The Study on the Integrated Development Master Plan of the Angonia Region

Sector Report 2: Social Sector

Part 2: Public Health Development

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1.1. Health Policy and Health System

1.1.1 Health policy

Since the independence in 1975, the Government has been giving a high priority to primary health care (PHC) as the main strategy for achieving the universal access to health care. Contrary to the colonial government which emphasized urban based curative medicine, the new government nationalized health services and expanded health networks mainly in rural areas stressing preventive and promotive health care.

There have been various changes in practice since 1992 such as legalization of private sector activities. The Government's objectives for the health sector have focused on rebuilding the existing system, particularly in rural areas and in regions most affected by the civil war. Main strategies for reconstruction of the National Health System (NHS) are the following:

(1) maximizing the benefits from the use of available resources;
(2) fairness in distributing resources and equity in the access to health care by region and social groups;
(3) integration of the public and the private sectors (including NGOs);
(4) securing users' free choice of health service providers;
(5) preserving positive experience gained by the NHS in implementing PHC, and
(6) adopting monitoring standards.

As for the coverage of health services, the Government plans to increase from 40% at present to 70% by the year 2002. Also it is expected that basic health be transferred to local authorities, although provinces and districts are not prepared to take broader responsibilities at present. Local authorities will become responsible for management of local revenue, facilities and equipment maintenance, and basic and elementary staff management. The Ministry of Health (MOH) will be still in charge of critical activities such as policy making, allocation of public funds, purchasing of drugs, deployment of university level personnel and large investment.

1.1.2. Health system

The National Health System (NHS) managed by MOH is organized in four tiers as listed below. The numbers in parenthesis indicate the number of each facility in 1997.

Level 1: Health centers (277) and health posts (734)

Level 2: Rural and general hospitals (24)

Level 3: Provincial hospitals (7)

Level 4: Central hospitals (3) and specialized hospitals (2)

Health centers (with maternity and inpatient wards) and health posts provide both curative and preventive PHC services including mother and child care, essential drug, nutrition and health education. In general, each district has at least one health center, but not all health centers have a medical doctor. Since nearly 1,000 health facilities (mainly health posts) had been destroyed or forced to close during the civil war, deterioration of health and nutritional status is much more serious in rural areas.

Rural hospitals (called general hospitals in cities) provide the first level referral services including emergency care and simple surgery. Most of them have radiology facilities. Seven provincial hospitals are situated in provincial capitals and provide more sophisticated services with at least four specialist (internist, surgeon, pediatrician and obstetrician) and 200 to 300 beds. Three provinces (Nampula, Sofala and Maputo) are served by larger hospitals (called central hospital). The Maputo central hospital with 1,500 beds is the top referral hospital in Mozambique and is also the university teaching hospital.

As Table 2.1 shows, Mozambique has only 42 public hospitals to serve more than 17 million national population. Since the whole referral system does not work well, mainly due to problems of costs and access, the only accessible services are those located within the home district for most of the population. For the same reason, traditional medicine is practiced nationwide and heavily relied on besides the NHS.

Table 2.1. Number of Health Facilities by Province, 1999

Province	Hospital	Health center	Health post	Total
Cabo Delgado	4	51	29	84
Gaza	5	13	82	100
Inhambane	3	53	25	81
Manica	2	13	60	75
Maputo	2	39	49	90
Maputo city	5	16	19	40
Nampula	7	56	107	170
Niassa	2	16	98	116
Sofala	5	26	108	139
Tete	**3**	**46**	**37**	**86**
Zambezia	4	24	146	174
Total	42	353	760	1,155

Source: NIE, *Estatisticas e Indicadores Sociais 1999.*

One of the specific features of the health system in Mozambique is that the NHS has provided the vast majority of services at all levels. This is strikingly different from the situation in other African countries where especially NGOs provide approximately 50% or more of health services. This is presumably related to the fact that the comprehensive PHC approach in Mozambique has a long history so that she became one of a model of PHC in the field of international health.

Private clinics that provide high quality medical services with sophisticated medical equipment and foreign medical experts are increasing only in big cities like Maputo. There is a wide gap between private and public clinics in levels of service quality and prices. Since those who can afford the cost of private clinics seem limited to the rich and foreign residents who can join the health insurance, the share of private providers does not grow rapidly in Mozambique.

1.2. Existing Health Conditions

1.2.1. Basic health indicators

As Table 2.2 indicates, health conditions in Mozambique are below the corresponding averages for the groups of Least Developed Countries and Sub-Saharan African countries by most of the basic health indicators. Mortality levels of today are about the same as mortality levels at the time of independence in 1975, mainly because of the civil war, low development level and insufficient public resources devoted to the social sectors.

Table 2.2. Comparison of Human Development Index, 1997

	Mozambique	Sub-Saharan Africa	Least developed countries
Life expectancy	45.2	48.9	51.7
Infant mortality rate (per 1,000)	130	105	104
Maternal mortality rate (per 100,000)	1,500	979	1,041
Total fertility rate	6.3	5.5	5.0
Adult literacy rate	40.5	58.5	50.7
Human Development Index	0.341	0.463	0.430

Source: UNDP, *Human Development Report 1999.*

Infant and child (under-five) mortality rate in Mozambique has not declined significantly, especially among children whose mothers are uneducated and live in rural areas. Two out of ten children die before reaching their fifth birthday. The highest infant mortality is found in Nampula (216 per thousand) and the lowest in Maputo city (49 per thousand), and Tete is the third highest province (Table 2.3).

Table 2.3. Basic Health Indicators by Province

Province	Infant mortality rate	Total fertility rate	Low birth weight rate (%)
Cabo Delgado	123	4.9	13.9
Gaza	135	5.9	10.2
Inhambane	151	5.5	6.5
Manica	91	7.6	10.2
Maputo	92	5.0	9.8
Maputo City	49	4.0	11.6
Nampula	216	5.6	13.7
Niassa	134	5.9	12.8
Sofala	173	6.1	13.3
Tete	**160**	**7.0**	**13.3**
Zambezia	129	5.4	15.0
Mozambique	147	5.8	12.1

Source: NIE, *Statistical Yearbook 1997.*

As for total fertility level, Manica and Tete provinces show the highest (7.6 and 7.0, respectively), while in Maputo city total fertility rate is 4.0. Fertility levels and maternal mortality also vary by education level of women. Maternal mortality is much worse than the average of Sub-Saharan African countries mainly due to low literacy rate of women, shortage of health assistance at delivery and antenatal care.

Table 2.4. Basic Health Indicators in the Study Area, 2000

District	No of new-born babies	No of live birth less than 2.5kg	Low birth-weight rate (%)	No of stillborn babies	Stillborn rate (%)	No of dead pregnant women & nursing mothers	Maternal mortality (%)
Angonia	4,514	595	13.2	122	2.6	10	0.22
Chifunde	766	53	6.9	20	2.5	1	0.13
Chiuta	769	70	9.1	17	2.2	0	0.00
Macanga	661	60	9.1	12	1.8	1	0.15
Moatize	4,799	594	12.4	60	1.2	0	0.00
Tsangano	610	32	5.2	6	1.0	0	0.00
Tete city	5,400	621	11.5	201	3.6	15	0.27

Source: Provincial Health Directorate.

The leading causes of death in Tete province are 1) malaria, 2) pneumonia /tuberculosis, 3) HIV/AIDS, 4) anemia, and 5) malnutrition. These predominant diseases are typical poverty-related diseases associated with poor hygiene and nutrition, limited water supply and low educational and economic level. Due to the poor environmental and hygiene conditions, Mozambique is still vulnerable to epidemics such as cholera, dysentery, plague,

malaria, and meningitis which cause hundreds of deaths nationwide almost every year. Tables 2.5and 2.6 present mortality and morbidity by major disease officially reported in the Study Area. Although many cases seem underreported to provincial health offices, in terms of epidemiological trend big differences could not be seen among these districts.

Table 2.5. Number of Deaths and Cases by Major Diseases in the Study Area, 1999

	Number of Deaths			Number of Cases			
District	Malaria	Cholera	Diarrhea	Malaria	Diarrhea	Dysentery	Cholera
Angonia	-	9	-	18,608	2,637	895	194
Chifunde	-	5	-	173	517	97	23
Chiuta	-	3	-	-	867	274	20
Macanga	-	5	-	56	757	182	75
Moatize	24	14	8	24,873	4,678	1,214	819
Tsangano	-	-	1	713	472	163	
Tete city	-	31	-	35,333	8,403	2,285	1,290
Tete hospital	208	-	34	2,944	1,340	239	
Total	232	67	43	81,987	19,199	5,186	2,421

Source: Department of Epidemiology, MOH.

Table 2.6. Top 10 Cases of Death in Tete Provincial Hospital

	1996	1997	1998	1999	2000	2001
1	Malaria	Malaria	Malaria	Malaria	Malaria	Malaria
2	Pulmonary Tuberculosis	Broncho pneumonia	AIDS	Broncho pneumonia	AIDS	Broncho pneumonia
3	Broncho-pneumonia	Malnutrition	Broncho-pneumonia	Malnutrition	Broncho-pneumonia	Malnutrition
4	Anemia	Anemia	Malnutrition	AIDS	Malnutrition	AIDS
5	Pneumonia	Pulmonary tuberculosis	Pulmonary tuberculosis	Pulmonary tuberculosis	Pulmonary tuberculosis	Pulmonary tuberculosis
6	Malnutrition	Diarrhea	Anemia	Cardiac insufficiency	Anemia	Cardiac insufficiency
7	Pneumonia	AIDS	Diarrhea	Diarrhea	Diarrhea	Diarrhea
8	AIDS	Meningitis	Meningitis	Anemia	Meningitis	Anemia
9	Cardiac insufficiency	Pneumonia	Cardiac insufficiency	Meningitis	Cardiac insufficiency	Meningitis
10	Meningitis	Cardiac insufficiency	Pneumonia	Pneumonia	Pneumonia	Pneumonia

Source: Tete Provincial Hospital.

1.2.2. HIV/AIDS

Like other Sub-Saharan African countries where AIDS prevalence is most serious in the world (Table 2.7), HIV is the most critical health problem in Mozambique because of its huge impact on mortality and population's activities.

Table 2.7. HIV Infections in Neighboring Countries of Mozambique

	AIDS cases per 100,000 people	
Country	1995	1997
Botswana	35.9	351.6
Malawi	47.3	505.4
Mozambique	**7.4**	**33.5**
South Africa	6.8	29.6
Tanzania	95.5	281.4
Zambia	45.3	530.1
Zimbabwe	118.6	564.4
Sub-Saharan Africa	22.2	111.1
All developing countries	4.8	28.9

Source: UNDP, *Human Development Report*, 1997, 1999.

The number of HIV/AIDS cases, first case reported in 1986, is increasing at high rates nationwide. A total of 97,749 AIDS cases and more than 1.3 million HIV infection have been reported by the end of 1999, but according to more realistic estimates the cases may be more than 170,000.

Table 2.8. Reported AIDS Cases by Year and Region

	Total	AIDS cases per 100,000	1992	1993	1994	1995	1996
North	**174**	**3.0**	**27**	**9**	**-**	**58**	**45**
Cabo Delgado	27	1.9	10	2	-	4	-
Nampla	112	3.4	12	7	-	33	41
Niassa	35	3.5	5	-	-	21	4
Central	**1,451**	**20.4**	**158**	**70**	**262**	**505**	**311**
Manica	475	58.5	34	15	-	179	180
Sofala	165	10.8	37	46	-	52	-
Tete	**568**	**47.8**	**66**	**-**	**262**	**194**	**11**
Zambezia	243	6.6	21	9	-	80	120
South	**344**	**8.8**	**50**	**9**	**-**	**129**	**117**
Gaza	114	7.1	8	3	-	81	12
Inhambane	140	9.7	8	3	-	44	83
Maputo	90	9.5	34	3	-	4	22
Maputo city	**2,857**	**260.8**	**87**	**76**	**272**	**688**	**1,613**
Total	**6,126**	**340**	**322**	**164**	**534**	**1,380**	**2,086**

Source: NIE, *Statistical Yearbook 1997.*

As shown in Table 2.8, the central provinces including Tete are most affected, with estimated prevalence rate of 20% of the population, than other provinces including Maputo city whose estimated prevalence rate is 12%. This is partly related to the population movements of refugees returned from countries with higher HIV prevalence (Zimbabwe, Malawi, and Zambia). In 2000 reported AIDS cases in Tete province increased to 544,

while total death number from 1995 to 2000 reached 236. However, estimated AIDS cases in Tete province were more than 9,000 in 1999 as Table 2.9 indicates.

In the Study Area, infection level of HIV is especially high in Angonia, Tsangano and Chifunde districts bordering on Malawi and Zambia, respectively. According to the HIV surveillance carried out in Tete city and Changara in November 2000, HIV prevalence rate among pregnant women reached 20-22 %, i.e., one in every five pregnant women is HIV infected. This implies the expansion of vertical transmission from mother to children, contributing to the increase in the number of AIDS orphans (Table 2.9).

Table 2.9. Number of HIV/AIDS Cases by Age Group in Tete Province

Age group	1998			1999	
	Reported AIDS cases	Estimated HIV cases	Estimated AIDS cases	Estimated HIV cases	Estimated AIDS cases
0-4	0	4,401	1,120	4,707	1,454
5-14	2	2,434	435	3,886	565
15-19 (female)	0	2,285	128	2,682	163
15-19 (male)	1	3,377	189	3,965	242
20> (female)	11	37,648	2,106	44,203	2,693
20> (male)	14	56,024	3,134	65,779	4,007
Total	28	106,169	7,112	125,223	9,124
No of AIDS orphans <15	11,523			17,001	

Source: Department of Epidemiology, MOH.

A regular surveillance system was established in 1992 and the Government has implementing the National AIDS Control Program (NACP) since 1999. Under this program, the National AIDS Council, directed by the Prime Minister, has been established. The NACP has invited 23 ministries and many non-governmental organizations like Mozambique Network of AIDS Services Organization to join the program, but few are involved in an active way at the moment. The NACP has set its strategic measures as follows:

- To ensure quality control of diagnosis and treatment of HIV/AIDS,
- To strengthen reproductive health programs for adolescents and HIV infected children,
- To pay special attention to those living with HIV/AIDS, and
- To implement epidemiological studies to monitor the epidemic and its impact for health.

Also the Tete provincial health office established the "HIV/AIDS Action Plan" in coordination with the National AIDS Council at provincial level in 2000, which aims at multi-sector cooperation involving NGOs for both preventive and curative activities, but

only a few curative programs have been implemented yet due mainly to lack of financial support and experts. Though AIDS is ranked as second or fourth cause of death at the Tete provincial hospital as Table 2.6 shows, special treatments for AIDS patients are not available. Home-based AIDS care by the public sector including counseling and prescribing AIDS medicine has been implemented only in Maputo and Chimoio cities throughout the nation at present.

Main activities of international and local NGOs on HIV/AIDS in Tete province are as follows:

- World Vision:

  Distributing condoms, health education for rural community people;

- Medecins sans Frontieres (MSF):

  Implemented both treatment and prevention programs in the first phase, and will expand activities in the second phase such as prescribing AIDS medicine, and construction of day care centers;

- Luta Contra a SIDA (Fight against AIDS):

  Implemented programs such as family planning, IEC, control of STI (sexual transmitted infection), and treatment of patients, in Tete city, Moatize and Angonia districts, aiming to reduce the incidence of HIV among young people from 15 to 19 years old by 2006; and

- Marie Stopes International:

  Involved in family planning activities focusing on reproductive health program.

1.3. Existing Health Resources

1.3.1. Health manpower

Mozambique faces severe shortages in trained health personnel. At the end of 1975, 171 medical doctors practiced in Mozambique and most of them had evacuated. Due to the civil war and lack of higher education, the number of physicians had not increased until recently. Today 477 doctors including 200 foreigners work in the whole Country, but nearly half of them work in Maputo city as Table 2.10 indicates. The ratio of doctors to population is 32,000, much worse than the average for Sub-Saharan countries with 1 doctor per 18,000 people.

The total health personnel employed in the NHS is 18,000 and approximately 10,000 of them are trained professionals. Since MOH gives high priority to manpower development, the proportion of untrained workers is slowly decreasing. However, the number of medical assistants including nurses, laboratory technicians and pharmacists is

still definitely insufficient. The main health training facilities are (i) the faculty of medicine in Maputo, (ii) four health science institutes in Maputo, Beira, Nampula and Quelimane and (iii) training centers in other provinces. There are 50 new graduates from the only medical school every year, but most of them favor working in large hospitals and cities and southern provinces. MOH provides housing and vehicles for health workers posted in rural areas, but non-cash incentives such as better career opportunities seem necessary to improve the situation. Table 2.11 presents the average distribution of health personnel in four types of rural health facilities.

Table 2.10. National Health Service Infrastructure, 1997

Province	No. of hospitals	No. of doctors	Beds per 10,000 person	Institutional birth coverage	EPI coverage (%)
Cabo Delgado	4	28	5.9	19.5	25
Gaza	5	23	7.6	31.3	63
Inhambane	3	13	8.4	27.0	72
Manica	1	24	9.1	44.7	47
Maputo	4	20	9.6	26.6	62
Maputo City	5	212	21.4	74.1	82
Nampula	6	45	6.1	26.6	34
Niassa	2	11	6.2	35.1	48
Sofala	5	49	10.8	30.8	50
Tete	**3**	**25**	**8.3**	**26.7**	**48**
Zambezia	4	25	3.5	16.6	23
Mozambique	43	477	7.7	29.0	47

Source: NIE, *Statistical Yearbook 1997*.

Table 2.11. Average Number of Health Personnel in One Health Facility, 1997

	Health post	Small health center	Large health center	Rural hospital
Medical doctor	0	0.1	0.5	2
Mid-level medical assistant	0.1	1	1.9	6.6
Basic medical assistant	0.7	4.5	7.7	19.9
Elementary medical assistant	0.8	2.4	4.7	7.3
Total	1.6	8	14.8	36.8

Source: MOH, *Health Sector Profile 1998*.

The shortage of health personnel in the Study Area is critical. Tete province has 25 physicians according to the data of MOH, but only 22 of them practice medicine. Most of them work in the province capital, while Chifunde, Chiuta, Macanga and Tsangano districts have no doctor as shown in Table 2.12. Most of specialist doctors are foreigners in Tete since there is no incentive for doctors to work in remote areas. Moreover, the province has only 594 health workers in 2001 to serve more than 1 million population. Since young health assistants who recently had training often pass away because of

HIV/AIDS, rapid increase of total number of health manpower seems difficult.

Table 2.12. Health Manpower and Facilities in the Study Area

	Angonia	Chifunde	Chiuta	Moatize	Macanga	Tsangano	*Tete city
Population	315,000	34,000	51,000	165,000	46,000	109,000	101,984
Population access to health services	11%	20%	33%	12%	32%	33%	--
Average distance to Health facilities	--	35km	45km	50km	35km	45km	--
Rural Hospital	1	0	0	0	0	0	1
Health Centers	6	1	1	2	2	1	10
Health Posts	3	4	2	6	2	3	6
No. of Beds	218	6	10	48	24	23	374
Vaccination Posts	9	1	5	7	2	2	--
Maternity Wards	1	1	2	5	0	0	--
No.of Medical Doctors	3	0	0	2	0	0	13
Middle-level medical assistant	11	1	1	7	3	0	33
Basic medical .assistant	28	8	8	28	6	8	106
Elementary medical assistant	18	9	6	22	6	5	38
Community Health Worker	10	0	12	4	2	0	--
Traditional Birth Attendant	69	11	21	14	24	31	--

Note: Data of Tete city includes number of medical staff in Provincial Hospital.
Source: MOH, *District information on food and nutrition*, 2001.

1.3.2. Health facilities

Since the Study Area has only two hospitals and each district has very few health facilities, the average distance to the closest facilities is more than 35 km, and more than 70% of the population do not have access to any health services in general in the Study Area. Therefore people living in rural areas usually go to traditional healers and take herbal medicines. Also people living close to the border sometimes go to clinics in Malawi and Zimbabwe, where health service level is much better than Mozambique. The Study Area has one training center, supported by DANIDA, only for elementary and basic level medical assistants.

To combat this serious situation, the Provincial Health Directorate, responsible for health planning, service provision, funding and monitoring, tries to increase the number of facilities step by step. In 1999 two health centers were newly constructed and the pediatric ward at Tete provincial hospital was rehabilitated. In 2000 five health centers were constructed, and 16 residences were constructed for health workers in the provincial sanitary units. Table 2.13 shows the investment plan for health infrastructure.

Table 2.13. Investment Plan for Health Facilities in the Study Area, 2000-2003

Districts	Facilities
Angonia	Construction of 1 health center and 2 residences for health workers in Chia
	Construction of 1 health center and 2 residences for health workers in Namicona
Chiuta	Provision of furniture for 6 residences
Moatize	Construction of 1 health center and 2 residences for health workers in Catipo
	Construction of 1 health center and 2 residences for health workers in Micunga
	Construction of 1 health center and 2 residences for health workers in Mussacama
Tsangano	Construction of 1 health center and 2 residences for health workers
Provincial hospital	Rehabilitation of telephone facilities
Provincial health directorate	Provision of equipments for sanitary unit Provision of equipments for medical waste

Source: Provincial Health Directorate.

1.3.3. Financing

The health care system in Mozambique is heavily dependent on foreign aid as Table 2.14 presents. MOH, predominantly financing the NHS, receives 62% of its funding from grants and credits, and 98% of the budget for medicines is financed by external funds. Of all the external funds, nearly 35% was devoted to the health sector in 1991. The whole health sector was estimated to have consumed US$122 million in 1998 and the contribution of user charges, introduced in 1990, to the overall government budget is only 3%. The government expenditure in the health sector was 7.9% in 1997 and is gradually increasing.

Table 2.14. Percentage of Donated Funds in Health Budget by Province

(Unit: %)

	1996	1997	1998	1999
Cabo Delgado	64	62	59	53
Gaza	73	58	57	39
Inhambane	76	62	48	56
Manica	65	51	62	71
Maputo	41	34	40	33
Maputo city	22	23	54	31
Nampula	59	40	41	-
Niassa	75	66	63	57
Sofala	23	32	38	34
Tete	**69**	**59**	**60**	**76**
Zambezia	71	57	51	45
Average	48	41	44	-

Source: MOH, *Annual Report 2000.*

Since donors' funds enter the Government in many ways usually unplanned, MOH has tackled management of external funds for more efficient program implementation.

Recently, MOH has introduced so-called a provincial integrated program, by which one donor takes responsibility for one province for implementing comprehensive health support from provision of equipment to capacity building.

In Tete province, DANIDA has implemented the health sector program support cooperating with the provincial health directorate. This program includes budget support, training of administrative staff, rehabilitation of health facilities, drug supply, health manpower training, health education, home-based HIV/AIDS care and primary health care. DANIDA supported more than 42% of total provincial health expenditure in 1998. As for health budget for materials, DANIDA fund consists of 37.7%(Mt.7,670 million) while provincial government expends 55.5% (Mt.11,207 million).

Chapter 2. Objectives and Strategy for Public Health Development in the Study Area

2.1. Public Health Issues in the Study Area

Adequate provision of primary health care is an essential part of basic human needs, that should be satisfied as a prerequisite to any regional development. The Study Area still faces acute shortages of health personnel and facilities, despite the restoration efforts after the civil war supported by international aid organizations and NGOs. Moreover, the present distribution of health personnel and facilities is grossly unbalanced. Health services in rural areas need to be much improved as a matter of urgency.

Improvement of health facilities is one thing, and improvement of health services is quite another. At present, more qualified health personnel and skilled manpower concentrate in Tete city. While training of more health personnel is required, their deployment needs to be improved in favor of districts and rural areas. Provisions of benefits in general, and of proper housing in particular holds a key. This can be accomplished only with the development of various infrastructures in rural areas as a whole. Then, a better initial strategy may be to improve health facilities only in selected localities along with general improvement of infrastructure there in combination with the improved access from their respective hinterlands.

Poor health conditions of people reflect their poverty with insufficient nutrition and inadequate hygiene. This seems to be the case in the Study Area as the leading causes of death indicate. Improving economic infrastructure in rural areas has been found to be most effective in alleviating poverty in Mozambique (MPF et al., *Understanding Poverty and Well-Being in Mozambique, The First National Assessment (1996-97)*). Again, improvement of infrastructure should be undertaken selectively and in steps. At the same time, health education and awareness program may be conducted to enhance health awareness of people and reduce infectious and food-borne diseases prevalent in the Study Area.

Another issue is better donor coordination. Many donors and NGOs such as World Vision, MSF, ISCOS and LWF have been involved in health support activities in the Study Area. Their activities need to be better coordinated basically in line with the government policy to improve health services delivery more effectively against massive needs.

2.2. Objectives and Strategies

2.2.1. Objectives

In Tete province, major reconstruction and rehabilitation of health services has been carried out since the end of the civil war, but coverage levels still remain low, and majority

of the population do not benefit from health services at all. In the Study Area, poverty-related diseases are predominant mainly due to low economic and educational level.

In such a situation, the overall objective of health development should emphasize achieving universal access of health care as an essential part of basic human needs through a community-based approach. Since available health resources in the Study Area are quite limited, focusing preventive activities by empowerment of local people would be most efficient to improve health status.

2.2.2. Strategy

Under the basic strategy for social development, strategy for health development in the Study Area is established with four broad components.

(1) Strengthening health promotion program

The lack of adequate knowledge on hygiene and sanitation due to low educational level is critical. A community nutrition education program is essential especially for women to improve their dietary habits, which will lead to decrease in both infant mortality and maternal mortality. Although provincial health offices and donors have already implemented several health education programs such as 20 minutes weekly radio broadcasting in three different languages via radio together with dissemination of written health information materials, the effectiveness seems insufficient.

Increasing health awareness could prevent diseases like diarrhea and malnutrition, two major causes of childhood death. For example, people do not boil dirty water to make safe drinking water. Not understanding the importance of breastfeeding, mothers start giving their newborn babies solid food too early, leading to malnutrition. Health promotion should be carried out through community participation so that the community members will become able to solve health problems by themselves to some extent. Since the lack of education is a most serious development issue in the region, strengthening of health education programs should be pursed by collaboration with other sectors.

(2) Strengthening reproductive and child health interventions

The level of infant mortality and fertility in the Study Area is much worse than the national average. Women's awareness of spacing methods and access to contraceptive information seem to be low and their husbands do not generally cooperate with or approve of family planning. The reproductive and child health (RCH) interventions are anticipated to achieve multiple objectives, including improved health status of women of childbearing age and of their children, reduced level of fertility and population growth, and prevention of STI (sexually transmitted infections) including HIV/AIDS.

Countries or regions with such a high mortality and fertility level, health interventions for women is most efficient to improve total health status. This RCH approach is expected to reduce unwanted fertility and maternal and childhood deaths, thus enabling poor women to participate in economic activities and build a base of healthy human capital essential for economic growth. For successful intervention, other factors such as female education and employment are expected to improve.

(3) Improving access to health services

Although the number of health facilities and health manpower has been increasing little by little, the provision of health services in the Study Area is absolutely insufficient. The primary issue in the Study Area is severe shortage of trained health personnel and maldistribution of health resources. An incentive program should be developed to attract health staff including medical doctors to work in currently under-served areas.

Training is important not only for increasing manpower but also improving quality of services. Improvement of training programs and an increase in the number of students in training centers would be desirable. Training programs for teachers in centers should be upgraded. Moreover, technical training for health assistants in health facilities and for health administrative staff is recommended.

(4) Strengthening management capacity in the health sector

Effective implementation of health programs depends on both technical and administrative management capacity. Since the health sector suffers from budget shortages and mobilizing more resources from private sector is difficult in the Study Area, effective use of limited resources is important. Activities such as minimizing wastes as far as possible to reduce expenditure, and providing education on self-care to decrease the number of patients with minor diseases will increase the efficiency of health programs.

Upgrading health information system is important for better needs assessment, planning, monitoring and evaluation of health services.

Chapter 3. Projects for Public Health Development

The Angonia regional development master plan defined one of development objectives as to improve levels and quality of various social services. The total population of the Study Area will be 1.5 million in 2025 according to the master plan. Since both in- and out-migration would increase under more active socio-economic interactions, communicable diseases including HIV/AIDS may spread and health problems may increase. Better health services should be provided for both urban areas and local communities. Proposed health projects are presented below.

(1) Tete provincial hospital upgrading

The Tete provincial hospital is a top referral hospital with 300 beds and more than 40,000 outpatients per year. Although this is the only hospital that has several specialist doctors and emergency unit operating 24 hours in the province, lack of basic equipments and old buildings constrain the provision of better health services. At the same time the number of AIDS patients is increasing in the hospital, but no special treatment for them is available at present. This project aims at improving health care services in the region by establishing a provincial center for AIDS related activities. Provision of equipment and construction/rehabilitation of facilities will upgrade quality of services of this hospital. The proposed HIV/AIDS care center is expected to carry out home-based care and research activities as well.

(2) Health referral system establishment

The number of health facilities is quite limited in the Study Area that has only two hospitals. Districts such as Chifunde, Chiuta, and Tsangano have only one health center respectively and no medical doctors. More than 70% of the population do not have access to any health services. This project aims at establishing referral system between hospitals and health centers/posts and introducing telecommunication systems to improve operation of this system.

(3) Health awareness enhancement program

Typical poverty-related diseases like malnutrition and diarrhea are dominant in the Study Area due to poor hygiene, nutrition, limited water supply, and low educational and economic level. These diseases could be prevented without medical doctors or medicines if people have adequate health knowledge and food habits. The proposed program would encourage community participation so that people can solve health problems by themselves. Involvement of the private sector including NGOs would be essential.

The Study on the Integrated Development Master Plan of the Angonia Region

Sector Report 2: Social Sector

Part 3: Community Development and Participatory Approach

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Sector Report 2: Social Sector

Part 3: Community Development and Participatory Approach

Introduction

Part 3 of the social development sector report consists of three chapters. Chapter 1 outlines the present conditions and characteristics of the Study Area. Based on data analysis and complementary interviews during the study period, it provides a general overview of policies related to the welfare in the Study Area. It also provides a brief look at the landmine issues in Mozambique and Tete province.

Chapter 2 discusses and analyzes the present conditions of the Study Area in more details employing a participatory survey. The survey team visited 12 communities (two communities in each of six districts) to complement existing data and study reports. It provides more detailed information and analysis of the Study Area.

Based on the data contained in the previous two chapters, Chapter 3 discusses objectives and strategy for the community development. This chapter provides comprehensive approaches to attaining goals in line with the Angonia regional development strategy.

In the same chapter, the proposed program/projects are also presented. The development of the proposed programs/projects was done, again, in a participatory manner. During the survey period, communities proposed a list of projects/programs to improve living conditions of the respective communities. The Study Team further elaborated the specifics of the projects/programs based on the needs identified through the survey. The Study Team further discussed with communities and respective government officials to finalize the details of the proposed/projects.

Chapter 1. Overview

1.1. National Policy on Poverty Alleviation

1.1.1. Overview

The government of Mozambique considers reduction of absolute poverty as major priority in the national policy. Its current poverty reduction strategy focuses on (a) promotion of smallholder growth, (b) improvement of the Country's human resources through improved access to health care and education, (c) adoption of safety nets for the most vulnerable. Various governmental plans and programs are in line with the strategy.

1.1.2. Five-Year Program 2000-2004

The strategy is reflected in the current Five Year Program 2000-2004 (Resolution Nr. 4/2000 of March 22, 2000). It asserts 'reduction of absolute poverty levels' is one of the top objectives in the implementation of the Program.

The Five Year Program consists of four objectives: reduction of absolute poverty levels, rapid and sustainable economic growth, reduction of regional disparity, and consolidation of peace and national unity.

The alleviation or reduction of absolute poverty levels is sought through:

> "orientation of basic [public] services to the more vulnerable population.' It further asserts that the Government's main focus is on gender equality, 'aiming at guaranteeing equity of opportunities and [fundamental] rights, increasing their educational level and strengthening their role as educators of future generations, relatively to the formation of the personality of the Mozambican citizen."

In the social development section of the Program, eradication of absolute poverty is one of major objectives and it stresses 'importance of improved social conditions and quality of life through improved educational and health care services, occupational conditions and housing, provision of employment opportunities, promotion of gender equality, family and social harmony, and balancing ecological and environmental conditions.'

1.1.3. Poverty research

The Ministry of Planning and Finance (MIPF) conducted the first national assessment of poverty between 1997 and 1998. The survey, based on the 1996-97 Mozambique *Inquérito Nacional aos Agregados Familiares Sobre As Condições de Vida* (MIAF), or National Household Survey on Living Conditions, is the first nationally representative survey of its kind for Mozambique.

1.1.4. Action Plan for Reduction of Absolute Poverty (PARPA)

The Mozambican government has elaborated in 1999 an Action Plan for the Reduction of Absolute Poverty (PARPA), which defines the actions and priorities to be implemented at different levels and in different sectors. The PARPA was taken as the basis for the design of a poverty reduction strategy paper, of which preparation is a prerequisite for funding from the World Bank and IMF.

1.2. UN Initiatives

The United Nations in Mozambique supports 'sustainable human development seeking to empower all Mozambicans irrespective of gender, race, age, religion, political affiliation, or economic or social status, to participate in and benefit from the development process.' The UN in Mozambique works to support national development priorities through the promotion of sustainable human development, basic human rights and adherence to international conferences and conventions.

The UN system in Mozambique utilizes common development assistance framework (UNDAF), as a basis of activities mandated by the UN Secretary-General. The UNDAF is an operational planning tool, specifically designed for the 1998-2001 programming cycle, which enables the UN system to better serve the people of Mozambique by enhancing inter-agency coordination, thereby facilitating collaborative efforts with the Government, donors and NGO partners.

The UN system in Mozambique has the following three common strategic objectives.

Objective 1: Work towards increased access to and quality of basic social services and employment;

Objective 2: Create an environment that fosters sustainable human development and culture of peace; and

Objective 3: Promote sustainable management of natural resources.

The UNDAF facilitates a co-coordinated programming, consolidated information, common administrative and operational modalities and a joint resource mobilization framework. Based on their individual mandates, participating UN agencies are strategically placed within the framework to work in cooperation towards the achievement of the three strategic objectives for a common UN response to development priorities.

1.3. Issues on Informal Education

1.3.1. National policy on education

The government of Mozambique identifies the investment into all forms of education as one of top priorities for alleviating absolute poverty. It defines education as "a

fundamental right of each citizen, an instrument for the steadiness and integration of the individual in the social and economic life, as well as basic means to improve the capacity of the Country to meet development challenges."

The Government identifies education is one of the top priorities in the current Five Year Program as well. In addition, general public has a high awareness and values on primary education despite relative difficulty to send their children to school. Even in rural areas in the Study Area, education is identified as 'needs' through the survey (details in Chapter 3). Although education is still perceived as one of many needs by general population, the Government has set even higher priority to the education in the current five-year program.

Another promising move in the educational system in the Study Area is the establishment of the Institute of Primary Teaching (Instituto de Magistério Primário / IMAP) in Angonia. The institute was established to meet the growing demand for more qualified teachers and improve the general condition of primary education in Tete province. It accepts qualified candidates and experienced primary school teachers and trains them to acquire thorough pedagogical skill and knowledge. The institute is expected to play a key role in easing the shortages of qualified primary school teachers in the province. Nevertheless, though the institute is new and well equipped as funded by DANIDA, it has not produced graduates yet. Also, the financial support from DANIDA is expected to cease within the next several years. Thus, it is crucial that the institute will develop long-term management plan and find ways to sustain itself.

1.3.2. Informal education and training in the Study Area

(1) Introduction

Informal education takes place outside of schools and other forms of formal educational institutions. Informal education is a way of enhancing well-beings of individuals through a life-long learning process. Training should not be confused with or be a substitute for education. Training has much narrower, more immediate goals, related to enabling people to acquire specific skills that are usually transferable into a work or leisure activities. Education is a much broader process of inspiring human development. Many of its outcomes are not geared to any specific functions but are an inherent part of broadening the knowledge base upon which academic, social and cultural decisions may be more clearly understood or defined.

In the Study Area much emphasis should be placed on informal education, as well as training, in addition to formal education. More specifically, such training as (a) vocational training, (b) in-service training, (c) life skills training, (d) literacy training, and (e) training of trainers should be promoted to strengthen human resources bases in the

Study Area (further discussion in Chapter 3).

The most commonly practiced training in the Study Area is in the form of agricultural extension services. The agricultural extension services are important instrument of extending agricultural techniques and promoting new crops in any agricultural economies. They are usually provided by the Government and by the private sector. In the Study Area, the provision of agricultural extension is complicated by different emphasis placed by the providers having different goals and strategies. There are two major providers or two major players in extension services.

(2) Extension services

In the Study Area, extension services are provided by Tete Provincial Services of Agricultural Extension (Tete city) and the Agricultural Basic Training Center in Fonte Boa (Changara district). Mozambique Leaf Tobacco Company (MLTC) also provides training for their workers.

Extension services are provided under the guidance of the provincial extension services in coordination with the rural communities where these services are promoted. Currently five districts (Angonia, Tsangano, Moatize, Cahora-Bassa, and Changara) and Tete city are identified as priority for expansion of extension services. Chifunde, Chiuta, Mague, Zumbo, Macanga and Mutarara districts are excluded from the program due to relatively low agricultural potentials. These six districts are not considered as priority because these districts lack large-scale agricultural holdings, trained human resources to establish the agricultural extension network.

(3) Extension workers

There are 21 extension workers currently in service in the Study Area. Table 3.1 shows the allocation of the extension workers by district in Tete province.

The extension workers are designated to work directly with the communities assigned. In spite of many constraints such as lack of funding, the provincial extension services have allocated these extension service workers, and the target number of families served per extension worker is 500.

Table 3.1. Number of Extension Workers in Tete Province

Districts	Male	Female	Total
Angonia	8	-	8
Tsangano	6	1	7
Tete City	2	4	6
Study Area Total	16	5	21
Cahora-Bassa	6	2	8
Changara	8	1	9
Tete province Total	30	8	38

Source: Provincial Extension Services, Tete.

(4) Qualifications of extension workers

Typical extension workers have at least completed secondary education and attained additional courses in agriculture (pre-work course). Tete province hires graduates from the Agricultural School of Fonte Boa, the Agricultural Institutes of Chimoio and Boane and the Pedagogic Institute for Agriculture in Umbeluze as well as students who studied in foreign countries (Cuba, Germany, etc.). The Agricultural Training Centers in Tete and Angonia provides training on locally specific subjects for those who were trained outside Tete province.

(5) Working conditions

The workers are assigned to provide basic agricultural training to respective community members to improve small holding agricultural production. Although the extension workers are relatively well trained, the working conditions are not so desirable. They serve and live in the premises of the community s/he is assigned. The Government provides basic housing constructed with traditional building technique. In Angonia and Tsangano districts, some workers live in an upscale house built by a DANIDA assisted project. Salaries vary according to their academic attainment, and the experience. These values range between Mt.1,500,000 and Mt.2,000,000 per month.

(6) Constraints

1) Lack of resources

Shortages of transportation means are probably the most significant constraints for extension services to carry out their tasks. Communities in the Study Area are dispersed in the vast area poorly served by paved roads. There are 40 bicycles and six motorcycles in Tete province for use by extension services. Motorcycles are for supervisors' use only. Though the request for motor vehicles and motorcycles are submitted to the provincial government or to the Ministry of Agriculture in many occasions in the past, it is not easily fulfilled. This problem alone contributes to the inability of responding to communities' request to provide services in a timely manner.

2) Inadequate teaching methodology

Due to lack of resources available, teachers are not well trained in many parts of the Study Area. Many of them are not qualified as trained teachers but rather choose to teach in relatively better off areas. The Government's attempt to improve primary education was led to the establishment of the teacher training school in Angonia.

1.3.3. Agricultural training and education

(1) Agricultural training in Tete province

There are two types of agricultural training currently available in Tete province. One is provided by Fonte Boa Basic Agricultural School in Changara, a basic-level professional/training school as part of formal education, and two Agricultural Training Centers run by Tete Provincial Services of Agricultural Extension, located in Tete city and Angonia. These two centers also provide formal training and education.

The other type of agricultural training is informal education and is mostly through agricultural extension workers in the field. Both the public and the private sectors provide this type of education. Informal education has more significant impact to agricultural practice of farmers in the Study Area, because the training provided by the extension workers are directly related farmers' day-to-day practice. The latter introduces many new skills and knowledge. Involvement of the private sector (such as Mozambique Leaf Tobacco Company) and successful record of convincing farmers to introduce new crops (such as tobacco and paprika, for example) prove the effectiveness of use of extension workers in promoting new agricultural practice. Table 3.2 shows comparison of agricultural training and education available in Tete province.

Table 3.2. Agricultural Training and Education in Tete Province

	Informal Education		Formal Education	
Provider	Mozambique Leaf Tobacco	Provincial Services of Agricultural Extension	Agricultural Training Centers (Tete and Angonia)	Fonte Boa Basic Agricultural School (Changara)
Jurisdiction	N/A	Provincial government	Provincial government	MINED
Duration	Occasional	Occasional	Occasional	3 years
Curricula and Topics Covered	Tobacco production specific	Seasonal topics	Seasonal topics/region-specific agricultural technique, etc. for extension workers	Basic-level theoretical and practical courses in agriculture
Trainees / Students	Tobacco growing farmers	Farmers in general	Extension workers and farmers	Students who pursue career in agriculture

Source: JICA Study Team.

(2) Agricultural Training Centers in Tete and Angonia

1) Curricula

Extension education at the Agricultural Training Centers is designed for those who already have substantial field experiences in agriculture and some kind of mid-level knowledge.

Courses offered at the Agricultural Training Center in Tete and Angonia are unique on their own. Each center offers slightly different curricula in order to establish their own technical foundations that match to the unique needs of the respective region and communities. The National Directorate for Extension of the Ministry of Agriculture has established the subjects of extension education. Basic courses include extension methodology and extension communication such as use of posters, pamphlets, flip charts, manuals and books. Other courses offered are: advanced extension methodology, management, strategy for planning and courses on participative diagnosis.

Depending on the needs of communities identified by extension workers and their supervisors, the centers provide short-term courses for the extension workers and farmers who take leadership roles in their respective communities. Such short-term courses are offered during the low season. The benefits are not only for the extension workers but for the farmers as well, because once they have received training and gained know-how, the extension workers then pass on their knowledge to the farmers in practice and theory.

2) Trainers of Agricultural Training Center

Trainers of the extension services are mainly trained in the Maputo Agriculture Training Center or other training institute overseas. Trainers use various teaching technique and media such as audio-visual, textbooks, practical test samples, and field visits.

Tete province used to have many extension trainers working with the Government. They have, however, already been transferred to other provinces, or others are currently working with NGOs. One can estimate that there are about 10 qualified extension trainers identified in Tete province.

(3) Fonte Boa Basic Agricultural Schoool

1) Background

Fonte Boa Basic Agricultural School was originally established in Tsangano district. In 1981, it was relocated to the facility of the former Catholic mission in Boroma in Changara district. The school is under the jurisdiction of the Ministry of Education (MINED) and categorized as a basic-level professional/training school. MINED finances the operation cost of the school. Although the school is specialized in agricultural education, no formal connection exists with the Ministry of Agriculture.

2) School activities and courses

The school offers training courses in agriculture and cattle rising of the basic level, which corresponds to the first cycle (grade 8-10) of secondary education (ESG1). All the students stay in boarding facilities and teachers also live on the premises.

The students receive both theoretical and practical education, including field agricultural practice, though the former has more weight. Currently 212 students are enrolled at the

school. They are divided into three classes (1°, 2° and 3°). In the academic year of 2000, 24 students graduated from the school. The school has 15 teachers, of whom 10 hold a medium level position and five hold a higher level due to promotions.

3) Constraints

The school operates under very difficult conditions. The school does not have means of transportation. The living conditions of students' dormitory are poor. Foods are supplied from the Government, while they grow some vegetables in the school's field. The school receives some food ration from the World Food Program.

Sanitation conditions are not properly maintained in the school. Drinking water is pumped directly from the Zambezi river and there are no water treatment facilities available. Most buildings and living quarters are in poor conditions because of lack of tools and funds for maintenance.

Annual tuition of the study is approximately Mt.65,000, which include registration fees and some textbooks. The Government, on the other hand, pays approximately Mt.64,000,000 per student in the form of the school budget. Teacher's salaries vary between Mt.2,500,000 and Mt.5,000,000.

4) Curricula and training

The curricula at the school consist of the following: mathematics, biology, Portuguese, chemistry, physics, agriculture, forestry, orchard plantations, cattle raising and practical subjects.

The school provides combination of theoretical and practical education through lectures, using textbooks, and field practices. In the practical education, they learn such skills as sowing, plowing, harvesting, planting fruit trees, watering, etc. The typical crops they grow include tomato, lettuce, cabbage, carrots, paw-paw trees, orange trees, and mandarin. Most products in the field practice are consumed in the school. Some are sold to the neighboring communities.

5) Trainers/teachers

Teachers typically receive their training and education from the Middle Level Agricultural Institute in Chimoio, the Middle Level Pedagogical Institute of Umbeluzi and some from the Middle Level Pedagogical Institute of Beira. All teachers have attained the medium level education in agriculture or secondary school level education.

(4) Mozambique Leaf Tobacco Company

1) Overview

In the Study Area, the Mozambique Leaf Tobacco Company (MLTC)'s role in extension education should not be underestimated. The company has its own network of extension.

It is divided into four areas and each area has a supervisor who works with a team of extension workers to provide extension services to tobacco farmers. Each of the four areas is divided as follows.

Macanga Area: It comprises the whole district of Macanga and is also the location of the head office for this operation. This is the seat of the general director and is responsible for the operation of the four areas.

Nkame Area: It covers the whole area of Nkame.

Angonia Area: It covers the Moatize district and a part of Tsangano.

Luia Area: It covers Maravia, Zumbo, Chiuta and Chifunde.

2) Current activities

The extension network is staffed with a total of 36 technicians, of whom eight are stationed in Luia, nine in Macanga and 19 in the Angonia region. No female extension workers are currently employed. The company provides motorcycles to the extension workers. The activities carried out by these workers are (a) to organize tobacco farmers; (b) to teach the appropriate technique for tobacco farming; and (c) to form tobacco growers clubs and to help them market tobacco.

3) Work conditions

In each of the four areas, the company built a camp which consists of an office, warehouse, residence for supervisor and other facilities. The extension workers live in the villages where they work and each worker has a house built by the company. The extension workers work closely with tobacco farmers and provide services in line with the company objectives.

4) Curricula and training

Prior to the assignment, all extension workers are sent to a private training course, which is designed to tobacco farming.

5) Trainers

Trainers are senior-level in-house extension workers who have vast experiences in the tobacco production in the region. These trainers have a variety of education levels and experiences. Like in many other countries, teaching methodologies commonly used in conventional educational system are diductive ones. Instructors tend to transfer their knowledge in a 'one-way' manner that does not stimulate discussions and creative thinking. Classroom teaching methodologies should be more diversified and, if possible, teacher-learner relationship should be evolved to facilitator-participants relationship by adopting more participatory teaching methodologies.

1.4. Land Mines

1.4.1. Demining operations and organizations

(1) International initiatives

The 1992 Rome Peace Agreement made reference to the importance of humanitarian assistance as an integral part of peace building in Mozambique. The first agency to establish a demining operation was Norwegian People's Aid (NPA). NPA started demining in August 1993. NPA is responsible for most of demining in the central and northwestern provinces of Manica, Sofala and Tete. The primary sponsors for NPA are UNHCR and a coalition of labor unions in Norway.

HALO Trust (Hazardous Area Life-Support Organization Trust), a British agency, started its demining operation in 1994. HALO is the dominant operator in the northern provinces, namely Niassa, Nampula, Cabo Delgado and Zambezia. HALO, a coalition of three British-based NGOs, carries out its demining operation with funding from the British Overseas Development Administration (ODA). HALO, at first, implemented the first national survey of the mine situation under a subcontract for UN Office for Humanitarian Assistance Coordination (UNOHAC).

While NPA and HALO became operational, the UN's demining efforts were still unable to get started. By mid-1993, UN invited tenders for a US$12 million road clearance contract as a first step in the UN-facilitated national plan. An international consortium consisting of three private demining operators, Royal Ordnance (UK), Mechem (South Africa) and Lonrho (Mozambique), was given the task in July 1994. This initiative was criticized for the involvement of Mechem in landmine development and sales in the past conflicts in the southern Africa.

Toward the end of 1994, the Accelerated Demining Program (ADP) started its activities in the southern provinces. The ADP has been criticized by donors and agencies for its somewhat ambiguous status as a semi-governmental organization, with substantial UN support and under UN management. UN has been criticized for its slow progress in building up an effective demining capacity in Mozambique.

(2) Mozambican initiatives

1) National Mine Clearance Commission

When ONUMOZ withdrew in December 1994, there was no authority to coordinate mine clearance operation. In May 1995, the National Mine Clearance Commission (NMCC) was established. The mandates of NMCC include coordinating operations, maintaining the national database, developing strategic plans and setting procedures for prioritization. The new body included the representatives of seven ministries, with the Minister of

Foreign Affairs and Cooperation as its president. NMCC, however, appeared to be incapable to develop the capacity to set national priorities. Along with the UN's failure to establish an effective demining capacity in Mozambique, NMCC's heavily centralized decision-making mechanism hindered progress of demining operation.

2) National Demining Institute (NDI)

In November 1998, the National Demining Institute (NDI), a new para-statal institute, was established to replace NMCC. NDI was intended to enjoy larger autonomy from ministerial control. The key achievement was establishment of a national demining fund, FUNAD, which is closely related to the establishment of NDI. NDI's mission is to fulfill the Government's mandate in coordinating and focusing demining actions by setting national priorities, developing a functional information management system, monitoring quality assurance and ensuring cost effective use of funding.

Donors are still skeptical about the effectiveness of NDI, because the new funding mechanism weakens the control of donors. Also many donors are doubtful about NDI's ability to establish authority over the demining action. These views are identified as reflections of NDI's own problem in credibility and transparency in the past.

3) Unified Mozambican Army (Armed Forces)

The Government started mine clearance during 1993 and in 1994. The new joint defense forces received some demining training from the French military. Their efforts of demining operation are not as active as other players.

1.4.2. Level one survey

From early 1998, Canada started to respond to the needs for a more comprehensive level one survey (landmine database) in Mozambique. Canada established a dialogue with the Survey Action Center (SAC), a consortium set up by some of the world's key humanitarian demining action agencies to implement socio-economic level one surveys in the world. The Canadian International Demining Center (CIDC) received a funding from the Canadian International Development Agency (CIDA). The survey is still on going and expected to complete in the fall of 2001.

1.4.3. Incidence of landmine related accidents

Early estimates of landmines indicated that the Country was one of most severely mine-affected countries in the world. Estimates of the scope of the problem have continuously modified, and currently there is a wide consensus that the mine problem in Mozambique is far more manageable than what was once predicted in the early 1990s.

A frequently used indicator of the impact of landmines at the national level has been accident statistics, which capture one central component of the costs to the population.

As discussed above, accident rates are one central issue at the 'emergency stage' of reconstruction, but are less helpful in the establishment of mid- and long-term priorities. Reports of mine accidents from the Provincial Police of Tete, Handicap International (HI) and the national mine-awareness program indicate that there were significant reductions of landmine accidents from 1995 to 1999 (Table 3.3). Although the figures shown are highly inaccurate, they illustrate a picture of socio-economic impact of mine problems.

Table 3.3. Estimated Number of Mine Victims, 1995-99

Year	National	Tete		
		Mortality	Injury	Total
1995	600-720 (rough estimate)	n/a	n/a	n/a
1996	126 (reports from 6 provinces)	6	3	9
1997	69 (from 7 provinces)	5	3	8
1998	83 (all 10 provinces)	4	4	8
1999	n/a	3	7	10

Source: Handicap International and Office of Provincial Police Commander.

In the Study Area, there were 35 landmine related accidents reported between 1996 and 1999. These accidents are reported in the districts of Angonia, Tsangano, Moatize and Chifunde. Table 3.4 shows the breakdown of the accidents.

Table 3.4. Landmine Accidents in the Study Area, 1996-2000

Year	Angonia		Tsangano		Moatize		Chifunde		Total
	Mortality	Injury	Mortality	Injury	Mortality	Injury	Mortality	Injury	
1996	4	1	0	0	2	1	0	1	9
1997	3	3	1	0	0	0	1	0	8
1998	1	1	0	1	3	2	0	0	8
1999	1	2	0	1	2	3	0	1	10
Total	9	7	1	2	7	6	1	2	35

Source: Office of Provincial Police Commander.

The number of landmine accidents is at similar level in recent years, although the mortality is declining. Of 18 cases of mortality occurred in the period, 16 accidents were reported in Moatize and Angonia because of intensive use of landmines during the war, and relatively higher population density compared to other districts. Although the mortality declined by 50% during the four years period, the socio-economic impact of landmine is still not negligible in the Study Area.

1.4.4. Demining operation in Tete

In Tete province, the Norwegian Peoples Aid (NPA) is the only authorized agency capable of demining. There are some private contractors (i.e. Mechem of SA and Lonrho of the Mozambique-US), which are reputable because of their reliable operations in Mozambique,

Angola and Bosnia.

In February 1994, a South African company Mechem and Zimbabwean Mine-Tech jointly took on a large commercial contract to clear parts of the Cohora Bassa power line. Humanitarian agencies also continue to subcontract commercial companies for demining. The German development agency (GTZ) has hired Mine-Tech for the demining component of its integrated development projects in Manica province. UNICEF and UNHCR have also contracted Mine-Tech. Special Clearance Services (SCS), another Zimbabwean company, has been contracted by humanitarian agencies, including UNICEF, EU and the World Bank. The technical quality of such commercial demining operation is unquestionable, but the question remains how commercial companies execute humanitarian priorities, and what measures they take to ensure community relationship as well as to maximize impact.

According to the UN guidelines, commercial facilities such as main roads, ports, power lines, railways, and plots designated to commercial uses are excluded from humanitarian operation. To accelerate demining operations, the Government of Mozambique needs to institutionalize cost recovery schemes from beneficiaries.

1.4.5. Awareness education

Handicap International (HI) started mine awareness campaign for both rural population and returning refugees. HI was in charge of mine-awareness education in the Country until January 2000. Partners of the program were the National Red Cross and the Ministry of Education, in addition to a range of other agencies at different levels. The program was based on district level mine-awareness committees with one HI coordinator at the provincial level.

1.4.6. Other important issues on demining operation

(1) Short-coming of UN coordination for demining operation

At the initial stage of demining operation, it was dealt with by the Cease-fire Commission (CCF), which included representatives of both parties of conflict — FRELIMO and RENAMO. The arrangement was a major constraint to the demining efforts as both parties were hesitant to the idea of humanitarian demining operation.

Initially, the priority of the operation was to open up roads in order to facilitate the repatriation of refugees and internally displaced persons (IDPs) as well as to make possible humanitarian aid delivery. Such an emergency-oriented focus led to a failure in realizing that demining would be an enduring undertaking in Mozambique. Little attention was paid to needs of developing comprehensive data gathering and establishing sustainable indigenous demining capacity.

Aid flows to support demining operation have divided into two NGOs capable of the operation and an UN-backed implementing unit. The UN expects to be converted to a national capacity. This eventually led to the failure to establish a functioning central coordination mechanism.

(2) False assumption that mine problems is almost over

The accident data and other assessments of the mine problem in Mozambique have led some analysts to conclude that the most urgent mine problems will be effectively dealt with by the year 2005 to 2007. Such a conclusion might appear overly optimistic, given the number of mined areas that remain in Mozambique. However, this indicates how the issue is undergoing redefinition, which will lead to its priority lower in the Country's reconstruction challenges than what was anticipated previously. This view underlines the position of demining operators. Until now, funding for mine clearing operation is generous, but as the landmine problems are redefined as stated above, operators may run into severe funding problems given that operational cost will remain high. Landmines continue to pose a serious problem for many communities as a major threat for rebuilding and maintaining important infrastructure. There will be a need for substantial demining capacity in many years to come.

(3) Absence of reliable data on high priority minefields

The problem with accurate data gathering has served to illuminate how difficult it can be to find representative ways to describe the mine problem. The most quoted indicator of the mine problem has been 'number of mines'. While early estimates were in the range of 2 to 3 million mines, these numbers were soon modified to a few hundred thousand at the most. Overall estimates of the number of mines are useless as an indicator of the problem. Given currently applied demining techniques, such estimates of numbers describe little of the magnitude and impacts of the problem, as 100 mines placed to instigate fear amongst civilians could be much more of a problem than 10,000,000 mines placed inside a fenced area, which does not have an important value for the local population.

The absence of reliable data on high priority minefields, compounded by the absence of a central coordination mechanism, cause slow response in the high priority minefields and waste of scarce resources to areas with low priority.

As a rule, information on mine needs to be gathered to district police commissioners, but there is no centralized database of minefields in the Country. Currently only the HALO survey combined with on-going CIDC level one survey are available database, but both have some shortcomings in scope and data collection methodologies.

(4) Lack of cost recovery mechanism

Because the organizations listed above only work based on humanitarian needs, some important infrastructure has left uncleared with landmine. According to the UN criteria, such infrastructures as power lines, major roads, railways, ports and private property are excluded from humanitarian demining operation. Infrastructure serves vast population including the private sector. Unless otherwise the Mozambican government finds generous donors to support indiscriminately demining operation, lack of cost recovery mechanism hinders progress in demining operation of industrial infrastructure.

(5) Proven ability of commercial demining operators

Because of the intensity of the demining operation in the past few years, operational capacity of demining operator is quite high. One distinctive aspect of Mozambique demining operation is that commercial demining companies took significant part of the entire operation. By 1997, as much as 45% of the total funding for demining operation had gone through commercial companies. Although the general trend is declining, 26% to 30% of total funding was disbursed through private companies between 1994 and 2001.

Chapter 2. Socio-economic Survey (Participatory Survey)

2.1. Objective and Survey Framework

2.1.1. Overview

The Study Team conducted a socio-economic survey (hereafter referred to as the Survey) between October 2000 and February 2001. In the subsequent fieldwork in May and June, 2001, brief field visits by the JICA Study Team were conducted to collect additional information for the Study. In the following sections, the detail of the Survey is discussed.

2.1.2. Objectives of the survey

The Survey has the following four objectives:

(1) To collect adequate base-line data, using participatory methodology, which complement the gap between statistics and the reality of the communities in the Study Area;

(2) To have possible control groups against which progress can be measured, particularly when the long-term effects of the Study are to be measured in the future;

(3) To identify problems and felt needs of the communities to further develop specific strategies attempting to improve socio-economic conditions of the communities to be included in the Master Plan Study; and

(4) To formulate a list of priority programs/projects at the community-level through a series of discussions between the communities and the Study Team.

To response to anticipated changes in line with development programs proposed by the Study, a special attention was paid to such issues as gender and effects of the civil war in the Study Area.

2.1.3. Framework of the survey

In the subsequent sections, the detail of the survey such as data collection methodology, and analysis are discussed. Based on the preliminary study, a set of framework was established in order to elicit knowledge of farmers and to ensure effective use of such knowledge into planning process.

According to the current poverty reduction strategy paper of Mozambique, the following aspects illustrate the magnitude of poverty and its distribution among the various socio-economic groups. These are the characteristics of the poor in the Study Area. They provide a guideline to learn about the heterogeneous nature of the community in the Study Area as well. Therefore, the analysis of the Survey proceeds using the following as a framework.

(1) Demographic characteristics

Poor people tend to live in larger households than the non-poor. The poor have more children than the non-poor and start having children earlier. As poor households have approximately twice the number of dependants as the non-poor, their dependency rates are substantially higher.

(2) Agriculture and land ownership

Virtually all the rural households in the Study Area have at least one plot of land. The poor and the non-poor have roughly the same amount of land per household, although the non-poor tends to use more equipment (inputs) and have more irrigated land than the poor. In general, however, people use very little equipment and inputs and this is reflected in low agricultural productivity throughout the Study Area. Maize is the most common crop for both the poor and the non-poor.

(3) Employment

While the urban non-poor tend to work more for payment than the rural poor, there is no difference in this respect. Here it is not employment as such but other factors such as the wage level and the number of dependants, which are the main determinants of poverty. In rural areas almost everyone works in agriculture, but particularly the poor. In urban areas, less than one third of the non-poor work in agriculture and this group is represented more in the "commerce and services" and "public services" sectors.

(4) Education

There is a strong relationship between education and poverty. However, difference between the poor and the non-poor are smaller than gender differences and disparities by area of residence. That is, women and rural areas are worse off. This means that a poor child in an urban area has a greater probability of attending school than a non-poor child in a rural area. Moreover, in rural areas a poor boy has a stronger probability of attending school than a non-poor girl. There is also a strong relationship between the education of the head of household and the poverty of the household. Families whose head has a better education tend to be less poor. This relationship is especially strong in urban areas and in female households.

(5) Health and nutrition

In rural areas, access to health services by the poor and the non-poor is roughly the same. In urban areas, however, the non-poor have better formal health assistance than the poor. The proportion of children aged 6-11 months who have not been immunized is substantially higher in rural than in urban areas. Chronic malnutrition among children under five is also higher in rural areas.

(6) Access to basic social services

In rural areas there is no substantial difference between the poor and the non-poor in terms of type of water source and sanitation. Most people depend on wells, rivers, lakes and latrines. In urban areas, however, the non-poor tend to have access to piped water and a health network, whereas the poor depend more on standpipes and public wells. In rural areas there is little difference between the poor and the non-poor in terms of distance to various services (e.g., school, doctor, nurse, market, telephone, etc.).

2.1.4. Use of participatory methodology

The Study Team employed what may be called participatory action research (PAR) for the socio-economic survey. The PAR has origins in the work of social scientists from developing countries. Various inquiry techniques such as rapid appraisal or rural appraisal (RA or RRA) are of the PAR. Influenced by such authors as Paulo Freire, Orlando Fals-Borda and Mohammad Anisur Rahman, the "basic ideology of the PAR is that self-conscious people, those who are currently poor and oppressed, will transform their environment by their own praxis". The PAR seeks to involve the poor or those traditionally considered the objects of research as more active participants in the question-making, analysis and data gathering aspects of research.

2.2. Integrating Participatory Methodology into Development Study

2.2.1. Overview

Many development efforts have failed because they were often driven from outside with little or no consultation with the poor, local institutions or governments. Assumption of participatory planning is that for sustainable development to occur, people must be central to the development effort. It is believed that participatory development is a process of collaborative problem solving and reflection that empowers individuals to transform their environment.

The challenge of the Study is how participatory, grass-roots or bottom-up approach can be effectively integrated into the policy-oriented regional development planning.

A conventional macro planning approach, also referred as top-down approach, attempts to set goals and objectives by analyzing the current situations, clarify macro-level policy and strategy, and provide institutional arrangements to implement the policy. Its focus is to bring positive change through creating more favorable environments to investors. The conventional approach employs policy dialogue to policy makers and local administrators, as they are the key stakes to implement the project. The institutional condition, however, does not bring such a positive environment as, in many cases, the capacity of local administration as well as policy makers are not sufficient to fulfill such prerequisites.

In contrast, a grass-roots planning approach, also referred as a bottom-up or participatory approach, attempts to understand felt needs of communities while an inquiry process takes place at the close proximate of the communities themselves. Its focus is to bring a positive change through providing direct interventions, which aim to affect the root-cause of the problem it identifies.

Table 3.5. Comparison of Top-Down and Bottom-Up Approaches in Planning

Approaches / Domain	Top-Down Approach	Bottom-Up Approach
Typical implementing organizations	Government/aid agencies	Local communities/local governments
Areas applied	Relatively large areas	Relatively small areas
Typical beneficiaries	(depends)	(depends)
Project's relation to outside areas	Strong (outward orientation)	Weak (inward orientation)
Needs to be fulfilled	Needs of national policy	Needs of local communities
Feasibility	(depends)	Realistic/attainable
Project size	Large/non-participatory	Small/participatory
Typical process	Blueprint approach	Learning process approach
Resource input and use	Reliance on outside resources	Utilization/revitalization of existing resources
Technology used	High-tech/special	Conventional/traditional
Anticipated timeframe	Short	Long
Investment scale	Capital-intensive	Labor-intensive

Source: Chambers (1980) adapted by JICA Study Team.

In addition, the grass-roots approach looks at equity and fairness through order-made interventions, which inherently take effects in a discriminatory manner. The grass-roots approach has inherent limitations that proposed interventions do not reach every single household in the target population. Table 3.5 shows the comparison between the conventional macro planning approach and the participatory approach.

There are many attempts to integrate such two different approaches in development studies. The Study Team complements the two different approaches' strength and weakness to bring more fair and equitable outcomes from the Study.

2.2.2. Use of participatory action research (PAR) in development planning

Participatory planning employs a family of approaches and techniques to enable the poor, and institutes of government to better understand, plan and define their development efforts. It employs such methodologies as problem solving, game and drawing to illustrate the current situations. Trained facilitators organize workshops with a wide range of stakeholders: the poor, NGOs, and the private sector. The Study Team employs

different participatory techniques, undertake research to disseminate findings and report them using workshops. It is a process of wakening and self-realization. It empowers the community directly affected by the project.

(1) Participatory methodologies

The term 'participatory rural appraisal (PRA)' was first coined by Robert Chambers of the University of Sussex in the mid 1980's. This approach refers to as a "family of approaches and methods to enable local people to share, enhance and analyze their knowledge of life and conditions, to plan and to act". It was introduced in response to: (a) biased perceptions based on "rural development tours" (the brief rural visit by the urban-based professional), and (b) the defects and high costs of large-scale questionnaire surveys. The technique came to be called rapid rural appraisal (RRA).

Participatory learning and action (PLA) is considered the next generation of PRA and seeks to involve more explicitly local people and stakeholders in analyzing, sharing and taking actions on issues that affect them.

An array of participatory tools have often been associated with the PRA and the PLA that seek to involve stakeholders in the process of analysis such as seasonal calendars (interpreting how their life varied over the year), social and historical timelines, matrices, Venn diagrams, body mapping, visualizations, etc. Other examples include semi-structured interview, participatory mapping, transect walks (walking with beneficiaries through the areas that they were familiar with and going to various places near the community they live and discussing with them about issues that related to their lives), and matrix ranking techniques.

These tools can be applied to all stages of the project cycle from project planning to monitoring and evaluation. They are also very effective in facilitating meetings, focus groups discussions or small workshops. Like the RA method, it owes much to the traditions and methods of participatory research, applied anthropology, and field research on farming systems. In addition to above-mentioned techniques, there are many techniques that are applied in inquiry.

(2) Fundamental ideas behind participatory methodologies

A fundamental idea behind use of these techniques is that local people are mobilized not only as a target of inquiry, but rather as those who inquire them. They are enabled first to share, enhance, and analyze their own knowledge of lives and conditions, and then to plan and to act accordingly.

Participatory methodologies were designed to fill a gap between what were "quick and dirty" and "long and dirty" analyses, where dirty referred to cost-effectiveness. Formal research methods may have scientific validity, but they provide too little relevant

information, too late, at too high a cost. These participatory methodologies are attractive because they are less costly and quicker than formal methods of investigation and holds out the promise that they can provide a different kind of information from the formal surveys. It is notably valuable when an interpretive understanding of a situation is required. Formal research methods can fall down when the object of the inquiry cannot be easily quantified.

In the RA and the RRA, information is generally elicited and extracted by outsiders as part of a process of data gathering; in the PRA it is generally owned and shared by local people, as part of a process of their empowerment.

(3) Limitations of RA

The RA's advantages of cost, speed, and type of information come with some equally large limitations as follows.

1) The validity of the information gained can be questioned. There is no guarantee of attaining sound findings. One should be careful of how much random variation there is in the result. As such, numerous factors can contribute to low reliability of information.
2) Rapid appraisal does not employ probability sampling and therefore may be criticized for producing results that are unrepresentative. If someone asks, "to whom exactly does this conclusion apply?" rapid appraisal may not provide the answer. Is it 50 % of the population or 70 % of the population? Rapid appraisal may not provide reliable information on this.
3) Individual judgments can affect the conduct of the inquiry substantially. During the process, substantial amount of judgments are required to employ rapid appraisal effectively because there is much flexibility in the approach. This flexibility can help investigators to achieve depth, but it comes at the price of potential bias or distortion. The risk is that investigators hear only what they want to hear.
4) Qualitative information can be very hard to record, code, and analyze. How will the information collected on tapes, in diaries, or through maps be presented? Clearly, anthropological approaches may be effective methods to deal with this problem, and a lot can be learned from them.

(4) Things to consider in using RA methodology

Because of the weakness listed above, four issues can enhance the validity of rapid-appraisal findings.

1) Investigators should have a sound conceptual framework for the investigation before they start.

2) A variety of techniques should be employed. The RA doesn't provide data from which generalizations can be made about populations. It helps to enrich the picture, but it does not provide information about the extent or pervasiveness of a phenomenon. For example, it may illustrate that rural women are being deterred from using certain birth control methods, but it can not tell how many are being deterred for a particular reason.
3) Information gained through one RA exercise should be crosschecked with another. The third weakness of RA is that its findings often lack credibility. Decision makers often prefer precision to a rich description. It cannot be said that is right. It is actually thought that it is frequently wrong, because often the precision that decision makers gain is a false sense of precision.
4) Investigators should maintain high standards of self-criticism.

(5) Strengths of RA methodology

Despite its limitations listed above, the RA has clear advantages over conventional inquiry methodologies in the following conditions: (a) when description is all that is needed; (b) when what is sought is an understanding of attitudes or motivations; (c) when quantified data need to be interpreted; and finally, (d) when the aim of the investigation is to generate suggestions or recommendations.

There have been many classic examples in social surveys in developing countries. When there is a problem to solve, the RA's emphasis on contacting people concerned directly offers investigators a solution. If designed in structured and careful way, the RA makes conclusion available fairly quickly. In addition, the RA is useful when there is a need to develop questions for a subsequent formal study. Frequently, formal and informal methods can complement usefully each other.

The RA process involves substantial input from beneficiaries (the target group) in assessing current status and developing strategies. They ask beneficiaries what would make them better off in their lives, and how should assistance be applied to reach the agreed consensus.

(6) Application of RA methodology in projects

The RA can be applied in both small and large-scale projects. If it is applied to a large-scale project, the process may result in a substantial enrichment of the picture planned. Beneficiaries of the project would better accept it if findings from such a study is fully integrated in the strategy.

A benefit of using participatory research is substantial if it is undertaken properly. It would be able to reach out to target groups. The result may be a project that would be far more than the sum of its components. It produces a new kind of product and brings about

a changed set of relationships among the stakeholders. The process, however, takes substantially long time and could not be cheap.

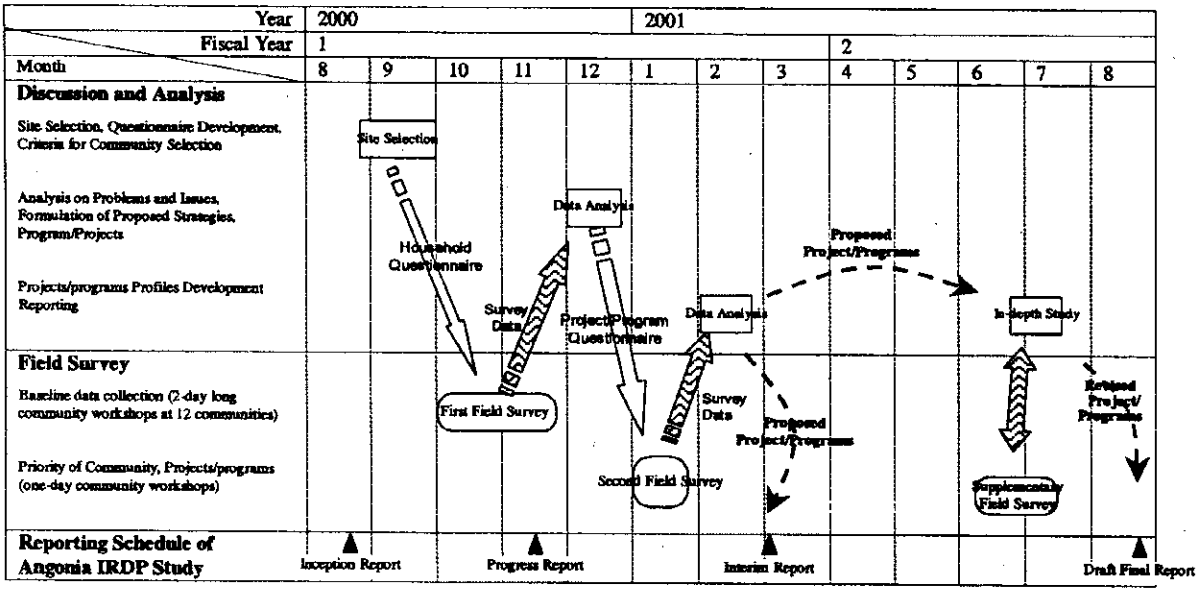
Particularly, if the PRA is chosen for its method, it is not very rapid. The duration of a typical PRA method can be far longer than other research methodologies. If it is managed properly, however, it can expect a distinct advantage that the project becomes immediately effective and does not need to go through the usual preparation period. Furthermore, while the project planners lose a degree of control, villagers gain an enormous amount of ownership. This confirms that the PRA is not mere research methodology, but it is a process to empower the beneficiaries.

2.3. Socio-Economic Survey in Angonia IRDP Study

2.3.1. Survey schedule

The socio-economic survey consists of six different activities: (1) site selection, (2) first field survey, (3) data analysis, (4) second field survey, and (5) data analysis and reporting. The schedule of these five activities is incorporated with the overall schedule of the Study (Figure 3.1).

Figure 3.1. Socio-economic Survey Schedule



Additional field visits were conducted between June and July 2001 to collect and complement more detailed data from selected communities to further facilitate project development and in-depth studies.

2.3.2. Questionnaires

The Study Team used two separate questionnaires: household questionnaire and projects/programs questionnaire.

(1) Household questionnaire

The household questionnaire is a means of collecting baseline data in the initial field survey period. The following eleven major categories are included. They are:

a) General information (demography, narrative history, village map, ethnicity, language and religion);
b) Agricultural practice (land holding, land use, variety and yield, cropping pattern, agricultural inputs and irrigation etc.);
c) Economic conditions (income sources, fame gate prices of agriproducts etc.);
d) Living conditions (water and sanitation, electricity, housing, healthcare, etc.);
e) Social activities (cooperatives and/or other social organizations);
f) Technical and financial assistance from outside (various government supports and extension services);
g) Aspiration (development priorities);
h) Land ownership;
i) Health;
j) Community structure; and
k) Education.

(2) Project questionnaire

The projects/programs questionnaire was used during the second field survey period. It was used as a tool to identify priorities of the communities. The questionnaire is designed to provide community members to look into their own resources rather than to rely on outside resources. It is to initiate villagers to take appropriate actions toward their identified needs by themselves. The inquiry process helps the community members develop and propose projects/programs of their own. The questionnaire covers the following questions in seven categories:

a) General information (district, name of community, projects/programs names),
b) Brief description of the projects/programs (what kind of activities, reasons why it is necessary, urgency, and degree of needs),
c) Expected effects and/or outcomes (who benefits the most, what are the tangible benefits, expected changes brought to the community),
d) Possible in-kind contribution from the community (resources, skills and knowledge),
e) Resources needed from outside (strategies to obtain such resources),
f) Participants, and
g) Expectation (from who, what do you expect).

(3) In-depth studies

After the initial survey was completed, additional field visits were conducted between June and July 2001 to proceed with the project formulation and in-depth studies.

2.3.3. Survey method

In the Survey, a variety of inquiry techniques of the RA were employed. Examples include 'field observation', 'town meeting' and 'individual interview'. Use of questionnaire guided the survey team as to how to pose questions and the order of the questions. Therefore the questionnaire enabled certain structured inquires consistent for all twelve villages surveyed.

(1) Field observations

Field observations represent one of qualitative research methodologies. Observation method focuses on specified categories of human behaviors. Observations function well as a means to flesh out quantitative research that would otherwise do little more than list numerical data. Regardless of the group or culture under study, the observer/researcher studies a set of individuals in their natural setting as opposed to a clinical setting. This type of research is also known as a fieldwork.

(2) Town meeting

A town meeting is a form of gathering, which anyone who would like to participate can attend. It provides an open forum for discussion and dialogue. Any community members (including women and children) are allowed to speak up their opinions. A trained facilitator facilitates the meeting by posing questionnaire questions. It is used as a primary inquiry technique for the initial field visit of the survey.

(3) Individual interviews

Some social groups, such as women, tend to keep distance from a large group meeting, such as the town meeting. Special attention should be paid to maximize participation of women in the community. Supplementary individual interviews were conducted. Although the number of interviewees was limited, they provided useful and vivid picture of lives of rural communities.

(4) Research assistants

Because the Study Area is located in the close proximate of the borders with Zambia, Malawi and Zimbabwe, the ethnic makeup, distribution of languages, and settlement pattern of tribal groups are complex. Migration movements (both external and internal) during the civil war and subsequent resettlements also made it even more complex. In order to facilitate the survey, the Study Team employed several research assistants who

have experiences in the participatory action research (PAR). All of them are fluent at least in one of the local languages in addition to Portuguese and English to ensure smooth communications with community members.

2.3.4. Village selection

The Study Team selected 12 communities, two each in six districts, to conduct the survey. Criteria of selecting the villages are as follows:

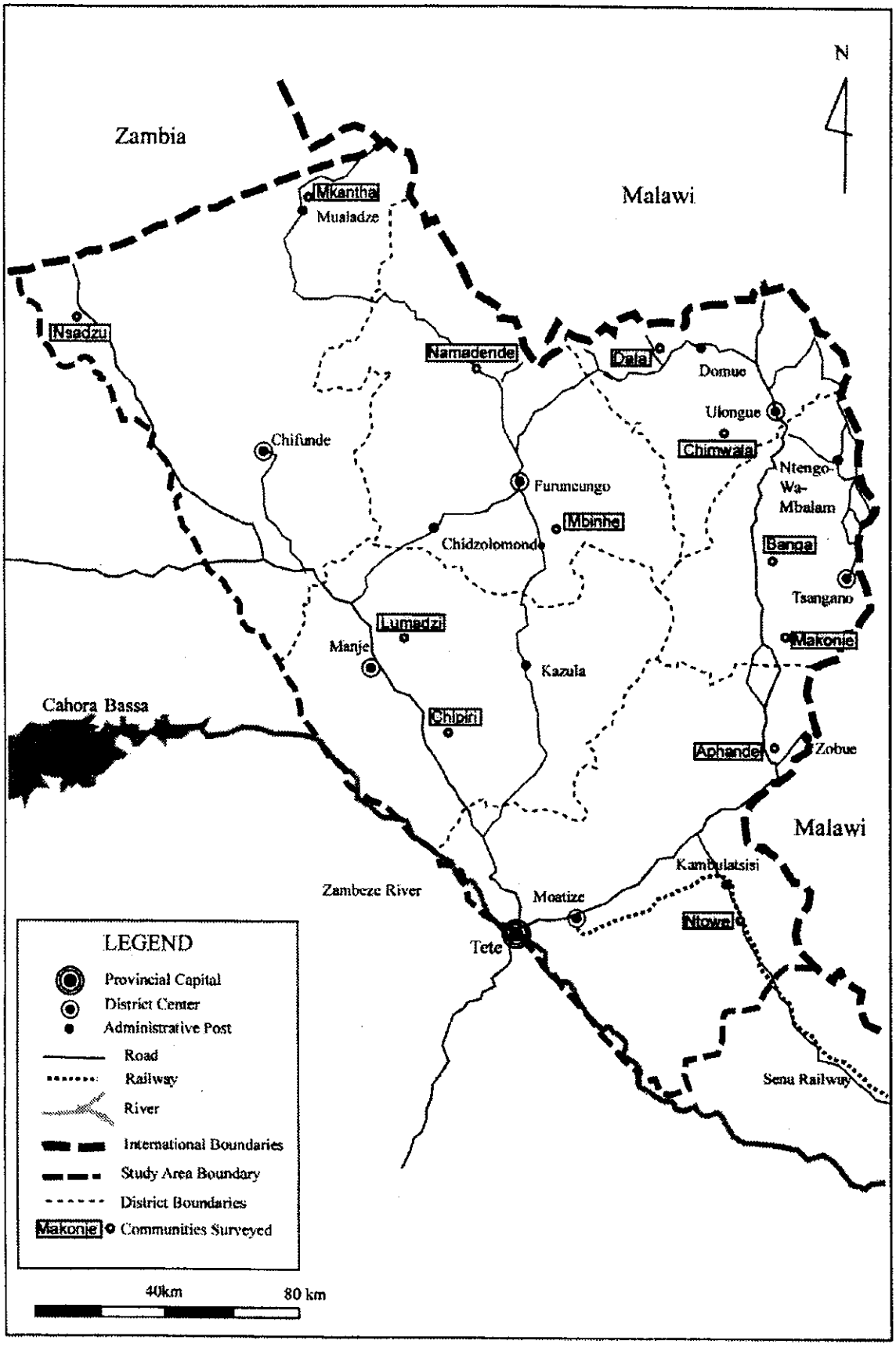
a) Two communities each that may represent socio-economic conditions of respective districts;
b) Well-beings of the communities are affected by development problems and constraints as their potentials are not fully utilized;
c) The community members are willing to deal with these problems and constraints to improve well-beings of the communities;
d) Currently, no NGOs are in operation in the communities;
e) The survey team is allowed to visit the village and to hold a series of meetings and workshops with villagers; and
f) The community members are willing to cooperate with the survey team members and participate in the meeting and workshop organized by the team.

Using the criteria above, the survey team requested District Administrators (DAs) help assist the team to select communities they conduct the survey. With the help from DAs, the team selected 12 communities, two each from the six districts. Table 3.6 gives the list of communities surveyed and the schedule of the field visits. Figure 3.2 indicates the locations of the twelve communities surveyed.

Table 3.6. List of Communities Surveyed

No.	District	Name of Community	Initial Visit (2000)	Second Visit (2001)	Note
1	Angonia	Chimwara	11/2-4	2/2	
2		Dala	10/28-31	2/1	
3	Chifunde	Mkantha	10/16-18	1/22	
4		Nsadzo	10/12-14	1/16	
5	Chiuta	Chipiri	10/6-8	1/31	3 teams for 2nd visit
6		Lumadzi	10/3-5	1/31	3 teams for 2nd visit
7	Macanga	Mbinhe	10/24-26	1/24	
8		Namadende	10/20-23	1/23	
9	Moatize	Ntowe	11/18-21	2/7	
10		Aphende	11/15-17	2/3	
11	Tsangano	Banga	11/10-13	1/31	3 teams for 2nd visit
12		Makonje	11/7-9	1/30	

Figure 3.2. Location of Communities Surveyed (Socio-economic Survey)



2.4. Survey Results

The initial field survey was conducted between October 3 and November 23, spending at least two days in each community. In the following section, a summary of the survey results is presented.

2.4.1. Demographic characteristics

The demography of the 12 communities surveyed is based on what community members reported to the survey team. All the data are based on the 1997 National Survey, according to the community leaders.

(1) Community size

The size of the communities surveyed varies significantly. Banga in Tsangano has the largest population of 28,720. Mbinhe, Macanga has only 900. Average number of members in a household is 4.0 to 5.0 (Table 3.7).

Table 3.7. Population and Number of Households

District	Community	Population			Household	
		Total	Male	Female	Total	Ave. no. per household
Angonia	Chimwara	3,275	1,529	1,746	818	4.0
	Dala	11,000	5,315	5,687	2,750	4.0
Chifunde	Mkantha	7,750	3,647	4,103	1,550	5.0
	Nsadzo	9,000	4,425	4,575	1,800	5.0
Chiuta	Chipiri	2,787	1,531	1,256	557	4.8
	Lumadzi	2,051	1,036	1,015	410	5.0
Macanga	Mbinhe	900	437	464	180	5.0
	Namadende	4,855	2,378	2,477	1,193	4.1
Moatize	Ntowe	1,327	617	710	331	4.0
	Aphende	5,900	2,390	3,510	1,180	5.0
Tsangano	Banga	28,720	13,584	15,136	6,571	4.3
	Makonje	12,705	6,333	6,372	2,541	5.0

Source: JICA Study Team.

All the twelve communities surveyed are on 'community' level, two levels lower than 'administrative post'. Though the 12 communities surveyed are categorized in the same level within the hierarchy of administration, the population of these communities varies widely. Administrative difficulties faced by local governing entities should vary also widely. Particularly, such imbalanced population distribution seems to be a constraint to the provision of efficient public services such as health post and schools (discussed in section 3.4.3).

(2) Ethnicity, language and religion

The makeup of the ethnicity, languages and religions are complicated in the Study Area. There are five main ethnic groups: Machewa, Chewa, Mtumba, , Ngoni, and Nhungue. Five local languages: namely Chichewa, Nhungwe, Nsenga, Nhungue, and Nhanja, are spoken in addition to Portuguese and English in the Study Area. Among the five local languages, Chichewa is the most widely spoken local language except in the southeast part of the Study Area. In the latter area, Nhungue is the dominant local language.

Portuguese is the national language of Mozambique. It is exclusively taught and used in the public education. English is also widely spoken in the Study Area because some young population received their primary education and training in the refugee camps in the neighboring English-speaking countries during the civil war.

All the 12 communities surveyed said their religion is one or more sects of Christianity. Table 3.8 shows the distribution of ethnic groups, religions and languages spoken in communities surveyed.

Table 3.8. Tribal Groups, Languages and Religion of Communities Surveyed

District	Communities	Tribal Group	Language Spoken			Religion
			Primary	Secondary	Other	
Angonia	Chimwara	Mtumba	Chichewa	Portuguese	-	Christian
	Dala	Ngon	Chichewa	Portuguese	-	Catholic, Africa, Jehovah's Witness
Chifunde	Mkantha	Machewa	Chichewa	Portuguese	English	Christian
	Nsadzo	Machewa	Chichewa	Portuguese	Nsenga, English & Nhungwe	Catholic, Zion, Dutch, African & CCAP
Chiuta	Chipiri	Machewa	Chichewa	Portuguese	Nhungwe	Catholic, Nazarene
	Lumadzi	Machewa	Chichewa	Portuguese	-	Zion, African Msondozi
Macanga	Mbinhe	Chewa	Chichewa	Portuguese	-	Christian
	Namadende	Chewa	Chichewa	Portuguese	Nhungwe	Christian
Moatize	Ntowe	Nhungwe	Nhungwe	Nhanja	Portuguese	Christian
	Amphande	Chewa	Chichewa	Nhungwe	-	Christian
Tsangano	Banga	Ngoni	Chichewa	Portuguese	-	Catholic, CCAP
	Makonje	Chewa	Chichewa	Nhungwe	Portuguese	Christina

Source: JICA Study Team.

2.4.2. Land ownership and agriculture

(1) Land ownership

All the 12 communities indicated that all of community members had their own farmland. There is, however, no legal framework to assure and prove the ownership. There is neither title nor proof of legal documents. According to the communities, traditional

chiefs play an important role in allocating community members land for harvest. When the community members need to expand their farmland, they need to consult with the traditional chief to see if he allocates a new parcel of land. Land is generally free of cost for the community members. Land is usually allocated at the community members' request, but the one with good conditions is scarce.

In the communities surveyed, landholding ranges from 1.0 ha to 22 ha (Table 3.9). Although there always are small landholders in all the communities, two communities in Chiuta district are generally smallest, while Dala in Angonia and Mkantha in Chifunde are the largest. All the twelve communities surveyed said the purposes of cultivating crops were for self-consumption and for sale in the market. The production, however, does not meet both of the purposes.

Table 3.9. Agricultural Landholding of Communities Surveyed

District	Name of Community	Farmland Holding (ha)	Land Title	Cultivated Land (ha)	Approx. % of total land holding	Purpose of Cultivating Crops	Production Meeting the Purpose?
Chiuta	Lumadzi	1.0-2.0	Owned	1.0-2.0	25%	Self/Sale	No
	Chipiri	1.0 ave.	Owned	1.0-2.0	100%	Self/Sale	No
Chifunde	Nsadzo	1.0-10.0	Owned	1.0-10.0	75%	Self/Sale	No
	Mkantha	7.0	Owned	4.0	75%	Self/Sale	No
Macanga	Namadende	4.0	Owned	3.0	75%	Self/Sale	No
	Mbinhe	1.0-6.0	Owned	1.0-6.0	100%	Self/Sale	No
Angonia	Dala	1.0-22.0	Owned	1.0-15.0	75%	Self/Sale	No
	Chimwara	4.0	Owned	3.0	75%	Self/Sale	No
Tsangano	Makonje	1.0-4.0	Owned	1.0-4.0	75%	Self/Sale	No
	Banga	1.0-5.0	Owned	1.0-5.0	75%	Self/Sale	No
Moatize	Aphende	6.0	Owned	4.0	75%	Self/Sale	No
	Ntowe	1.0-5.0	Owned	1.0-5.0	75%	Self/Sale	No

Source: JICA Study Team.

In Lumadzi, an average household owns 1.0 to 2.0 ha of land for agriculture. According to the community members, however, only 25% of the land owned is cultivated. The reasons for not being able to cultivate all the landholding are lack of water and problems related to insufficient drainages.

(2) Agricultural production

All the 12 communities identified maize as their main crop. Other crops include groundnuts, soybeans, sweet potato, pumpkin, cassava, and potato. Ntowe community in the District of Moatize listed millet as their main crop.

Maize and tobacco are identified as main cash crops. Of the 12 communities surveyed eight communities produces tobacco. Irish potato is also one of important cash crops. According to the community members, they would like to diversify their farm products.

They also would like to use hybrid seeds in order to increase the productivity (Table 3.10).

Table 3.10. Crops, Cash Crops and Prospective Crops in the Study Area

District	Community	Main Crops	Main Cash Crops	Prospective Crops
Angonia	Chimwara	Maize & groundnuts	Maize groundnuts & tobacco.	Cotton, rice, maize hybrid MH17, 18 & sunflower.
	Dala	Maize, groundnuts, soybeans & tobacco	Tobacco, maize, soybeans, groundnuts & Irish potato.	Sunflower, cotton, Irish potato, millet, cassava & sweet potato.
Chifunde	Mkantha	Maize, sweet potato & pumpkins	Tobacco, maize & groundnuts	Irish potato, sunflower, beans & cassava
	Nsadzo	Maize, groundnuts & cotton	Tobacco, groundnuts, maize & cotton	Sunflower, Irish potato, beans & sweet potato
Chiuta	Chipiri	Maize, cassava, sweet potato & Sorghum	Maize & regular beans	Millet, cotton & sunflower
	Lumadzi	Maize, tobacco, cassava, pumpkins, sweet potatoes	1. Maize sold to traders in Malawi 2. Tobacco sold to Mozambique Leaf Tobacco	Sunflower, cotton, millet, groundnuts, Irish potato & beans
Macanga	Mbinhe	Maize, groundnuts, beans & sweet potato	Tobacco, beans, maize & Irish potato	Sunflower, cotton, rice & wheat
	Namadende	Maize, tobacco & groundnuts	Tobacco, maize, groundnuts, beans & Irish potato	Sunflower, cotton, rice & wheat
Moatize	Ntowe	Millet, maize & groundnuts	Maize, groundnuts, millet & Pigeon Peas	Cotton, sunflower, hybrid maize MH17 & 18, tobacco & sweet potato
	Amphande	Maize, cassava, tobacco & sweet potato	Maize, tobacco, cassava & groundnuts	Rice, cotton, sunflower, Irish potato & wheat
Tsangano	Banga	Maize, Irish potato, groundnuts & beans	Irish potato, maize, Beans groundnuts & millet	Sunflower, wheat, rice, cotton & sweet potato
	Makonje	Irish potato, maize & beans	Irish potato, maize, cassava & beans	Sunflower, cotton, wheat & rice

Source: JICA Study Team.

(3) Animal husbandry

Animal husbandry is a common practice in the Study Area (Table 3.11). All the communities surveyed raise chicken for meat, pig and goat. Nsadzo in Chifunde district raises average of 20 pigs per household, particularly more than any other communities surveyed. Mkantha in Chifunde is also raising 15 adult cattle. Goat is traditional popular animal for meat. Dala in Angonia, Mukantha in Chifunde district are raising 20 goats per family. Small animals, such as pigeon and rabbit are also popular in Mukantha. Amphande in Moatize district raises 30 chickens for meat while none of the communities surveyed raise chicken for eggs.

2.4.3. Employment

All the communities surveyed indicated that their main source of income was exclusively from farm-work. None of the communities surveyed earn income by non farm-work, because these communities lack access to non farm-work opportunities available mostly in urban areas like Tete city or other district centers (Table 3.12). Non-farm related

economic activities in rural areas are not common in the Study Area.

Table 3.11. Animal Husbandry in the Study Area

District	Community	Pig	Adult Cattle	Hog	Goat	Chicken for meat	Duck	Pigeon	Rabbit	Cattle calf	Piglet	Chicken for egg
Angonia	Chimwara	4	8	5	10	10	N/A	N/A	N/A	N/A	N/A	N/A
	Dala	10	11	6	20	12	2	12	N/A	N/A	N/A	N/A
Chifunde	Mkantha	12	15	N/A	20	10	14	60	18	6	10	N/A
	Nsadzo	20	5	N/A	7	6	3	10	N/A	3	10	N/A
Chiuta	Chipiri	4	N/A	N/A	6	10	8	12	N/A	N/A	12	N/A
	Lumadzi	4	N/A	N/A	5	12	6	8	N/A	N/A	12	N/A
Macanga	Mbinhe	10	N/A	6	3	8	4	6	N/A	N/A	N/A	N/A
	Namadende	2	6	3	7	12	4	14	N/A	3	10	N/A
Moatize	Ntowe	6	N/A	7	6	6	N/A	N/A	N/A	N/A	N/A	N/A
	Amphande	10	N/A	N/A	8	30	N/A	40	8	N/A	N/A	N/A
Tsangano	Banga	10	12	4	20	12	8	14	N/A	N/A	N/A	N/A
	Makonje	8	N/A	10	8	20	4	40	10	N/A	N/A	N/A

Source: JICA Study Team.

Table 3.12. Distance to Selected Locations

		Distance to key locations on foot (in hr)				
District	Community	To farmland	To market	To livestock market	To district center	Major problems with roads
Angonia	Chimwara	1 hr	3 hrs	3hrs	3 hrs	Seasonal road, no bridge
	Dala	1-3 hrs	3 hrs	3 hrs	3 hrs	Seasonal road
Chifunde	Mkantha	1.5 hr	N/A	N/A	5 hrs	Seasonal road, lack of transport
	Nsadzo	1-3 hrs	N/A	N/A	4 hrs	Transport problem & high bus fare
Chiuta	Chipiri	2 hrs	2hrs	N/A	N/A	No bridge, rough road, seasonal road
	Lumadzi	0.5 hr	8 hrs	8.0 hr	6 hrs	No bridge, no maintenance, seasonal road
Macanga	Mbinhe	1-2 hrs	8 hrs	8 hrs	8 hrs	Seasonal road, no bridge
	Namadende	1 hr	8 hrs	N/A	N/A	Lack of transport
Moatize	Ntowe	20 min	2 hrs	N/A	3 hrs	Seasonal road
	Amphande	1 hr	2.5 hrs	2.5 hrs	2.5 hrs	Seasonal road
Tsangano	Banga	0.5-2 hrs	0.5-1 hr	N/A	3 hrs	Seasonal road
	Makonje	0.5-3 hrs	12 hrs	12 hr.s	10 hr.s	Seasonal road & no bridges

Source: JICA Study Team.

In addition, lack of means of transportation is another obstacle for rural communities to access to the labor market. According to the respondents, the bus fairs are not affordable as bus services are provided by the private sector and the Government does not control the ticket prices. Such limitations to the access to the market also make it difficult for community members to seek further employment opportunities outside rural areas.

2.4.4. Education

All the 12 communities have at least one primary school. Ntowe only recently opened a

school. Schools are always under-funded and their equipment and facilities are almost always inadequate (Table 3.13). All the communities identified provision of education as one of major priorities for improving their welfare.

Table 3.13. Schools and Educational Programs

District	Community	No. of Schools	Grades Offered	No. of Students	No of Teachers
Angonia	Chimwara	1 primary	Grade 1-3	78 (40M/38F)	2
	Dala	1 primary	N/A	169	4
Chifunde	Mkantha	1 primary	N/A	289 (182M/107F)	5
	Nsadzo	3 primary	1 w/ grade 1-5	N/A	4
Chiuta	Chipiri	1 primary	Grade 1-5	140 (98M/42F)	4
	Lumadzi	1 primary	Grade 1-3	109 (65M/44F)	3
Macanga	Mbinhe	1 primary	N/A	165 (92M/73F)	4
	Namadende	1 primary	Grade 1-5	295 (160M/135F)	6
Moatize	Ntowe	1 primary	N/A	N/A	N/A
	Amphande	1 primary	Grade 1-5	122	7
Tsangano	Banga	1 primary	Grade 1-5	400 (206M/194F)	8
	Makonje	1 primary	Grade 1-5	346 (136M/210F)	7

Source: JICA Study Team.

2.4.5. Health and nutrition

Of the 12 communities surveyed only four communities have a health post within the communities (Table 3.14). Others need to go to the health post in a neighboring community. The constraint here is that there is no means of transportation. Patients need to walk up to 10 hours or need to go on a trip to the provincial hospital in Tete city for 54 km (Chipiri). All the communities surveyed are being aware of the need of basic health, particularly that of vaccination.

In rural areas, access to health services by the poor and the non-poor is roughly the same. In urban areas, however, the non-poor has better formal health assistance than the poor. The proportion of children aged 6-11 months who have not been immunized is substantially higher in rural than in urban areas. Chronic malnutrition of children under five is also higher in rural area.

2.4.6. Access to basic social services

In rural areas there is no substantial difference between the poor and the non-poor in terms of types of water source and sanitation; most people depend on wells, rivers, lakes and latrines. In urban areas, however, the non-poor tend to have access to piped water and a health network whereas the poor depend more on standpipes and public wells. In rural areas there is little difference between the poor and the non-poor in terms of distance to various services (e.g., school, doctor, nurse, market, telephone, etc.).

Table 3.14. Health Posts and Services Provided

District	Community	Health post w/in village	Nearest health post	Distance to health post	Type of services provided
Angonia	Chimwara	Yes	--	60-min walk	Medicines, midwives, vaccination, family planning, minor sickness
	Dala	No	Domue	3-hr walk	Basic health provision to adults & children's vaccination
Chifunde	Mkantha	Yes	--	--	Basic health provision to adults & children's vaccination
	Nsadzo	Yes	--	--	Medicines, midwives, vaccination, family planning
Chiuta	Chipiri	No	Tete city	54km walk	Basic health provision to adults & children's vaccinations
	Lumadzi	No	Chiuta District	6-hr walk	Basic health provision to adults & children's vaccinations
Macanga	Mbinhe	No	Macanga District Health Center	44km walk	Basic health provision to adults & children's vaccinations
	Namadende	Yes	--	--	Medicines, midwives, vaccination & family planning
Moatize	Ntowe	No	Kambulatsitsi local health post	3-hr walk	Basic health provision to adults & children's vaccinations
	Amphande	No	Zobwe	2.5-hr walk	Basic health provision to adults & children's vaccinations
Tsangano	Banga	No	Malawi	19km walk	Basic health provision to adults & children's vaccinations
	Makonje	No	Tsangano Health Center	10-hr walk	Basic health provision to adults & children's vaccinations

Source: JICA Study Team.

2.5. Analysis

2.5.1. Comparison of communities

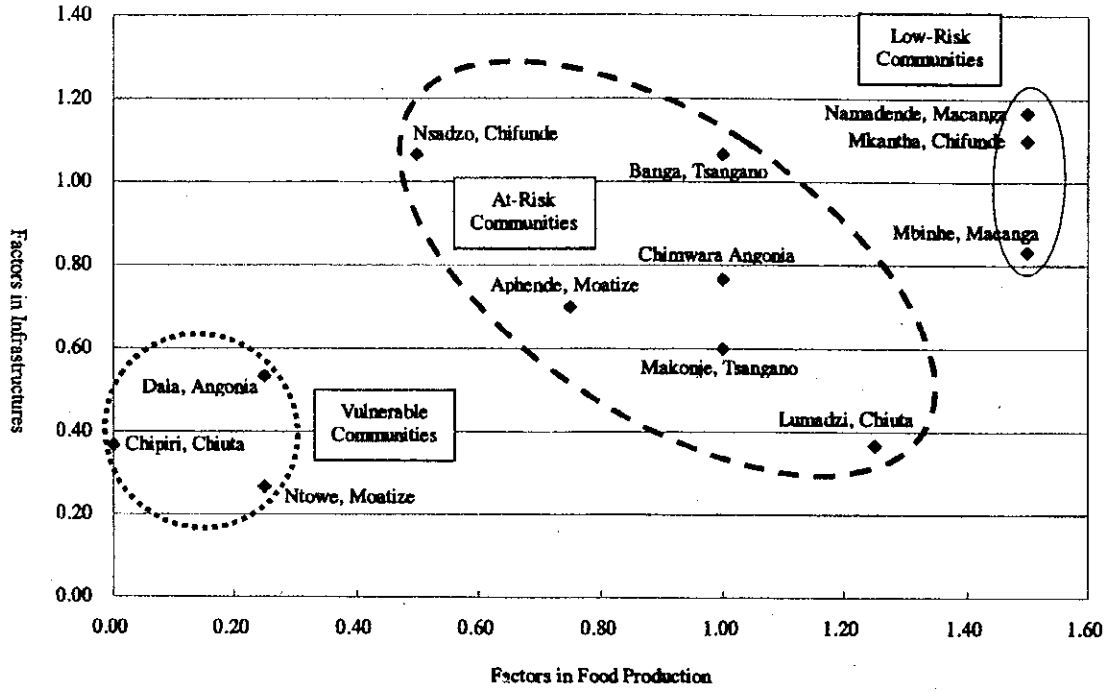
In order to better understand the state of welfare of the twelve communities surveyed, the JICA Study Team held a series of information-sharing sessions (workshop) between December 8 and 20, 2000 in the JICA Study Team office in Tete city. The data collected from the survey included a mix of qualitative and qualitative data. The participants of the workshops discussed and analyzed the data collected for use in the Study.

2.5.2. Diversity of communities surveyed

Socio-economic conditions of the communities surveyed are much diverse in many aspects. Such differences cause different development conditions and patterns, which may require a variety of development approaches and strategies in order to match such diverse characteristics in the Angonia region.

In the preliminary analysis based on the survey team's judgment, three different classes of communities are identified as follows (Figure 3.3).

Figure 3.3. Relative Development Status of Villages Surveyed



Source: JICA Study Team.

(1) Vulnerable communities

Vulnerable communities are characterized by low stock of foods between harvests, low surplus foods and the lowest level of infrastructure provided among the 12 communities surveyed. This class of communities includes Chipiri in Chiuta, Dala in Angonia, and Ntowe in Moatize. Chipiri, in particular, regularly receives food aid from the World Food Program between harvests. Dala claims that less fertile land is becoming the serious problem to them. Ntowe has had a chronicle problem of food shortages of between the harvests. A primary reason is that they grow substantial area of millet instead of maize. Even though Ntowe's soil is fertile, unit production of millet is much lower than that of maize.

(2) At-risk communities

At-risk communities consist of six communities. Their situations are relatively better than the vulnerable group above, but they still have many problems that incur many risks of their conditions turning the other way around.

(3) Low-risk communities

Low risk communities consist of three communities: Namadende and Mbinhe in Macanga, and Mkantha in Chifunde. Their overall rating is relatively high because of good food production, better social services delivery and better infrastructure that leads to good access to market. Their income comes from diverse sources such as cash crop (tobacco),

handicrafts, brick and charcoal making, and cash transfer from relatives working outside the community.

2.5.3. Agricultural extension services

(1) Present conditions

All the twelve communities surveyed answered that the current level of technical assistance from the Government was not sufficient. Many technical and financial supports from the Government are needed to increase the productivity. A problem tree analysis indicates that many problems commonly seen in the Study Area are associated with the extension services and technical assistance. The current functions and the service level of the extension services should be much improved in order to increase the agricultural productivity in the Study Area.

(2) Issues

1) Lack of resources to secure visits by extension workers

The provision of the extension service is the responsibility of the Agricultural Extension Services of Tete province. Lack of available resources to ensure the provision of extension services is a major constraint. In particular, limited number of motorcycles and a few bicycles can only do a little to cover the vast area and dispersed rural population.

2) Inadequate planning and record on extension operation

As already discussed, the extension workers are assigned to close proximate to the community they serve. Once they are assigned to the respective communities, it is difficult to monitor and evaluate their activities by the provincial government. Extension workers tend to work independently. There are no established procedures to undertake extension work according to a consolidated plan shared by all extension workers in a specific region to promote specific crops etc.

3) Languages

Assigning extension workers is not necessarily done based on the workers' language ability or cultural and tribal association to the community they serve. Sometimes extension workers do not comprehend languages the assigned communities speak.

(3) Work conditions

Challenging working environments (poor infrastructure, lack of good housing, lack of good school for their children, etc.) discourage assigned extension workers to keep his/her motivation and moral.

(4) Prospects

There are two training centers for extension workers in Tete province. Although

extension workers do not receive regular training based on a set (concrete) schedule, the existence of two facilities in the region is an advantage. The centers are capable of providing such training as soil analysis, crop selection, marketing, and fruit production.

2.5.4. Handicraft making

(1) Present conditions

Diversification of sources of income for rural families targeting women is one strategy to improve the welfare of the Study Area. There are many attempts of teaching weaving, sawing, and knitting, but most have failed in Chifunde district. Only cooking was a successful practice.

One successful practice initiated by the Norwegian People's Aid (NPA) in the previous years was to teach cooking (baking cookies and cakes) to women in rural communities, which enabled them to use local foodstuff and to sell value-added products within the community. Promotion of soda bread using locally available common ingredients (nuts, dried fruits, vegetable oil, wheat, and eggs) was identified as a reasonable approach for income source diversification.

(2) Issues

Two major constraints are (1) weak market access due to lack of transportation means and poor road conditions and (2) the lack of credit to expand marketing and production.

(3) Prospects

Handicrafts have a great potential for improving economic circumstances through the sale of handicrafts in those areas where there exist a tradition of making handcrafted goods and a market for them. The sale of agricultural surplus in low-income rural areas involves some levels of risks. For example prices of foods tend to be low and may fluctuate violently, and weather conditions are often unreliable. Therefore handicraft sales may become crucial to sustaining a rural population.

There are a few advantages for handcraft promotion in the Angonia region.

a) There is a tradition of making furniture (bamboo chair) and household goods (bamboo basket, clay pot and earth ware). The skills are handed down from one generation to another.
b) Raw materials and labor are available locally. For example bamboo is widely available in Chifunde, Chiuta and Macanga districts; and
c) The techniques of production are labor-intensive; therefore the promotion of wood curving would increase the number of employees.

2.5.5. Poverty, war and repatriation and their social impact

(1) Present conditions

1) Weak kinship and social cohesiveness

Community members expressed that the community members' experiences of war, the subsequent refugee situation, and the repatriation were significant to their lives in many ways.

As a former communist state, the Mao-style cooperatives were introduced earlier in rural communities. All the12 communities surveyed expressed their disappointment and suspicion about establishing a cooperative. They do not believe in cooperatives because of lack of accountability, mismanagement, inequality and lack of incentives and benefits. Such mistrust influences their views on economic infrastructure. For instance, people do not believe banks; rather they save money in personal savings in a bush. Informal lending is practiced in rural areas, but the scheme is much smaller and the deposits are very small.

2) Weak social elasticity

Social elasticity refers to a capacity to cope with stress from outside. Due to the inherited poverty in the Study Area, their ability to endure and to cope with anticipated economic transitions resulting from the plan is still weak. In particular, high illiteracy rate and associated lack of training opportunities cause massive unskilled workers in the Study Area. Proposed large capital-intensive investments, such as coalmines, may create thousands of employment opportunities. It is, however, a question whether such investment projects will create jobs for mass of existing unskilled labor in the Study Area.

Another foreseeable concern related to capital-intensive investment is massive population inflow, if not managed carefully. Tete city would expand significantly due to the intra-regional migration resulting from capital investments there. Further, the relative proximity to the border with Zambia, Malawi and Zimbabwe may lead even to a massive population inflows for seeking employment opportunities as economic, cultural and societal ties with these bordering areas are strong. Drastic demographic changes may create negative impacts to the society.

3) State of poverty in Tete

The following issues are identified as phenomena of poverty situation in the Study Area.

a) Lack of material goods or services, such as food, clothing, fuel or shelter. These basic needs are not met in rural communities of the Study Area.
b) Disparities in the standard of living between the districts.
c) Limited resources available: some basic commodities such as food, water, transportation etc are not commonly available in some communities. Even when

they are available, rural population have limited control over them.

d) Lack of basic security or increased vulnerability: subsistence farmers are increasingly facing market forces through, for example, introduction of specialized cash crops such as tobacco, and paprika etc. By incurring debts they have vulnerable, while investing in new venture (new crops) will raise their incomes. There are trade-offs between poverty and vulnerability (or between security and income).

e) Lack of entitlement: rural communities lack access to basic health, which is provided in some areas.

f) Multiple deprivation: the deprivation which rural communities experiences is not constant or consistent. This is a fluctuating and changing set of conditions, in which communities may solve one problem or escape from one only to find them enmeshed in another. Magnitude of each deprivation may not be serious, but constant or consistent nature of it would eventually accumulate and increase the effects on the poor. The state of poverty would depend on cumulative experience over time.

g) Exclusion: poverty in the Study Area can be seen as a set of social relationships in which people are excluded from participation in the normal pattern of social life. People are excluded as a result of limited resources.

h) Inequality: people may be held to be poor because they are disadvantaged by comparison with others in society.

i) Class problem: there is a significant prejudice against rural population. Because of the hardship they have, urban population deems rural population as a subclass by urban population.

j) Dependency: poor people are sometimes taken to be those who receive social benefits in consequence of their lack of means.

k) Unacceptable hardship: poverty consists of serious deprivation, and people are held to be poor when their material circumstances are deemed to be morally unacceptable.

2.5.6. Entrepreneurship and business development

(1) Present conditions

1) Role of tobacco/cotton traders

Tobacco traders act as intermediaries between market and producers in isolated rural areas. Traders monopolize market prices of tobacco leaf, paying extremely low prices and charging consumer prices, which are too high. This situation is exacerbated when they act as supplies of informal credit to farmers who have no access to bank loans. Under

such circumstances, traders can virtually dictate their own prices to individual producers.

2) Access to credit

Recurring seasonal scarcity of money in the period before the main harvest forces people to borrow in order to buy food and other necessities. This gives rise to a cycle of indebtedness where debts incurred before each year's harvest are paid off after the harvest. Households' remaining stock of food and cash, however, is not sufficient to carry them through the year; and further borrowing is therefore unavoidable.

Banks in Tete province give credits exclusively to the formal sector. Farmers in rural areas are excluded from access to credit. Establishment of community-based financing (i.e., a credit scheme comparable to Grameen Bank in Bangladesh) may help farmers to raise income and strengthen their financial status.

(2) Issues

1) Access to markets

Basic goods and services do not reach rural areas due to relative difficulty in accessing major roads and transportation, physical distance, and underdeveloped marketing system. Rural communities rely on insufficient transportation to access markets. Rural roads are not passable during rainy seasons. Inability to deliver surplus goods and service to markets is one of major obstacles for rural farmers to diversify their income sources.

Transportation services are solely owned and operated by the private sector. The pricing system has no government-led interventions. The pricing is, in many cases, arbitrary, and therefore the cost of transportation is significant compared to the price of goods and services, particularly in rural communities. The current cost between Tete and Zambian border is equivalent of US$5.00. The trip takes six to eight hours. Also villages are dispersed in a vast area. In addition to the weak service provision through transportation and road systems, the physical distance to markets is another constraint. According to results from the socio-economic survey of two villages in Chifunde, farmers buy agricultural inputs and tools from markets using cash. They earn cash by selling their surplus foods mainly maize at the market. Most of time they travel to Tete city and stay a few days until the maize they brought is sold.

2) Road rehabilitation

Eleven communities have poor road access to markets or service centers. Seasonal change in road conditions hinders community's access to outside. Government services do not reach because of this situation. Transport services by private operators are not affordable for most poor farmers.

(3) Prospects

1) Bicycles as a popular means of transportation.

Bicycles are probably the most common means of transportation one can afford. Most bicycles in the Study Area are imported from Malawi. A typical model costs Mt.1.8 million (approximately US$80.00). The bicycles are heavy-duty as the most common use of them is to carry heavy agricultural products to nearby localities. Because of the popularity, parts and other bicycle related services are readily available in rural areas. Blacksmiths provide such services as welding and repairing. These services are already available in most part of the Study Area.

2) Role of rural roads

Road construction is often assumed to be a relatively simple, but expensive method of assisting small farmers to provide easier access to markets for their products. Road construction alone cannot guarantee improved agricultural production by small farmers. New rural roads generally lead to increase in land values, particularly for land adjacent to the roads themselves. In order to realize the full potential of new roads, it is necessary to provide complementary services such as agricultural extension, farm cooperatives, credit, and transport facilities. In such areas of increasing penetration by new rural roads, therefore, farmers need to be assisted by providing additional marketing and related services through informal groups or cooperatives (storage, transport, information dissemination, land titling, etc.) to counter adverse effects.

3) Product marketing

In general, marketing consists of all process of discussions and transactions between buyers and sellers. It also includes transport, storage, processing, packaging and advertising that occur in trading. In one way or another, a large number of rural development projects incorporate a marketing element. These may range in size and complexity and include formal or informal agricultural and industrial groups. Marketing is crucial to production of goods and a service offered subsequently for sale, and is designed to generate income and employment. In the Study Area, poor marketing/transport facilities act as a major constraint to increasing production and raising incomes.

2.5.7. Basic social services provision

(1) Present conditions

1) Overview

For many rural areas there is an acute need to provide basic services. However, one should not underestimate the problems of providing services in the countryside. It can be

far more costly, for example, to set up primary health care facilities in an isolated rural area, where the problems of transport and supplies are acute. It is frequently very difficult for professionals working in rural areas to sustain their commitment when salaries and career prospects are far more attractive in the city. Moreover the provision of essential services implies a long-term financial commitment.

2) Primary health service

According to the survey result, only four communities (Chimuwara, Mkantha, Nsadzo and Namadende) have a health post in the community. These health posts are staffed with a nurse or health assistants. The quality of the service, however, is still not adequate because necessary medicine, equipment and personnel are always lacking. All the 12 communities receive primary health services for mothers and children (up to 5 years old) including free vaccination. Health services for adult population, however, are almost non-existence while HIV/AIDS infection rate and mortality rate are high. Proper family planning practices as well as its education are high in needs, but the communities surveyed responded that the measures did not work well because they were challenged by cultural norm and negative conception toward birth control.

3) Primary education

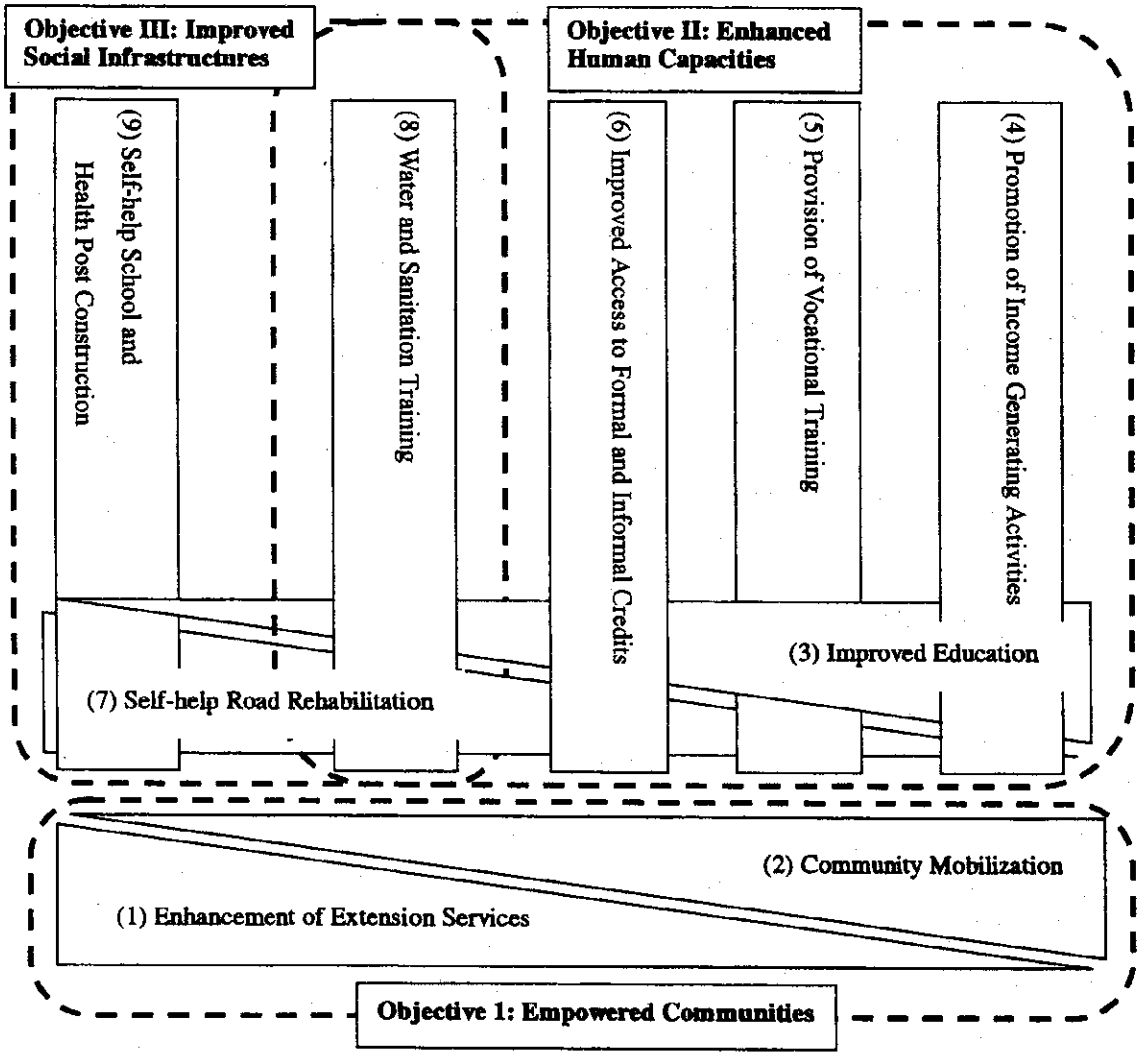
All the communities have a school. They are staffed with qualified teachers except Ntowe. Facilities and teaching materials among other things are not adequate. All the twelve schools have only half-day classes or two sessions per day due to the lack of teachers. Class size is another problem in the community.

Chapter 3. Goal, Objectives, Strategy and Projects for Community Development in the Study Area

3.1. Overview

To increase the welfare of the Study Area, two-level goals are proposed for community development to achieve the overall goal of the Angonia region. The first goal is to increase the communities' overall food security level. The second goal is to contribute to national growth in line with the overall economic goal. In order to achieve these goals, the following strategies are identified. Relationships between the strategies are illustrated in Figure 3.4.

Figure 3.4. Relationship between Proposed Strategies



3.2. Objective I: Empowered Communities

Objective I: To strengthening self-governance and self-determination of communities.

Achieving the first objective seeks to build a strong foundation for human development of the Angonia region. It aims at boosting the speed of development through strengthening democracy and sense of self-determination among communities. Empowered communities through the strategies listed in the following are vehicles for various programs/projects proposed by the Study. To achieve the objective, two strategies are developed.

3.2.1. Strategy (1): Enhancement of extension services

Enhance the roles and capacity of rural extension services.

(1) Description

Extension workers have two separate roles to play: (a) to provide appropriate technical information needed by community members; and (b) to initiate changes as a catalyst. These two roles reinforce each other to accomplish the missions of extension workers.

Most problems found in the Study Area are associated with human behaviors, which eventually lead to 'negative' impacts to human environment. To deal with such problems, it requires much to encourage people to change the way in which they behave. In the Study Area, this involves raising awareness and change in farmers' practice in their fields. Only training to the individuals or groups that engage in 'negative' behaviors can alter such a direction. Rural extension services, if strengthened properly, reinforce effectiveness of the change process. They act as the catalyst role to bring positive change to such 'negative' human behaviors.

(2) Proposed projects/programs

1) Training of trainers to rural extension workers

Agricultural extension plays significant roles in implementing this program. Provision of training of trainers to rural extension workers will directly contribute to the quality of services. In addition there are a few effects: (a) effective mobilization of the communities they serve; (b) greater awareness and acceptance to the contents delivered by the extension services; and (c) accelerated outcomes intended from the services. Principles of adult education are utilized for trainees to develop appropriate curricula and teaching materials. The training is designed for hands-on yet experiential rather than deductive one, which conventional trainers in Mozambique commonly practice. Professional trainers should be employed to provide training specifically designed for a limited number of core head

trainers. Such training should focus on knowledge, skills, and also attitude.

2) Increased funding for extension services

In order to build strong foundation to develop rural communities, funding to support extension service should be much increased. Increased financial support should support the salary, per-diem and office and supplies. More motor vehicles should be provided to the extension workers in order to cover vast areas more effectively and in the timely manner.

3) Organization-wide strategic planning of extension services

There is a great need of re-defining the roles of extension workers in order to strengthen the responsibilities. Participatory analysis of extension work, and that of organizational structure should be undertaken. If necessary, extension service should be reorganized. Much attention should be paid to recruitment and empowerment of female rural extension workers to strategize women's training in various subjects.

3.2.2. Strategy (2): Community mobilization

Utilize and revitalize existing social organizations in the communities to serve effectively for their respective membership population.

(1) Description

Existing social organizations within communities should be re-utilized and empowered. There are a few community-based governing entities in rural communities. Examples include traditional tribal structures headed by chiefs. Many communities have Women's Committees, Water Committees, and Justice Committees. These organizations are vehicles of decision-making and self-governance. Some are very active and functioning, while others are not.

There is a strong need of having autonomous entities to consult with and implement projects/programs based on the communities' needs. Projects/programs should cater to the needs and priority of the respective community. In the implementation of the plan, these organizations are vehicles for delivering services.

In order to strengthen the roles of these social organizations, their missions should be reviewed thoroughly. The respective committee members should be responsible for reviewing the process. Their mission should be evaluated to see if the missions serve for the clients, and if the respective activities are all along with the spirits of the missions. Through such a process, the community-based organizations are revitalized. If necessary, a new organization should be established. The result of the process will bring communities an increased confidence and awareness on governing their communities.

Training should be provided to various levels of community members. Leadership should be restored and strengthened through various community events and training for various levels of community members.

(3) Proposed projects/programs

1) Community mobilization activities

Annual gathering, such as village fair, agricultural festival, or dance and music fair may be scheduled and promoted. These events appreciate culture and traditional values and enhance the unity of the communities.

2) Regular town hall meetings

Important issues within the community should be discussed in an open forum. Meetings should be held regularly. The town hall meeting style will increase transparency of the process. It encourages broader participation, particularly of female members, in the communities' decision-making process.

3) Leadership training

To support various activities of the communities listed above, leaders of social organizations including female leaders should receive leadership training. Training is provided by rural extension services. Special attention should be paid to women, because the Study expects broader leadership by women for the empowered communities in the Study Area.

3.3. Objective II: Improved Human Capacities

Objective II: To enhance human capacities to meet immediate and long-term needs of communities.

The second objective builds upon the first objective. It aims to improve physical and human environments to meet the needs of communities. It also initiates the communities to cope with anticipated changes happening in years to come resulting from the proposed projects/programs of the Study. The objective aims to make the communities become 'pro-active' participants of the projects/programs proposed.

To achieve the objective above a set of four strategies are defined. They are explained in the following sections.

3.3.1. Strategy (3): Improved education

Improve the quality of the formal and informal education to build the foundation of human capacity for the general population of the rural area.

(1) Description

This strategy lays a foundation for the others that follow. Informal education should be emphasized and tailored to specifically deal with the existing gender disparity in education/training in the Study Area. Various topics are included in the following projects/programs. They should be specifically targeted to the female population of rural areas to improve the living conditions of women and children. Such trainings should be combined together to reinforce each other and increase the effectiveness of training. Teaching methods should be carefully developed in order to increase the effectiveness of the training. It has been effective in many other parts of Africa to use drama, case study, and puppet show etc. Careful design and consideration of selecting topics and teaching methods will significantly increase the effectiveness of the training.

(2) Proposed projects/programs

1) Adult literacy

Adult literacy training is among top priorities under this strategy. Asian experiences have proved that adult literacy programs increase women's welfare significantly. In the Study Area, adult education program should include literacy program specifically targeted to female population.

2) Civil rights and awareness building for women's health

Women's reproductive rights should be defended and promoted in the Study Area, raising awareness of men and women about health issues, particularly of family planning and primary health care. Promotion of civil rights will significantly alter the forced marriage, still practiced in some rural communities.

3) Sustainable agriculture and land ownership training

One of the major problems in the Study Area is extensive practice of slash and burn. However, there has been no systematic, community-wide tree-planting effort. Raising awareness of natural resources conservation is one way of dealing with environmental problems in the Study Area. In addition, sustainable agriculture needs to be promoted through various channels. Adult education is one way of promoting it. This type of training can be easily applied in the formal education when primary education extends their subject matter to include agriculture or horticulture. When it is needed, the resources for the training can be easily transferred to the formal education. Examples of the topics to be covered include: (a) sustainable use of land, (b) basic soil management practice, (c) land laws and conflict resolution, (d) selection of suitable crops, (e) nutrition education linked to selection of crops, (f) land conservation and 'slash and burn' practice, and (g) aforestation and reforestation.

4) Region-wide radio campaign to promote sustainable agriculture

By utilizing radio broadcasting system, tree planning and anti-'slash and burn' campaigns are implemented regularly during the project period. The radio station in Tete city has own studio to produce its own program. During the campaign, tree planting is promoted through schools throughout the region so that children learn importance of trees and soil conservation from early age.

3.3.2. Strategy (4): Promotion of income generating activities

Promote various income-generating activities to rural populations through combining technical training and extension supports.

(1) Description

On the top of the strategy (3) as a foundation, the strategy (4) aims at three goals, a) increased dispensable income, b) diversified income sources, and c) improved agro-production. Again, it needs to take necessary measures to make this program available for women.

(2) Proposed projects/programs

1) Small animal husbandry

The small animal husbandry program consists of two separate phases: Phase 1 (2002-2010) for promotion on indigenous and local breeds, and Phase 2 (2005-onward) for promotion of hybrid breeds.

Phase 1: 2002-2010

A strategy of initial phase of the program is to promote small animal husbandry using indigenous and local breeds. The Agriculture Department of Tete provides breeds and chicks of small animals to groups established in communities in the Study Area. Rural extension mobilizes communities to establish groups consisting up to five to ten households. The Government provides a soft loan to the farmers group to purchase new breeds or chicks. Alternatively, these groups can be vehicles of the peer-to-peer lending schemes (e.g., Grameen Bank of Bangladesh).

Using a fund raised within a peer group, or a money loaned from the Government under this program, the members of the group collectively raise these animals. When the animals are matured, some are sold in the market for income purpose, and some are sold directly to local community members. Proceeds are used for repayment for the fund.

Services provided by the rural extension include such technical assistance as (a) basics of animal husbandry, (b) prevention of common diseases and damages by other animals; and (c) basic management skills such as book keeping and leadership training for farmers'

groups.

Phase 2: 2005 and onward

The second phase is for introduction of hybrid farm animals to increase productivities and marketability. Based on early records of the program, only the groups repaying successfully from the sales of indigenous small animals in the previous phase are eligible to receive the support from the Government. Hybrid breeds are introduced in this phase. Hybrid animals require more inputs than indigenous breeds. Using the same program schematics, the Agriculture Department of Tete province provides chicks and breeds of hybrid animals on a loan basis. The groups raise more funds to loan the members to buy feeds, chemical and other necessities and repay the loan from the proceed of the sales.

When it is implemented, the following services are required in addition to the supports listed in Phase 1: (a) extended line of credit for farmers sufficient to cover feeds and its storage facilities; and (b) all kind of veterinary services including provision of medicines. Currently, only Macanga, Tete and Angonia have veterinary services available. Extending veterinary services to other districts is a prerequisite to this phase of the program.

2) Horticulture/fruit tree planting

Horticulture/fruit tree planting aims at various goals; (a) it raises awareness of conserving soil and environment through planting fruit bearing trees and growing vegetable; (b) it improves nutrition and food security; and (c) it increased possibility of having disposable income for women by selling surplus fruits and vegetables in the market. A broader goal is that, if successfully promoted throughout the Study Area, it would alter the widespread slash and burn significantly.

The program is specifically targeted to women in rural communities. Assumptions are that (a) women spend more time in their homes and have better position to take care of fruit trees and vegetable gardens if they are planted in the close proximate to their home; (b) women use the fruits and vegetables for their home consumption; and (c) women use the money, earned from possible sales of surplus food production, to buy foods, cloth and other goods and services for their children.

It is recommended to mobilize and revitalize already existing women's groups in communities in order to allow women to use land and tools traditionally controlled by male head of households. Leadership training should be provided as necessary. All provision of services, materials and training, listed bellow should be through the women's organizations to empower the organizations and to ensure the success of the program.

The Government provides tools for gardening (shovels, plows, watering cans and other small tools), seeds, seedlings, and chemicals. Rural extension workers (preferably experienced women) train female leaders of communities on such topics as preparation of

soil, making composts, making nursery, collecting seeds, making pickles and other preserves and basic nutrition and health education.

3.3.3. Strategy (5): Provision of vocational training

Improve various skills and knowledge necessary for meeting inside and outside the communities needs.

(1) Description

This strategy aims to increase probabilities of employments during the dry season, when the demand for agricultural labor in the fields is low. It provides basic community skills such as masonry, carpentry, cooking, baking, knitting, crochet, and others. These skills only employ basic skills, minimal tools and locally available materials.

(2) Proposed projects/programs

1) Community skills center

The community skills center provides farmers training in basic community skills such as masonry, carpentry and furniture making etc. It provides (a) increased possibilities of employment during dry season, (b) diversified income sources, and (c) support for small business development in communities. Local artisans participate in the project to teach or instruct rural communities. Rural extension workers provide basic training to trainers to effectively teach and evaluate their skills and knowledge.

3.3.4. Strategy (6): Improved access to formal and informal credits

Provide access to both formal and informal credits, which promote entrepreneurships among the rural population.

(1) Description

Improved access to the capital along with business training assisted by extension services and work of civil organizations promote entrepreneurship in rural communities. Improved access to the market reinforces establishment of small businesses that link between communities and the market.

Both formal and informal lending schemes should be employed in the implementation. Informal lending schemes need to be much emphasized, because of conventional lending institutions' inabilities to reach out to distant communities. The quality of services provided by formal lending institutions should be much improved. Priority should be given to those who trade basic goods and services to the communities. By providing such loans, communities are able to sell their farm products.

(2) Proposed projects/programs

1) Small scale business program

There are three components in this program.

(a) Provision of soft loans to community members through the peer-to-peer informal lending scheme

The proposed informal lending is administered by community members themselves through a peer-to-peer lending scheme (similar to the Grameen Bank in Bangladesh). Rural extension mobilizes communities to establish groups consisting of five to ten people. The makeup of the group varies depending on gender, and other social groups. These groups can also be vehicles for other activities. It proposes that the size of typical loan is up to Mt.5 million (approximately US$220.00) per borrower, which is not feasible for private banks.

Training of trainers for organizing group is one of perquisites for the program. The trainers should provide basic bookkeeping, and organizational management training should be provided to the members.

(b) Skills training for start-ups

In addition to the training above, additional training should be provided in the following areas: (a) basic business planning, (b) marketing, and (c) book keeping for business. Depending on the business participants are interested in, additional training related to the type of business should be provided.

(c) Business assistance to support small business owners

Further, additional business related advice and support are provided to ensure repayment of the loan as well as success of the business. Trained extension officers are responsible for regular visits to businesses in rural communities while the district government ensures dispatch of such extension officers to communities.

3.4. Objective III: Improved Social Infrastructures

Improve basic social infrastructure by collaborative initiatives of governments and communities.

Basic infrastructure should be much improved in the Study Area. The service level of schools, roads, water and sanitation in rural areas are even less adequate. In rural communities such low service level is one of major obstacles for development of the Study Area.

According to the survey, improvement of basic infrastructure ranked among the highest

priority by all the communities. They are willing to bear some costs of the projects by contributing labor and materials locally available. It is, therefore, recommended that coordination efforts among community leaders and governmental officers are essential to accelerate the process and to increase the ownership of the local communities, which eventually will increase the probability of better maintenance and longer years of services to the communities.

3.4.1. Strategy (7): Self-help road rehabilitation

Improve network and communication among villages within communities; and improve access to market and social services.

(1) Description

It is indicated that insufficient road networks weaken various development capacities of the Study Area. Particularly, improvement of road conditions will have significant impacts on welfare of rural communities. Road rehabilitation will improve access to the market, increase exchange of information and increase services.

(2) Proposed projects/programs

1) Self-help road rehabilitation

The objectives of this program are (a) to improve network and communications of villages within communities, and (b) to improve access to the market and social services. Because an inadequate road service is one of major bottlenecks for the development of the Study Area, this program should be implemented at the earliest stage of the proposed plan.

The program involves coordination and collaboration between the Government and local communities. There are two different levels in project implementation: (a) access road rehabilitation, and (b) village service road rehabilitation.

(a) Access road rehabilitation

Access road rehabilitation is to upgrade bridges and pavement of access roads, which link between community centers and the nearest main roads. Access roads construction usually requires large scale excavating work and therefore machine power. Building bridges accessible throughout a year requires advanced technical assistance. Because access roads benefit primarily community members, they will participate in the construction by providing labor.

(b) Village service road rehabilitation

A community comprises up to a few tens of villages. Village service roads are a network of small paths linking among these small villages and the community center where basic social services such as schools and health posts are located. Most village service roads

are for pedestrians only. These roads are not maintained regularly and some of them have high risk of erosion that blocks the passages. Under the program, the Government provides communities with basic tools such as shovels, haws and bush knives. Some community members receive basic training to supervise maintenance and construction of service roads. Under the leadership of community leaders and the trainees, other community members are mobilized to help maintain existing paths, clear bushes, and install steps using locally available gravel and other materials.

It should be noted that the construction project should be undertaken during the dry season when the demand for local communities' labor in their farmland is low. Special attention should be paid to the balance between the intensity of labor and the calorie intakes. At the end of the dry season, some communities do not have foods in their storage. When the construction site is at the proximate of such a community, the basic food ration should be provided in exchange of the labor.

3.4.2. Strategy (8): Water and sanitation training

Improve and maintain existing water supply systems; and improve the sanitary conditions of communities.

(1) Description

Water supply systems in rural communities are still far from inadequate in the Study Area. There are needs to strengthen institutional arrangements to maintain water systems. At the same time, sanitary conditions of the communities should be much improved through a combination of self-help sanitary building campaign and education.

(2) Proposed projects/programs

1) Water and sanitation training

There are four main components in this program.

(a) Mobilization of communities

A local institution to maintain and administer water facilities should be established prior to building them. A large majority of existing wells do not have such institution and procedures to maintain the water facilities. Establishment of a self-governing 'water committee' is a prerequisite for installing new water supply facilities. The committee is responsible for maintaining the facilities, collecting appropriate monthly use fees to cover the cost of maintenance, keeping books and reporting to the community, and providing various educational campaigns related to water and sanitation. Committee members should be selected by a democratic process such as voting. Special attention should be required to include women and elderly in the committee membership. Rural extensions

initiate and advise these issues when this program is implemented.

(b) Maintenance of existing wells

This component focuses on training to individuals who are selected by the committee. It comprises two separate subjects: (a) basic maintenance training for wells and pumps, and (b) organizational leadership and basic bookkeeping training.

Regular maintenance including replacing parts and supplies are a key for the function of wells. Under this component, the trainees receive training in basic maintenance of wells. They also learn how to organize and manage the water committee and how to collect use fees to cover cost of maintenance

(c) Self-help dug-well construction training

A dug-well is a type of well that is common in Mozambique. They are usually built by hands, requiring minimal tools and equipments. Only a pump, a slab to support it and a few concrete rings to support the well are required. It only requires basic skills and knowledge to build the well. This training enables community members to self-build dug-wells in their own communities with labor and funds contributed by them.

(d) Self-help sanitation training

Because of relatively low population density in the region, sanitation facilities have not been seen as a priority in the Study Area. Very few households have their own latrines. Sanitary education linked to construction of new wells is provided to the members receiving training. When a community installs new wells, community members, at the same time, receive sanitary education to build self-help pit latrines using basic tools and local materials.

3.4.3. Strategy (9): School and health post construction

Improve quality of social services delivery through collaborative initiatives for construction of schools and health posts.

(1) Description

The construction of schools and health posts is one of the most requested programs/projects by the communities surveyed. It aims: (a) to improve the access to the basic social services, education and health services; (b) to increase job opportunities for youngsters through primary education; and (c) to improve health supports leading to better welfare of the communities.

(2) Proposed programs/projects

The construction project is a collaborative work of the Government and the communities. All the 12 communities are willing to share the cost of construction by contributing labor

and some construction materials, including bricks, gravels and sand. The Government is expected to provide other materials necessary for construction of these buildings.

Appropriate numbers of teachers and health professionals should be provided after completion of the facility. Funding for supporting such facilities, including cost to cover salary, supplies and equipment are also paid by the Government.