proposed site despite its obvious merits. After much discussion, it was also understood that the cost of a deep hand-dug well constructed with concrete rings in the location identified by the Maluana community would be higher than the cost of a borehole.

After analysis, and contributions from all parties rehabilitation of a borehole with hand pump for Maluana was finally prioritised over all other proposals. The second priority was a borehole with a hand pump for the Munguine community. During the decision-making process, the Munguine community representative had been prepared to offer their opportunity for a new water point, to Xirindza in recognition of the community's greater need.

Table A.2.3.1 Technical Data for Water Points Proposed for Rehabilitation

No.	Location	Latitude S	Longitude E	Type Source	Use of water	Topographic situation	Yr Constr.	Situation of Apron/Drain	Lid Exists ?	Situation Rings	Silted?	Lift water with?	Pump operat?	OMM group? + Comittee?	Depth well (m)
Manhiça District															
<i>Admin. Post Maluana Approved Projects</i>															
1	Pateque / Thobué	25 34	32 40	53 Sh.well	domestic uses	High land	<1975	None	no	reasonable	some	buckets		none	9.30
2	Pateque / Honwana	25 34	32 41	86 Sh.well	domestic uses	Lowland dimes	1980s	None	no	good	some	buckets		none	2.75
3	Maluana Sede B1	25 29	32 39	6 B.hole	domestic uses	High land	1996	Good	n/a	n/a	possibly	Afridev	no	yes	49.00
4	Munguine B 1	25 30	32 43	85 B.hole	never	High land	1994/5	None	n/a	n/a	unknown	nothing		n/a	n/d

<i>Projects not approved</i>															
N1	Pateque / Mosque	25 34	32 41	76 Sh.well	domestic uses	Flood plain	1980s	None	no	reasonable	some	buckets		none	1.49
N2	Xirindza / EN1	25 26	32 41	72 Sh.well	domestic uses	Valley in High land	<1975	None	no	good	some	buckets		none	18.60
N3	Munguine school	25 30	32 43	1 B.hole	domestic uses	High land	1996	Good	n/a	n/a	no	Afridev	no	yes	50.00
N4	Munguine B 1	25 30	32 43	62 Sh.well	abandoned	High land	1980s	None	no	bottom undercut	yes	nothing		n/a	

No.	Location	Depth water(m)	SWL (m)	Height above soil (m)	Lining above soil	Lining below soil	Inside diameter	External diam	pH	EC (ms)	NO3- mg/L	Observations
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Manhiça District												
<i>Admin. Post Maluana Approved Projects</i>												
1	Pateque / Thobué	3.5	5.80	1.90	concrete	ring	1.20	1.40				
2	Pateque / Honwana	1.05	1.70	0.25	iron sheet	ring	1.00	1.16				
3	Maluana Sede B1	32.50	16.55	n/a	PVC	PVC	4.5"	n/a				Q1.26m3/hr but said to have low yield
4	Munguine B 1	n/d	n/d	n/a	PVC	PVC	4.5"	n/a	n/d	n/d	n/d	Capped sealed tube, never used.

<i>Projects not approved</i>												
N1	Pateque / Mosque	0.74	0.75	1.40	ring	ring	0.80	0.95	7.2	153	0.44	
N2	Xirindza / EN1	10.7	7.9	0.30	ring	ring	1.20	1.40				
N3	Munguine school		15.80	n/a	PVC	PVC	4.5"	n/a		484		Tubes dismounted, Q1.6m3/hr
N4	Munguine B 1			0.00	ring	ring						

Legend:
n/a = not applicable
n/d = no data

A.2.4 Survey of Livestock Production

A.2.4.1 Introduction

Based on the results of the first stage survey conducted in the year 2000, a master plan for development in an area of 96 km² in the localities of Maluama and Munguine, Manhiça District was formulated targeting on the year 2020. This master plan put emphasis on promoting livestock raising for income generation.

A.2.4.2 Objectives

Based on the results of the first stage survey conducted in the year 2000, a master plan for development in an area of 96 km² in the localities of Maluama and Munguine, Manhiça District was formulated targeting on the year 2020. This master plan put emphasis on promoting livestock raising for income generation.

Therefore, the objectives of this survey are to determine the current situation of livestock raising in Munguine and Maluana localities and to collect basic information for implementing a pilot action program aiming at the promotion of livestock production as a way of contributing to the welfare of the target families to make the local resources worth promoting community participation.

A.2.4.3 Methodology

The methodology used in this survey consisted basically on data and information collection through interviews to individual persons, government entities, farmers, community leaders and NGOs. The process of data at field level followed a methodology of Rapid Rural Appraisal.

A.2.4.4 Organization for Implementation

This survey was conducted by Dr. Filomena dos Anjos who worked at the Ministry of Agriculture and Rural Development.

A.2.4.5 Summary of Survey Results

A.2.4.5.1 Number of Livestock

Data on livestock production in the year 2000 in Manhiça District is summarized in Table A.2.4.1 shown below. It must be that the figures on poultry are under estimation as it has been difficult to do the respective inventory.

Table A.2.4.1 Type and Number of Livestock in Manhiça District (2000)

Livestock	Number
Cattle	7,820
Goat	1,436
Sheep	276
Swine	640
Poultry	27,052

Source: SDP 2000

Currently, Munguine and Maluana localities contribute with 50.4 % on the total of swine production in Manhiça district (refer to Table A.2.4.2 shown below), which shows the importance of this species in those localities. Most of goat production in the district also comes from Munguine amounting 31.3 %, followed by Maluana with 10, 4 %. Again, Munguine is leading in terms of sheep production accounting for 27 % followed by Maluana with 16.3 %. From this table, it becomes clear that Munguine has more livestock production compared with Maluana; however, we were not able to determine the exact reason for the difference.

Table A.2.4.2 Number of Livestock in Munguine and Maluana Localities

Livestock	Munguine	%	Maluana	%
Cattle	335	4.3	112	1.4
Goat	450	31.3	150	10.4
Sheep	75	27.1	45	16.3
Swine	285	44.5	38	5.9
Poultry	3,500	23.9	2,500	9.2
Donkey	2	-	-	-
Rabbit	300	-	-	-

Source: Adapted from DDA (2000)

According to District Directorate of Agriculture (DDA) in Manhiça, the average number of livestock pre household ranges from 2 to 9 with a maximum of 84 for cattle and 54 for goats.

A.2.4.5.2 Breeds

Generally, most of cattle have the origin of local breed known as “landins”. According to information given by the District Livestock Service under DDA, there are exotics breeds known as Brahman as well as local breeds.

Poultry at household is composed by small nucleus with dominance of local breed known as “landim” chicken although there could have happened some sort of inter-crossing with improved breeds. The phenotype of the landim breed is variable. Coloration in the feathers varies and some have upright feathers and bear neck.

Experiences gathered from restocking programs seem to indicate that the landins are the best breeds for the family sector as they withstand the production system characterized poor feeding and sanitary management.

A.2.4.5.3 Reproductive Management

(1) Cattle

Herd productivity is directly correlated with the reproduction capacity of existing cattle. Aspects to be taken into account include: type of crossing, number of bulls and age at first crossing as well as the crossing period. Knowledge on this matter can serve as an indicator on how the herd will evolve. According to Pinho Margado (1975), as indicated earlier, the number of bulls is about 3-4 for 100 females. In the case of Munguine, for example, there are 65 bulls for 154 females, which mean that there is an over balance of males in relation to females. These facts should be taken into account in the current and future cattle restocking programs.

The crossing is done naturally and occurs all over the year. There is no artificial insemination system. Our informants indicated that the first crossing occur when the animals are about two years old. After calf is born it is left with the mother for about twelve or eighteen months until the mother gets pregnancy. The calf continues sucking until the seventh month of mother's pregnancy. The interval of birth is about 24-30 months.

(2) Goat

The crossing of goat is similar to that of the cattle; however, the interval of birth is shorter (about ten months according to data reported by Loforte)). Farmers reported that birth occurs annually, however, sometimes only every other year giving raise to one or two offspring. According to Loforte, the average litter size per head is 1.63, being at its highest in the period between the 4th and the 7th births. The average number of offspring per year is about 2.3.

Farmers reported that there is a high level of mortality especially when the birth gives more than one offspring. This information is confirmed by Loforte, who observed a mortality rate of 20.6 % in young animals (from birth up to 30 days age).

Loforte also reported that the reproductive potential is high while the productivity is low due to inadequate management practices and weak technical knowledge as well as veterinary assistance.

(3) Swine

Swine commence their reproduction activities when they are about one year old. The female gives birth twice a year with an average of 6-7 offspring each. Sucking lasts up to four months of age. Some farmers do not have males. Under such situations, they have to hire from the neighbors and payback in kind i.e., with newborn.

Farmers consider swine raising to be a good source of income. At present, the numbers of swine remain low due to the African Swine Fever.

(4) Poultry

Poultry is generally small in size hardly attains more than 1 kg in weight although the cocks can reach as much as up to 2 kg. The average number of eggs laid is about 10-12. The mortality of poultry is high; about 70% of newborn chicks die before reaching six weeks of age. The natural predators aggravate this situation because the chicks are raised in an open space. Eggs are laid in non-protected places and are sensitive to climatic variations especially rainfall which often spoils them.

A.2.4.5.4 Feeding Management

(1) Ruminants

Ruminants including cattle and goat fed in natural pasture all over the year without any supplements. According to farmers, there are enough pastures for a large number of ruminants. The animals are taken to pasture for grazing early in the morning and come back in the afternoon. During the rainy season, there are abundant pastures everywhere while they rely on the lower zones (Inhaca) in the dry season.

(2) Swine

Swine is fed from agricultural products like pumpkin, sweet potato and its leaves, cassava and maize husk, local fruits as masala and grasses.

(3) Poultry

Food and crop residues at household feed poultry, they also eat some insects and young grasses.

A.2.4.5.5 Sanitary Management

(1) Ruminants

There are annual vaccination campaigns with assistance from the Provincial Services for Livestock. However, not all planned vaccinations for the year 2000 were accomplished due to the lack of drugs.

Tick and tick borne diseases and gastro-intestinal parasites are the most common diseases in this region. Control of these diseases is not efficient due to insufficient distribution of veterinarian drugs by the Government as a main distributor of such drugs.

There are 12 deep acaricide tanks in the district, however, only 5 are functioning now. Of these, one is located in Patique benefiting the Munguine Locality. It should be noted that this tank is located 5 km apart from Munguine and it is difficult to procure required drugs for animal bath. At present, ATAP is

assisting farmers in treating their livestock with a spraying system every 15 days within the locality. For disease treatment, the District and ATAP technician assist the locality on a free of charge basis.

(2) Other species

There is no sanitary control for other species. Farmers mentioned the lack of vaccination against NCD in poultry which causes high mortality of chicken. They are also concerned about the high mortality of young ducks. Most farmers also have lost their swine due to African Swine Fever.

A.2.4.5.6 Animal Traction

Animal traction using cattle is mainly for land preparation and transport. The owners of cattle can use them for these needs; however, those who don't own cattle have to hire them charging a rate, which varies from 80,000 MT per hour for the service rendered.

A.2.4.5.7 Marketing and Consumption

Domestic livestock for consumption are mainly chicken, duck, swine and goat. They are prepared in many different ways. Curry or stew normally eaten with rice or maize flour is a typical dish for the majority of Mozambique citizens. They are sometimes roasted in the form of barbecue. Groundnut, cooking oil, onion, tomato and salt are the main ingredients used for their preparation depending on the preference and/or affordability.

Farmers do not have a habit of milking from their cows. They usually buy milk or butter in the shops for their consumption. They seldom eat eggs from their chicken and prefer to keep them for reproduction purposes.

In general, they eat chicken and/or duck meat once a month while other species (goat for example) are slaughtered only in special events and ceremonies. Chicken is a main species for selling especially during the occurrence of New Castle Disease or Christmas holiday. The animals are sold along the roads or at household. When they intend to sell, they pass the information to the neighbors who also convey it to friends and relatives. Price used are roughly shown in Table A.2.4.3 bellow.

Table A.2.4.3 Price of Livestock

Species	Price/Head (1,000 MT)	
	Adult	Young
Cattle	5000-7000	-
Goat	450-600	-
Swine	1000	400
Poultry	25	60

A.2.4.5.8 National Policy and Strategy for Livestock Development

At peace accord in 1992, the Government of Mozambique (GOM) has identified agriculture production as the basis for poverty alleviation and for the economic growth of the country with special emphasis on the small-scale farmers. Based on this, the Ministry of Agriculture and Rural Development (MADER) through its National Directorate for Livestock (DINAP) has established their strategy for promotion of livestock development as a contribution to the improvement of welfare and food security of the households taking account into the sustainable use of natural resources. The family sector is the main target group.

To attain these objectives, the strategy pursues the following:

- To rehabilitate livestock infrastructure
- To develop restocking program
- To promote the development of livestock related institution
- To assist the family and private sector for expansion of their activities

The rehabilitation of livestock infrastructures include dip tank, point of drinking water, crush-pen, quarantine unit, laboratory analysis and diagnostic etc.

The assistance of the family sector can be summarized as follows:

- Promotion and assistance of dairy farmers
- Introduction of draft animal power
- Promotion the increase of poultry production
- Support the rural extension service

A.2.4.5.9 Livestock Restocking Program

The launching of the livestock restocking program was the basis for re-initiation activities in the country. This program was initiated in 1994 with the participation of Government and several NGOs.

The strategies and distribution criteria are quite diverse. In the selection of beneficiaries, DINAP and NGOs opted by the prioritization of those farmers known as traditional livestock producers who are assumed to have some experiences of animal husbandry in the past. The costs of the cattle to the beneficiaries are being summarized in Table A.2.4.4.

Table A.2.4.4 Costs of Cattle to the Beneficiaries

Entity	Amount (MT) to be paid to be the beneficiary (per head)	Modality for payment
DINAP	1,200,000	<ul style="list-style-type: none"> ● Payment at once ● Payment in installments from the 3rd to 5th ● Devolution of one calf
ANS	900,000	<ul style="list-style-type: none"> ● Payment at once and devolution of one calf ● Payment in installments and devolution of the first calf
ORAM	7,000,000 for group of 3 animals (approx. 2,300,000/head)	<ul style="list-style-type: none"> ● Installments from the 2nd year for 4 year period and devolution of the first year
MOLISV	3,500,000 (castrated) 3,500,000/4,000,000 (cow)	<ul style="list-style-type: none"> ● Four installments every six months and devolution of the first Year ● Payment at once
Terre des Hommes	Gratis	<ul style="list-style-type: none"> ● Devolution of calf

In all the cases, the calves returned were given to a new beneficiary.

ATAP (a local NGO) provided 3 animals of each species (chicken, duck and goat) in its restocking program. Under this program, the beneficiary was supposed to pay 150,000 MT for each goat and 25,000 MT for each poultry. Furthermore, the farmer was supposed to return one offspring for goat and an equal number of poultry of what he has received.

It recognized that the implementation to the restocking program created a great and positive impact for the recovering of the national stocks. However, several factors impeded the full achievement of the foreseen results. These are:

- Poor monitoring system
- Mortality of animals especially in the family sector
- Poor technical assistance during the distribution process
- Problems in animal devolution
- Sustainability of the program. Some partners consider this as a non-sustainable program at long run due to its high level of subsidies.

Having this mind, DINAP introduced some modifications into the program being the following the most important:

1) Imported cattle was given to the private sector based on criteria of technical and financial capacity, availability of area and adequate infrastructure, ownership of at least 50 heads (in the case of cattle) and the selection on and open auction process.

2) The family sector benefit from the program through:

- Before signature of individual contract with Government, it should be taken into account that there are adequate infrastructure in the selected zone for technical assistance, grazing and drinking water and capacity for monitoring with assistance of rural extension. The selection is from open auctions as well.
- Animals can be given by contract. The animals should be adapted to the zone and reproductivity age. The selection of beneficiaries will be made from the communities or by lottery
- The cost of animals from multiplication units is based on the market price. The selection is as described in point 2).
- Animals can be given on a contract bases with associations taking account of matter prescribed in point 1). In the case that the animals were imported, they should belong to adequate breeds. Form the sanitary point of view, they have to be inoculated against tick and tick born diseases before the importation or distribution to the private farmers.
- Regarding to involvement of NGOs and local-based Projects, it should be noted that the entities refer in points 4) and commit themselves with DINAP that they will provide necessary technical assistance and devolve the animals on farmers through direct selling of offspring coming from multiplication or from other sources at market price besides the payment of restocking taxes.

The duration of the contract is reduced for a maximum of 5 years. The proportion of returned animals in the first, second and third installments are now fixed at 30, 30 and 40 % respectively, beginning in third year of the contract (DINAP, July, 1999).

A.2.4.5.10 ATAP activities in the Study Area

ATAP is a humanitarian Non-Government Association with no lucrative purpose. The association gathers animals farming technicians governed by laws and appropriate programs and dedicated to promote, support and participate in concrete actions for the development of animal husbandry and environmental sectors in the country in juxtaposition with the Government, NGOs and civil society. The objectives of heir activities are:

- To promote environmental development, agriculture and animal husbandry in the family sector
- To promote self-employment in national farming technicians

ATAP is developing various projects in Maputo province at present, especially in the district of Manhica, Magude and Moamba. The projects carried out by ATAP are meant to support the family sector in different agricultural and family areas.

The organization is also engaged in the advocacy programs especially in the publication of the new land laws and the empowerment of community agents owning also the provincial land form.

At present, a project is being carried out in Manhiça district with the view to livestock in the area. The project is financed by the European Union at the extent of food security program. Started in 1998, the project expects to cover 800 families that will benefit from the reproduction (goat, duck and chicken) and veterinary assistance.

In Munguine, ATAP owns a center for farmers' assistance. The center operates with one technician, a coordinator and three assistant workers.

At the end of EEC financing, ATAP will continue with their activities for the ensuing six months with a self-funding scheme. If the need for support still prevails in the community, the association will find a new financier or partnership with other organizations.

Table A.2.4.5 List of ATAP Activities

Project	Nature	Period	Beneficiary	Donor
Restocking livestock	Food security	1998 - 2001	800 families	EU
Divulgarion of land law	Advocacy	1998 - 2001	942 families (Manica and Namaacha)	CONCERN, KEPA, OXFAM-Canada
Emergency aid to people affected by the floods	Emergency	02/00 - 04/00	2,000 families (Maluana and 3 Fev.)	CONCERN
Multiplication and fomentation of roots and tubercles	Food security and nutrition	07/00 - 12/00	2,000 families (Maluana)	SARNET/INIA
Rapid Rural Appraisal	Survey	07/00	Manica district	OXFAM-Canada
Reassentament to das victims das cheias	Humanitarians	07/00 - 09/00	250 families (Manica and Iha Josia Machel)	CONCERN
Distribution of seeds in emergency FAO program	Food security	10/00 - 12/00	10,493 families (Maluana and Manica)	FAO/MADER
Rehabilitation after floods program for agriculture and livestock	Food security	12/00 - 10/01	750 families (Manica, Maluana and Moamba)	CONCERN
Animal traction	Food security	02/00 - 12/01	51 families (Chibuto)	OXFAM-Australia

A.2.4.5.11 Conclusion and Recommendations

Based on the previous analysis, it can be concluded that livestock raising is, for sure, one of components that can greatly contribute to poverty alleviation and food security at household level in the Study Area. Major finding of this survey are described bellow:

- The number of livestock has shown significant increase in the last year
- The rate of calving and mortality (especially in cattle) on the current situation is encouraging
- According to the farmers, the lack of reproducer and the lack of money is a serious constraint to rapid livestock expansion
- The prevalence of disease and the lack of disease control contribute to reduce the number of livestock

Measures for development of livestock production are described bellow:

- Promotion of local breeds of the various species in the family sector
- Improvement of feeding and sanitary management as well as the reproductive handling and training of farmers in order to attain rapid growth rates of herds
- Establishment of communal natural pasture to avoid conflicts with agricultural lands