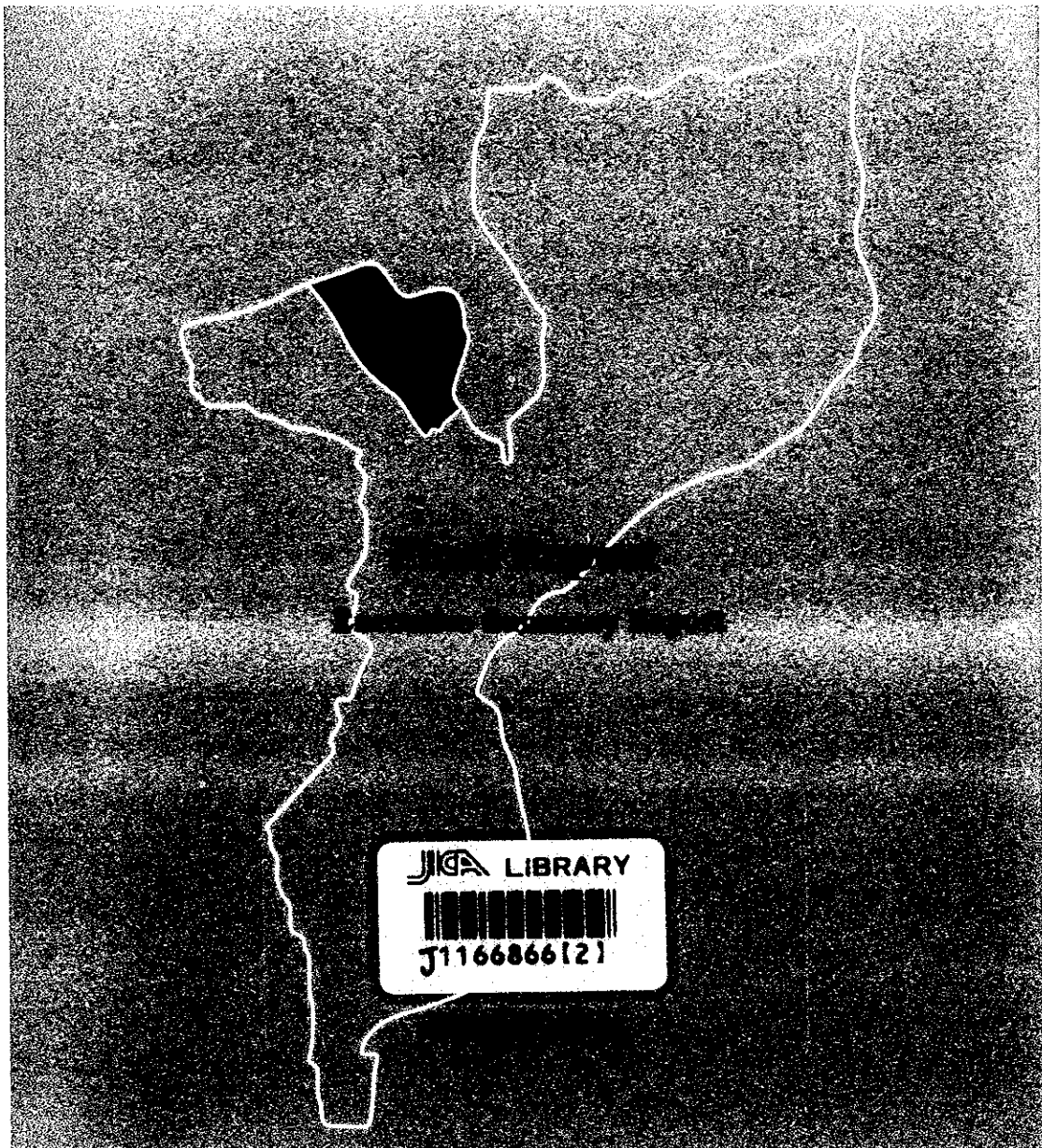


Japan International Cooperation Agency (JICA)

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The Study on the Integrated Development Master Plan  
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**Final Report  
Executive Summary Report**

October, 2001

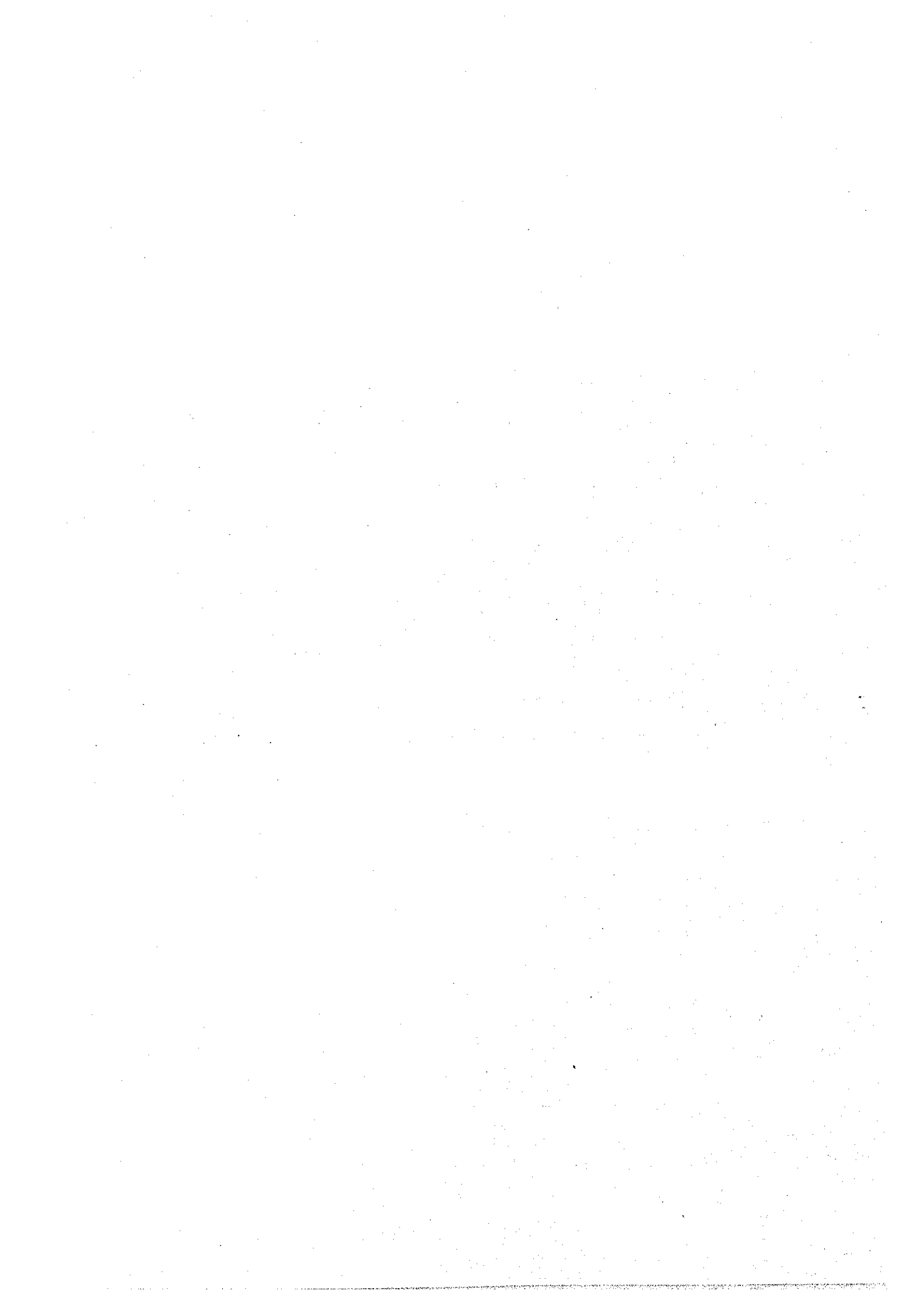
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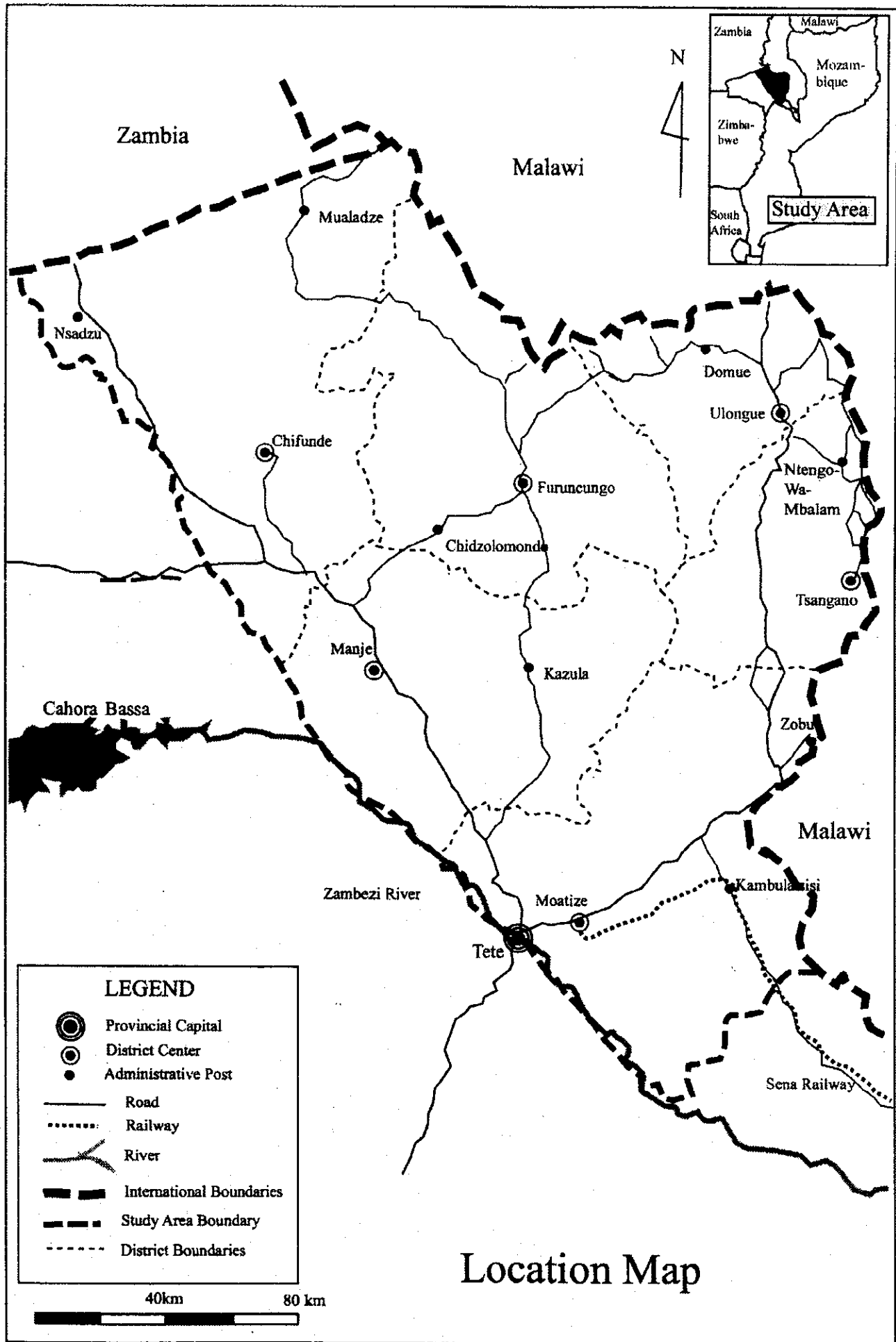


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## **List of Reports**

<b>Volume I</b>	<b>Executive Summary Report</b>
<b>Volume II</b>	<b>Master Plan Report</b>
<b>Volume III</b>	<b>Sector Report 1: Economic Sector</b> <ul style="list-style-type: none"><li>(1) <b>Agriculture</b></li><li>(2) <b>Mining</b></li><li>(3) <b>Industry and Small and Medium Business</b></li><li>(4) <b>Trade and Services</b></li></ul>
<b>Volume IV</b>	<b>Sector Report 2: Social Sector</b> <ul style="list-style-type: none"><li>(1) <b>Education and Training</b></li><li>(2) <b>Public Health Development</b></li><li>(3) <b>Community Development and Participatory Approach</b></li></ul>
<b>Volume V</b>	<b>Sector Report 3: Environment</b>
<b>Volume VI</b>	<b>Sector Report 4: Infrastructure</b> <ul style="list-style-type: none"><li>(1) <b>Transportation</b></li><li>(2) <b>Telecommunication</b></li><li>(3) <b>Energy</b></li><li>(4) <b>Water Resources</b></li></ul>
<b>Volume VII</b>	<b>Sector Report 5: Administration, Finance and Institutions</b>
<b>Volume VIII</b>	<b>Project Report</b> <ul style="list-style-type: none"><li>(1) <b>Project Profiles</b></li><li>(2) <b>In-Depth Studies</b></li></ul>









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

## Final Report

### Executive Summary

#### Contents

		<u>Page</u>	
<b>Chapter</b>	<b>1</b>	<b>Introduction</b>	
	1.1	Study Background .....	1
	1.2	Study Area and Objectives .....	2
<b>Chapter</b>	<b>2</b>	<b>Angonia Region</b>	
	2.1	Socio-economy .....	5
	2.2	Spatial Structure and Natural Resources .....	6
	2.3	Administrative Structure .....	7
<b>Chapter</b>	<b>3</b>	<b>Objectives, Scenario and Strategy for Angonia Regional Development</b>	
	3.1	Regional Development Objectives .....	10
	3.2	Alternatives for Angonia Regional Development .....	10
	3.3	Development Scenario .....	14
	3.4	Basic Strategy .....	15
<b>Chapter</b>	<b>4</b>	<b>Angonia Regional Development Frameworks</b>	
	4.1	Socio-economic Framework .....	18
	4.2	Spatial Framework .....	19
<b>Chapter</b>	<b>5</b>	<b>Development Projects and Programs</b>	
	5.1	Structure of Angonia Regional Development Master Plan .....	25
	5.2	Development Projects and Programs .....	26
	5.3	Indicative Investment Schedule .....	26
<b>Chapter</b>	<b>6</b>	<b>Implementing Arrangements for Angonia Regional Development</b>	
	6.1	Institutional Framework with GPZ .....	40
	6.2	Institutional Arrangements for Angonia Regional Development ....	41
	6.3	Recommended Organizational Reform of GPZ .....	42

### List of Tables

Table 1	Land Area, Population and Density in the Study Area, Tete Province and Mozambique .....	5
Table 2	Staff Capacity in the Study Area by District/City .....	9
Table 3	Alternatives for Angonia Regional Development .....	12
Table 4	Economic Growth Rates of the Angonia Region by 2025 .....	18
Table 5	Population Growth in the Angonia Region, 2000/2025 .....	18
Table 6	Present Land Use in the Angonia Region .....	19
Table 7	Land Use Conversion Matrix .....	19
Table 8	Urban Hierarchical System for the Angonia Region .....	24
Table 9	Urban Development Initiative with 13 Projects/Programs .....	27
Table 10	Rural Socio-economy Enhancement with 11 Projects/Programs .....	29
Table 11	Spatial Structure Strengthening with 11 Projects/Programs .....	31
Table 12	Local Accountability Enhancement with 12 Projects/Programs .....	33
Table 13	Special Program for Participatory Development with 10 Projects/Programs .....	35
Table 14	Estimation of Public Investment Allocation to the Study Area .....	26
Table 15	Indicative Investment Schedule for Angonia Regional Development .....	37
Table 16	Investment Requirements for Angonia Regional Development .....	39

### List of Figures

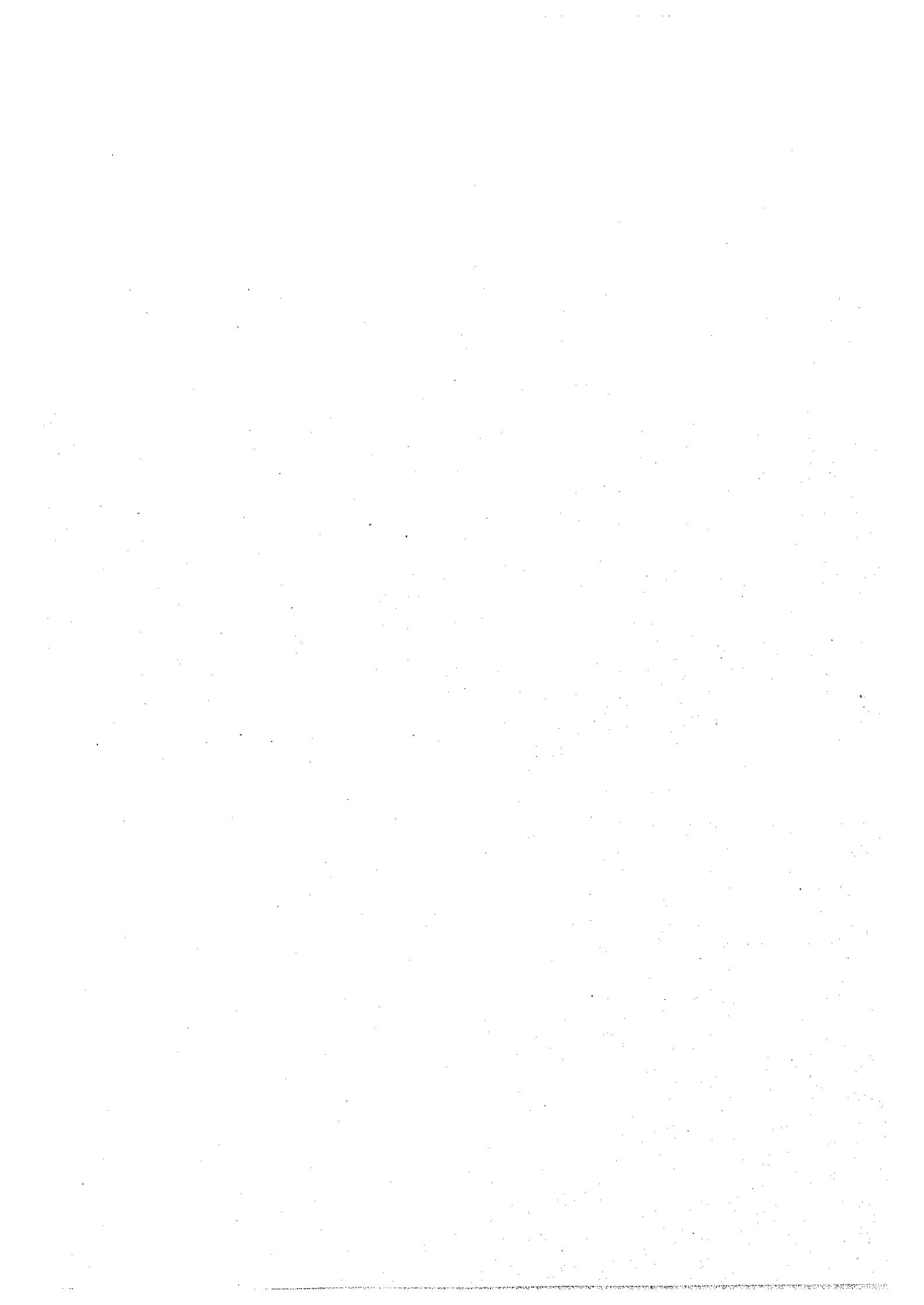
Figure 1	The Study Area .....	4
Figure 2	GRDP Projection for the Angonia Region, 2000/2025 .....	18
Figure 3	Indicative Future Land Use .....	20
Figure 4	Artery System for Central Mozambique .....	22
Figure 5	Artery System for the Study Area .....	23
Figure 6	Relationships between Three Components of Basic Strategy .....	25

## Abbreviations

ADM	Airport Authority of Mozambique
ADP	Accelerated Demining Program
ADPP/DAPP	Development Aid from People to People
AIDS	Acquired immune deficiency syndrome
ANE	Road Authority
ARA	Regional Administration of Water
ARC	Action for the Rights of Children
ASPS	Agricultural sector program support
BAD	African Development Bank
BADEA	Arab Bank for African Development
CAIA	Agro-Industrial Complex of Angonia
CCAP	Church of Central African Presbyterian
CCF	Cease-fire Commission
CFM	Port and Railway Authority
CIDA	Canadian International Development Agency
CIDAC	Centro de Informação e Documentação Amílcar Cabral (Amílcar Cabral Center of Information and Documentation)
CIDC	Canadian International Demining Center
CPI	Investment Promotion Center
DANIDA	Danish International Development Assistance
DAs	District Administrators
DNA	National Directorate of Water
EDM	Electricity of Mozambique
EIA	Environmental impact assessment
FRELIMO	Mozambique Liberation Front
GDP	Gross domestic product
GNP	Gross national product
GPZ	Gabinete do Plano de Desenvolvimento da Região do Zambezi (Zambezi Valley Development Authority)
GRDP	Gross regional domestic product
HALO Trust	Hazardous Area Life-Support Organisation Trust
HCB	Cahora Bassa Hydropower Corporation
HI	Handicap International
HIV	Human immuno-deficiency virus
IDB	Inter-American Development Bank
IDPs	Internally displaced persons
IMF	International Monetary Fund
INE	Institute of National Statistics
IRC	International Rescue Committee

ISCOS	Istituto Sindacale per la Cooperazione allo Sviluppo
IVA	Value added tax
JCI	Japan Consulting Institute
JICA	Japan International Cooperation Agency
LAM	Mozambique Air Lines
LWF	Lutheran World Federation
MARD	Ministry of Agriculture and Rural Development
mCel	Mozambique Cellular
MEDDS	Mechem Explosives and Drug Detection System
MIAF	Mozambique National Household Survey on Living Conditions
MICOA	Ministry of Environmental Action Coordination
MINED	Ministry of Education
MIPF	Ministry of Planning and Finance
MLTC	Mozambique Leaf Tobacco Company
MMRE	Ministry of Mineral Resources and Energy
MOH	Ministry of Health
MOTC	Ministry of Transport and Communications
MPF	Ministry of Planning and Finance
MPWH	Ministry of Public Works and Housing
MTLC	Mozambique Tobacco Leaf Company
NACP	National AIDS Control Program
NDI	National Demining Institute
NGO	Non-government organization
NHS	National Health System
NMCC	National Mine Clearance Commission
NORAD	Norwegian Agency for International Development
NPA	Norwegian People's Aid
NRC	Norwegian Refugee Council
OD	Origin-destination
ODA	British Overseas Development Administration
ONG	National Directorate of Geology
ONUMOZ	United Nations Operation in Mozambique
OPEC	Organization of Petroleum Exporting Countries
PAR	Participatory action research
PARPA	Action Plan for Reduction of Absolute Poverty
PHC	Primary health care
PLA	Participatory learning and action
PRA	Participatory rural appraisal
PROAGRI	National Program of Agrarian Development
RA	Rural appraisal

<b>RENAMO</b>	<b>Mozambique National Resistance</b>
<b>RRA</b>	<b>Rapid rural appraisal</b>
<b>S/W</b>	<b>Scope of work</b>
<b>SAC</b>	<b>Survey Action Center</b>
<b>SCS</b>	<b>Special Clearance Services</b>
<b>SIDA</b>	<b>Swedish International Development Agency</b>
<b>SLP</b>	<b>Sena line program</b>
<b>TDM</b>	<b>Telecommunications of Mozambique</b>
<b>UNDAF</b>	<b>United Nations Common Development Assistance Framework</b>
<b>UNDP</b>	<b>United Nations Development Program</b>
<b>UNHCR</b>	<b>United Nations High Commission for Refugees</b>
<b>UNICEF</b>	<b>United Nations Children's Fund</b>
<b>UNIDO</b>	<b>United Nations Industrial Development Organization</b>
<b>UNOHAC</b>	<b>United Nations Office for Humanitarian Assistance Coordination</b>
<b>WVI</b>	<b>World Vision International</b>
<b>ZMM-GT</b>	<b>Zambezi-Malawi-Mozambique Growth Triangle</b>



## **Executive Summary**

### **Chapter 1. Introduction**

#### **1.1. Study Background**

Decades of turmoil for independence and the subsequent civil war made the Republic of Mozambique one of the poorest countries in the world and devastated its land. According to the World Development Report 1997 of the World Bank, the Country ranked still at the bottom among 133 countries in terms of the per capita GNP (US\$80 in 1995). Mozambique was ranked in the 166th place out of 175 countries by the human development index of UNDP (Human Development Report, 1997). The Mozambican economy, however, has started to recover steadily. Although it is dominated by agriculture and thus subject to fluctuations due to climatic conditions, the GDP growth has been consistently positive since 1993 and it attained 11.8% in 1998. Inflation rates were reduced from 35-70% in early 1990's to 5.8% in 1997.

The recovery of the Mozambican economy during this period depended much on capital inflow from foreign countries. One inflow is development aid associated with the structural adjustment program started in 1987 by the IMF-World Bank initiative. The other is due to foreign direct investments for the development of rich natural resources. Due to these, the total balance of payment has been improved rapidly despite the large trade imbalance with import exceeding export by three times.

Efforts have been continued, supported by aid organizations, to rehabilitate infrastructure facilities degraded due to destruction by the civil war and insufficient human and financial resources to maintain them. Resettlement of refugees due to the civil war and skill re-training and other supports for them are still continuing, and social services for families of war victims are in high demand. Public sector resources need to be allocated also for continual removal of land mines and productivity enhancement in rural areas. As the Mozambique proceeds from the recovery from the civil war and the structural adjustment to sustainable development for overcoming the widespread poverty, development needs for various social and economic infrastructure will increase rapidly.

During this recovery period, investments tended to concentrate in the southern part of the Country centering on the capital city of Maputo. Inter-regional disparities between the south and the northern and the central regions have become more serious. In particular, the Zambezi river basin, occupying the north central part of the Country, has a higher ratio of people below the poverty line than the national average. It is also the area more seriously affected by the civil war with many schools and health facilities dilapidated and rehabilitation of basic infrastructure delayed. The ratio of returned refugees is high as it

borders on Malawi, Zambia and Zimbabwe, and needs for social services are very high for the refugees and other families of war victims.

At the same time, the Zambezi river basin is known for rich natural resources, including water resources, various mineral resources, fertile soil and favourable climatic conditions for agriculture. To realize the development potentials of the basin most effectively, the Government of Mozambique established the Zambezi Valley Development Authority (Gabinete do Plano de Desenvolvimento da Regiao do Zambeze; GPZ) in 1996 together with special incentives to promote investments in the Valley. To pursue sound and sustainable development of the basin on the balance with environmental conservation, a multi-sector development plan is necessary to guide private sector investments in compliance with medium and long-term thrusts of the development supported by the public sector. With this recognition, the Government of Mozambique requested the Japanese Government for technical cooperation to prepare a regional development plan for one of the three strategic regions within the Zambezi river basin: Quelimane, Morrumbala and Angonia.

In response to this request, the Japanese Government sent a project formulation mission in November, 1999. Through field surveys and studies as well as discussions with the Mozambican Government, the Angonia region was selected for the technical cooperation. Implementation of this technical cooperation has been entrusted to the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation program of the Japanese Government. JICA sent a mission to work out the Scope of Work (S/W), which was agreed upon between GPZ and JICA, and signed by respective representatives on April 19, 2000.

## **1.2. Study Area and Objectives**

### **(1) Study Area**

The Study Area to be covered by this technical cooperation (called the Study hereafter) occupies the northeastern part of Tete province, which is located in the north central part of Mozambique. Administratively, it consists of six districts of Macanga, Tsangano, Chifunde, Angonia, Chiuta and Moatize, and the city of Tete (Figure 1). The Study Area has 40,000km<sup>2</sup>, and its total population was 761,000 in 2000. The Study Area is called the Angonia region.

### **(2) Study objectives**

The objectives of the Study are defined based on the agreement between GPZ and JICA as follows:

- 1) to formulate an integrated regional development master plan for the Angonia region to the year 2025, with the aim of guiding private and public sector investments with the

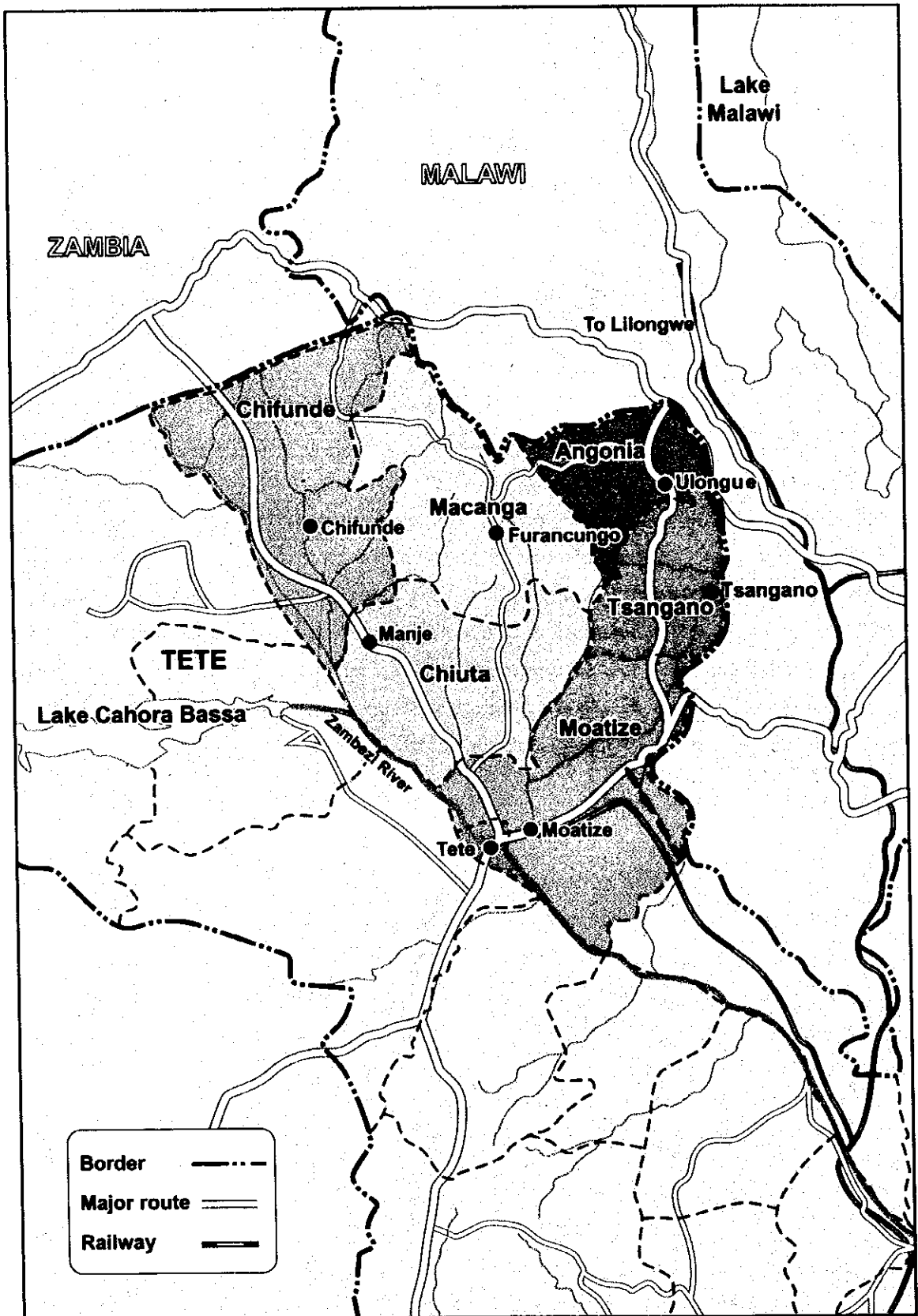


participation of local communities, and on the balance with conservation of both natural and social environments,

- 2) to prepare a list of priority projects with profiles for promoting private and public investments into the region, and
- 3) to effect technology transfer related to development planning and management to the Mozambican counterpart personnel in the course of the Study.

The technology transfer will be effected through daily collaborative work, regular meetings, and occasional seminars/workshops.

Figure 1. The Study Area



## Chapter 2. Angonia Region

### 2.1. Socio-economy

#### (1) Demography and social conditions

The total population of the Study Area, 711,028 at the 1997 census, corresponds to 4.7% of the total national population in Mozambique, while the land area in the Study Area accounts for almost 5% of the national land area. Considering most land in the Study Area is habitable, free from any land use limitation, the Study Area faces shortages of population to develop its large territory. Population density is particularly low in the districts of Chifunde, Chiuta and Macanga, smaller than 10 per km<sup>2</sup> (Table1).

**Table 1. Land Area, Population and Density in the Study Area, Tete Province and Mozambique**

	Angonia	Chifunde	Chiuta	Macanga	Moatize	Tsangano	Tete City	Study Area	Tete Province	Mozambique
Land area (km <sup>2</sup> )	3,427	9,326	6,887	7,340	8,879	3,439	300	40,000	100,800	799,400
Population	247,999	48,498	50,372	46,515	109,103	106,557	101,948	711,028	1,144,604	15,278,334
Pop. density (/km <sup>2</sup> )	72.4	5.2	7.3	6.3	12.3	31.0	339.9	17.8	11.4	19.1

Source: 1997 Census, Tete Province and Mozambique, 1999.

The Study Area has a large number of returned refugees, estimated to be some 300,000 in the six districts alone, accounting for about 50% of the total population in these districts. The Study Area has higher ratios of single parent families at 18.2% of the total number of families, ranging from 24.9% in Chiuta to 15.3% in Tete city, as compared to the national average of 13.8%.

Literacy rates are generally lower in the Study Area and Tete province than the national averages. Literacy rate in Tete province were 50% for male and 19% for female in 1997, respectively lower than the national averages of 59% for male and 24% for female. There exist also urban-rural disparities with the literacy rate at 65% in urban areas and 28% in rural areas of Tete province.

The Study Area as a whole is slightly better off in the provision of health and education facilities than the national averages, but levels of health and education services are lower. This situation is due to acute shortages of qualified health personnel and teachers, and poor access to existing facilities by the majority of rural people.

#### (2) Economy and economic infrastructure

Poverty incidence in the Study Area and Tete province is higher than in Mozambique. The poverty incidence in Tete province was 82% in 1997, among the highest of all the provinces, while the incidence in Mozambique was 69% in the same year. The average

consumption in Tete province is estimated at US\$123 as of 1997, only 72% of the national average of US\$170.

The employment structure in the Study Area is 86% agriculture, 4% industry, and 10% services. The share of agriculture in the Study Area is slightly smaller than that in Tete province, while the industry and the services sectors have slightly larger shares in the Study Area than in Tete province, due to the inclusion of Tete city in the Study Area. The GRDP of the Study Area consists of 64% agriculture, 6% industry, and 30% services.

Despite the presence of the Cahora Bassa hydropower plant, electrification levels in the Study Area and Tete province are very low. Per capita electricity consumption was only 54kWh in 1997 in Tete province, lower than the national average of 64kWh.

Access to safe drinking water is quite limited, ensured for less than 40% of the population in the Study Area as a whole. In rural areas, the coverage may be more or less one-third of the rural population, short of national target of 40% coverage by the year 2000. The Study Area has practically no sizable irrigation or hydropower generation.

Provision of road infrastructure is slightly better in the Study Area than the national average. The road density per land area is 0.031 km/km<sup>2</sup> in the Study Area, comparable to the national average of 0.033km/km<sup>2</sup>, and the road density per 1,000 population is 2.7km in the Study Area, much higher than the national average of 1.6km, to serve the dispersed population. Surface conditions of roads in the Study Area are generally better than average conditions in Mozambique. In fact, the present conditions of the road system in the Study Area are generally adequate for the existing and near-future traffic due to low levels of income and cash economies, and low vehicle ownership.

Tete province ranks at the bottom of all the provinces in terms of telephone service coverage for districts. In 1998, only 50% of districts in Tete province were covered by telephone services, while the overall coverage was 79% nationally.

## **2.2. Spatial Structure and Natural Resources**

### **(1) Spatial structure**

Existing spatial structure of the Study Area may be characterized by (1) very low urbanization level without any large urban centers, (2) relatively good road system with adequate road surface conditions, and (3) extensive use of land and environment without proper management. The ratio of urban population is estimated at 24% of the total population in the Study Area, lower than the average urbanization ration at 29% in Mozambique. Tete city, the largest urban center in the Study Area with 101,984 population at the 1997 census, ranks seventh nationally and fourth in the central Mozambique.

Road conditions in the Study Area are generally adequate to serve existing and near future traffic, as mentioned already. Artery roads in the Study Area constitute important parts of

international transport links, and the transit traffic has some 60% share of the total cargo traffic volume in the Study Area.

While the population density is still quite low, the extensive use of land and environment has brought some areas close to the threshold of environmental capacity. Forest resources have been degraded in the Angonia highland area. Some 70% of the land area in the Study Area is classified into medium to high erosion hazard categories. Soil fertility has declined significantly in most productive areas of the Angonia plateau.

## (2) Natural resources

Despite the widespread practice of slash and burn and deforestation, the Study Area still holds a wide variety of flora and fauna. Potentials exist for reforestation with pine, mahogany and other hard woods as well as eucalyptus and various fruit trees.

The Study Area is relatively well endowed with water resources. The average annual rainfall ranges generally in 600-1,000mm, sufficient for rain-fed agriculture. Tributary basins on the left bank of the Zambezi river are underlain predominantly by sedimentary rocks to make the Study Area rich in groundwater and to ensure many tributaries perennial flow.

Of the huge hydropower potential in the Zambezi river basin, estimated at 8,899MW within Mozambique, some 4,000MW is conceived for early development on the Zambezi mainstream. Additional potentials on the tributaries may be effectively developed by multi-purpose dam projects with irrigation, water supply and flood control purposes as well.

The Study Area is endowed with a wide variety of metallic and non-metallic mineral resources. Most of them are at an early stage of exploration. The coal reserve in Moatize has the highest priority for development with well-established reserve of 2.4 billion tons and high quality. Magnetite is another promising mineral in the Study Area as it has a high iron content and associated also with other rare metals. Copper minerals in Chiuta are another prospective mineral resources, although a detailed study is necessary to assess the reserve and quality. Other promising mineral resources are graphite, limestone and dimension stones, having good export prospects to neighboring countries.

## 2.3. Administrative Structure

The administrative system in Mozambique is still highly centralized, despite the movement of political and administrative decentralization since the 1980's. The provincial government, in charge of planning, organizing, coordinating and controlling socio-economic activities within the province, is effectively still the local administration of the Central Government, applying directives from the Government as well as instructions from the provincial parliament. Deconcentration of ministry functions is proceeding only very

slowly because of the delay in standardization and modernization of administrative practice and shortages of skilled human resources. The district administration is generally much weaker in terms of both financial and human resources.

Municipalization is another line of action to effect the decentralization, and in 1998, 33 municipalities were created, embodying a modern concept of the real local government with autonomy. With only a short history, most municipalities are extremely weak, both financially and operationally. Moreover, clear distinctions have not been made between the functions of district offices of central ministries and municipal governments. At the level of locality and villages, traditional authorities complement the structure of the local administration. The traditional authority has a hierarchical structure with a paramount chief, chiefs and village headmen.

The administrative structure for the Angonia regional development consists mainly of GPZ, the Tete provincial government, six district administrations, two municipalities and local offices of central ministries. GPZ is a statutory body directly under the Prime Minister and has vast administrative and financial autonomy under the supervision of the Council of Ministers through an inter-ministerial commission. Its functions at present are confined largely to planning and coordination, and its activities are constrained by limited financial and manpower resources. As of the end of 2000, GPZ had a total of 51 staff members, of whom 33 were senior specialists, nine junior specialists and nine clerks. GPZ is currently under restructuring of its organization and expected to expand its staff capacity significantly by 2003.

The Tete provincial administration operates with 16 directorates and departments representing most central ministries, of which 11 directorates are closely related to the Angonia regional development. Among them, the provincial directorate of planning and finance has 103 staff members as of June 2001 including 14 senior accountants, four senior economic and financial planners, and four technicians. The provincial directorate of health has 1009 staff members and the provincial directorate of public work and housing has 96 staff members as of June 2001. The staff capacity of district administrations and Tete city is summarized in Table 2.

There exist two sets of organizational systems coexisting in a rural community: the chief-headman system based on traditional authority and the president-secretary system newly established to improve administration. The procedure to nominate and appoint the president, and the organizational structure with a secretary and committees under the president have not been well established for most localities. The roles of the traditional authority are gradually declining. The president-secretary system is becoming stronger as it is a coordinated product among farmers, governments and political parties for promoting socio-economic activities.

**Table 2. Staff Capacity in the Study Area by District/City**

Staff category	Angonia	Chifunde	Chiuta	Macanga	Moatize	Tsangano	Tete city	Study Area
Administrative	-	-	-	1	1	-	-	2
Technical	-	-	2	2	1	2	2	9
Assist. tech.	5	4	3	3	6	3	17	41
Other admin.	12	3	5	4	6	5	18	53
Workers	10	2	6	9	5	2	149	183
Service personnel & other	22	3	10	7	20	3	8	73
<b>Total</b>	<b>49</b>	<b>12</b>	<b>26</b>	<b>26</b>	<b>39</b>	<b>15</b>	<b>194</b>	<b>361</b>
Population per district staff	5,061	4,042	1,938	1,788	2,797	7,107	526	1,969

Source: Respective district administrations and Tete city municipality.

## **Chapter 3. Objectives, Scenario and Strategy for Angonia Regional Development**

### **3.1. Regional Development Objectives**

Three objectives for the Angonia regional development are defined as follows corresponding to major issues in the economic, social and environmental sectors, respectively.

- (1) To strengthen the economic structure through enhancing agricultural productivity, accelerating industrialization, and promoting service linkages, in order to expand and diversify high earning employment opportunities and to alleviate poverty in association with such opportunities;
- (2) To improve levels and quality of various social services through selectively strengthening rural infrastructure and expanding human resources base with community participation as a means to promote regional integration or social cohesiveness; and
- (3) To restore and enhance the environmental capacity through establishing environmentally sound and sustainable production systems in rural and urban areas with proper management organizations based on private interests and community participation.

### **3.2. Alternatives for Angonia Regional Development**

The Angonia region faces five fundamental problem factors: (1) remote location from the developed south, (2) after effects of the civil war, (3) weak development administration, (4) delay in development of basic infrastructure, and (5) enclave type communities with minimal linkages. Each factor is clarified to define alternative development strategies.

The factor (1) may not be a constraint, if the Angonia regional development takes advantage of the closeness to other regions and neighboring countries. Promotion of regional linkages and outward orientation may constitute a sensible strategy. To address the problem factor (2), some kind of internal integration or promotion of social cohesiveness would be necessary. This may be part of good initial strategy to overcome the problem factor (5) as well. Corresponding to the factor (3) development administration may be strengthened at local, regional or central level, reflecting varying emphasis on internal integration, regional linkages and outward orientation. The problem factor (4) indicates alternative strategies to emphasize rural infrastructure, regional infrastructure or inter-territorial infrastructure. To overcome the problem factor (5), outward orientation strategy may be taken, probably in steps, at different levels: local, regional and inter-territorial.

Incorporating these strategic elements indicated by the different problem factors, three



alternatives may be conceived for the development of the Angonia region. They are defined as:

- Alternative 1: Internal integration;
- Alternative 2: Regional linkages, and
- Alternative 3: Export drive.

These are distinct alternatives conceptually, and it is possible to pursue development under any of these alternatives in any region, subject to mobilization of various development resources. Selecting one for the Angonia region is not the idea here. These alternatives may have many common elements, and one alternative may fit better to some geographic areas while another to some other areas. Also they have different phasing implications. These alternatives are presented here to clarify a range of choices and to guide the formulation of the best alternative for the Angonia region. Each alternative is described and the three alternatives are compared in Table 3.

(1) Internal integration alternative

This alternative pursues indigenous resources-based and local market-oriented development. This is in line with an authentic approach to regional development to utilize indigenous resources by and for the benefit of local people and communities.

Enclave type communities at present would be inter-linked with neighboring communities, towns and districts within the region for more viable socio-economic activities. More commodities are produced to market outside production areas under this alternative, and in particular agricultural products are processed in neighboring towns and districts. This will help to localize value-added of agro-industrial products, minimizing leakages to other regions. Improvement of rural infrastructure would promote inter-linkages between communities, supporting transport of goods, processing and related services, and communications.

This alternative naturally fits best to local conditions. It may ensure a sustainable growth, if the indigenous resources are properly managed. This alternative, however, will not always bring about a rapid growth of the economy due mainly to a limitation on availability/development of resources and small local markets. It would not take advantage of the strategic location of the Angonia region, represented by the availability of raw materials and other goods from neighboring regions and export markets.

This alternative would maintain largely the dispersed population distribution and better rural-urban balance, as comparatively more employment opportunities may be created in rural areas and small towns by agro-processing industries and agro-related services as well as the primary production. Social cohesiveness would also be better maintained or further promoted more easily under this alternative.

**Table 3. Alternatives for Angonia Regional Development**

	<b>Alternative 1 Internal integration</b>	<b>Alternative 2 Regional linkages</b>	<b>Alternative 3 Export drive</b>
<b>Definition</b>	Indigenous resources-based, local market-oriented development	Combining resources in neighboring regions to produce for domestic market	External resources-driven, export market-oriented development
<b>Evaluation</b>			
<u>Economy</u>	<ul style="list-style-type: none"> <li>• Low economic growth (4-5% p.a.)</li> <li>• Share of agriculture in GRDP: ~40%</li> </ul>	<ul style="list-style-type: none"> <li>• Medium economic growth (6-7% p.a.)</li> <li>• Share of agriculture in GRDP: ~30%</li> </ul>	<ul style="list-style-type: none"> <li>• High economic growth (over 8% p.a.)</li> <li>• Share of agriculture in GRDP: ~20%</li> </ul>
<u>Social</u>	<ul style="list-style-type: none"> <li>• Employment generation mostly in rural areas and small towns</li> <li>• Easy to maintain integration of rural societies</li> <li>• Improvement of access to primary health care, primary education, markets, and support for community livelihood needed</li> </ul>	<ul style="list-style-type: none"> <li>• More dynamic socio-economic activities through inter-regional communications</li> <li>• Increased inter-regional migration</li> <li>• Formation of new urban communities in secondary towns</li> </ul>	<ul style="list-style-type: none"> <li>• Concentration of population and economic activities in Tete city and vicinities</li> <li>• Traditional culture and family ties undermined</li> <li>• Measures against communicable diseases needed</li> </ul>
<u>Environment</u>	<ul style="list-style-type: none"> <li>• Local people to be organized with incentives for environmental management</li> </ul>	<ul style="list-style-type: none"> <li>• Possibilities of environmental pollution due to larger agro-processing, resources-based and water/power intensive industries</li> </ul>	<ul style="list-style-type: none"> <li>• Possible soil degradation due to expansion of export crops production</li> <li>• Degradation of urban environment and neglect of rural environment due to high population growth and concentration</li> </ul>
<u>Spatial</u>	<ul style="list-style-type: none"> <li>• Linkages between rural communities and small towns to be strengthened</li> <li>• Restoration of Sena railway not justified</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement of linkages between secondary towns and Tete city; development of inter-regional linkages from them</li> <li>• Low level restoration of Sena railway</li> </ul>	<ul style="list-style-type: none"> <li>• Tete city as a center for inter-regional and international trade and related services</li> <li>• Full restoration of Sena railway; possible extension to Malawi</li> </ul>
<u>Development management</u>	<ul style="list-style-type: none"> <li>• Development management by the local initiative</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening of development administration at provincial/regional levels</li> </ul>	<ul style="list-style-type: none"> <li>• High level of development management and the Government initiative necessary</li> </ul>

Source: JICA Study Team.

(2) Regional linkages alternative

This alternative extends the first one for both resources and markets. Resources in neighboring regions would be utilized as well as indigenous ones to produce for both local and regional markets.

This alternative would promote inter-linkages between the Angonia regions and other

regions. Some forerunners of activities already exist to fall under this alternative. Recently new industries were established in Tete city to process raw materials from Zambezia province: copra processed in soap and cashew processing. Some of these products are marketed outside the region. Also the newly established Angonia teacher training school serving the entire Tete province is an example of service activities having cross-region market. Potentially the region may be a granary to supply grains throughout the central Mozambique. Improvement of regional infrastructure would be important to promote inter-regional linkages such as inter-city highways, truck/bus terminals and ports/airports. This alternative would encourage certain agglomeration of population in larger urban centers, where major processing and service activities would concentrate.

### (3) Export drive alternative

This alternative pursues external market-driven development. To support this alternative, resource base would also expand further, including human and financial resources from outside.

Under this alternative, even indigenous resources are utilized for external markets. Typical economic activities are expansion of export crops, export drive for resource-based and labor-intensive industries and rapid expansion of trade, transport and communications, and private services sub-sectors. Export processing would be undertaken, utilizing raw materials and other goods from neighboring countries. International tourism and related services also fall in this category.

Products development and development of markets for new products hold a key for the Angonia region to pursue this alternative. This may necessitate substantive introduction of foreign technologies as well as foreign capital. At the same time indigenous capacity for R&D needs to be enhanced.

This alternative would encourage accelerated urbanization, and in particular concentration of urban population in Tete city and its vicinities. Much upgraded infrastructure and urban services there are pre-requisites to attracting foreign investments. Inter-territorial infrastructure needs to be upgraded, including highways, railways, container depots and international airports. A careful approach is necessary to deal with possible social and environmental problems under this alternative.

Some higher-order services may be established under this alternative to serve neighboring regions and countries as well as local people. They may include specialized education/training and health services, and other central functions in the context of the Zambia-Malawi-Mozambique (ZMM) growth triangle initiative. This alternative would call for a higher degree of development management, as more external resources would be introduced; otherwise it may result in environmental degradation and social disruption.

### **3.3. Development Scenario**

Three alternatives have been presented to clarify the range of choices and options for the Angonia regional development. As stated earlier, one alternative may fit better to some areas, while another to some other areas. One alternative may be adopted more easily for the short to the medium terms, while another may not be applied fully during initial phases.

The Angonia regional development is to be pursued by combining favorable elements of the alternatives in time and space for the balanced development between economic, social and environmental sectors. Considerations in combining various elements are locational conditions, development phasing, existing development policies, and existing and future institutional set-ups for regional development planning and administration.

Given the low level of economic activities and the enclave type communities, the initial Angonia regional development will be pursued largely under the internal integration alternative. Local communities are encouraged to organize their people and produce agricultural goods for marketing and processing outside their respective communities. At the same time, existing regional linkages would be further developed mainly in Tete city. Export production will be limited to be in a small scale, mostly informal, and in a few towns near the border during the initial stage.

In the subsequent stage, regional linkages will be fully exploited in the secondary and the tertiary industries. More industries will be established in Tete city and its vicinities to process raw materials from the neighbouring provinces as well as indigenous resources. In addition to the new Angonia teacher training school, improved social facilities for education, skill development and health care will be provided to serve the entire Tete province or even beyond the province. In fact, Tete city with its vicinities is expected to become a functional capital of the entire central Mozambique.

Export drive will be undertaken in steps after the initial internal integration attains some success. It may start with strengthening of a few existing crops such as maize, potatoes and fruits. Productivity will be increased, quality improved, and price competitiveness enhanced through small scale irrigation, improved use of input and better farm management to establish/strengthen niche markets in neighbouring countries. New export products will develop subsequently such as diversified industrial crops, agro-processed products, coal and coal-based products and construction materials.

Internal integration is the essential condition for the Angonia region to pursue self-reliant and sustainable development, and thus this strategy will be fully applied to the Angonia regional development from the initial stage. Regional linkages will also be exploited from the beginning, but this strategy may give way to the export drive strategy as the Angonia region is fully integrated for sustainable development. Export drive should apply mainly to the neighbouring countries, and full application of this strategy is subject to the attainment

of a high level of development management.

### **3.4. Basic Strategy**

The Angonia regional development will start with the internal integration, utilizing existing regional linkages and further developing them, and undertake the export drive in steps. Two-pronged strategy for spatial development may support the Angonia regional development. Under this strategy, improvement of rural infrastructure for internal integration and upgrading of inter-regional and international infrastructure will be undertaken in a complementary manner.

Outward-oriented production at different levels will support the phased development of the Angonia region. First, local communities are encouraged to produce agricultural goods for marketing and processing outside their respective communities in line with the internal integration. Such activities will be broadened and diversified progressively for regional and export markets.

Development administration needs to be enhanced at different levels to support the Angonia regional development. For the internal integration and the regional linkages capacities of local administrations and the Tete provincial government should be much enhanced as well as local participation in line with the Government policy. Full export drive is subject to the Government initiative that may be effected through GPZ.

Basic strategy for the Angonia regional development is established with the three components described above: two-prong strategy for spatial development, outward-oriented production at different levels, and enhancement of development administration at the local/region levels. Each component is further clarified.

#### **(1) Strengthening the spatial structure**

At present, basic infrastructure is grossly inadequate in the dominant rural area of the Study Area. To improve the situation in a cost-effective way, two directions should be pursued. The first direction is accelerated urbanization. The urbanization in the Study Area is not only inevitable but also desirable. It should be guided properly through the provision of various urban infrastructure and facilities.

The second direction is selective strengthening of rural infrastructure. To improve the social services delivery for the majority of rural people, improvement of rural infrastructure needs to be associated with development of qualified service personnel. While more qualified service personnel would be trained, their deployment in rural areas is subject to the provision of proper housing and other benefits. Therefore, efforts to improve rural infrastructure should be taken in their entirety and concentrated strategically in selected rural service centers of higher potentials.

These improvements of infrastructure in urban and rural areas should be part of

strengthening the spatial structure for the Angonia regional development as a whole. They should be in line with the upgrading of inter-regional and international transport infrastructure. Conversely, the improvement of basic infrastructure in rural areas and the accelerated urbanization should take advantage of the inter-regional and international transport infrastructure upgrading. The latter should cover highways upgrading, inland container depots, bus/truck terminals, river transport, international airport and the railway.

(2) Promoting outward-oriented production

At present, most small farmers do not have strong motivation to increase their production beyond their subsistence levels, as marketing opportunities are limited. Most of them are in subordinate position to small traders coming from outside to purchase their meager surplus at low prices and to supply basic commodities. To make fundamental changes to this basic structure, outward-oriented production should be promoted.

Small farmers should be organized to produce various products, existing or new, to market outside their communities, districts or even region/country. Agricultural extension and other support services need to be provided to organized farmers. As external markets are developed, measures should be taken to increase agricultural productivity such as irrigation, use of improved seed and fertilizer, introduction of better implements, and mechanization at their initiative.

Outward-oriented production should be promoted in other sectors as well. The Study Area should take advantage of international and inter-regional transit move of commodities, and process raw materials and intermediate goods from other regions/countries into final products for marketing outside. This kind of export processing should increase in the Study Area. Other resource-based industries should produce for external markets. Moreover, some higher-order services may be established in the Study Area, most likely in Tete city, to serve not only local people but people from neighboring countries, such as advanced health care and research, higher education, and international tourism related services.

(3) Enhancing development administration at regional/local levels

Development planning and administration should be much strengthened at the local level. This is a long-term goal in line with the government policy for decentralization, and cannot be realized in the short to medium term, given the very weak financial and administrative capacities of local administrations. These functions should be strengthened first at the provincial or the regional level, and GPZ, in cooperation with the provincial government of Tete, is in the best position to perform them for the Study Area.

The following are among the functions to be strengthened at the regional and the local levels:

- urban planning and management within the regional development context to support the accelerated urbanization,
- water resources development and management,
- marketing and investment promotion, including a one stop service function for investors,
- planning and implementation of livelihood development projects in cooperation with local administrations,
- coordination of training activities for local enterprises, and conduct of training for local planning, environmental management, and social services delivery, and
- advisory for local taxation system, fund procurement, and financial management of local administrations.

## Chapter 4. Angonia Region Development Frameworks

### 4.1. Socio-economic Framework

A socio-economic framework has been worked out for the Angonia regional development up to the year 2025. The framework specifies the level of development expected in the target year by selected socio-economic indices projected in a mutually consistent way.

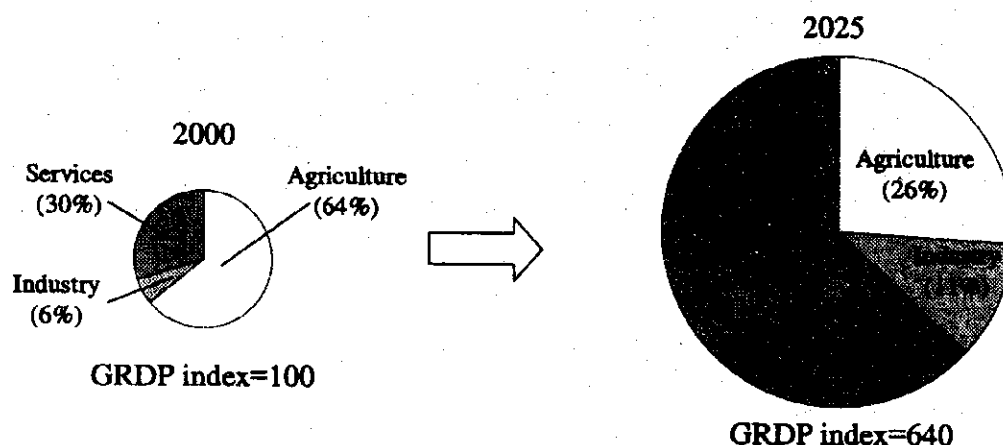
The gross regional domestic product (GRDP) of the Angonia region is projected by assuming growth rates by sector for different periods as given in Table 4. The economy of the Angonia region is projected to grow at the average annual rate of 7.8% throughout the planning period with significant change in sector structure as illustrated in Figure 2.

**Table 4. Economic Growth Rates of the Angonia Region by 2025**

Period	(Unit: % per annum)			
	Whole economy	Agriculture	Industry	Services
2000-2005	5.5	2.6	8.8	10.3
2005-2015	10.0	5.2	13.4	14.3
2015-2025	8.5	3.0	8.9	8.0
2000-2025	7.8	3.8	10.7	11.0

Source: JICA Study Team.

**Figure 2. GRDP Projection for the Angonia Region, 2000/2025**



The labor force in the Angonia region is projected to increase from 260,000 in 2000 to 550,000 in 2025. The population of the Angonia region is projected to increase from 761,000 in 2000 to 1,504,000 in 2025 at the average annual rate of 2.8% (Table 5).

**Table 5. Population Growth in the Angonia Region, 2000/2025**

	2000	2025	Average growth, 2000/2025 (%) p.a.
Urban Area	201,800	654,500	4.8
Rural Area	559,800	849,700	1.7
Total	761,600	1,504,200	2.8

Source: JICA Study Team.



## 4.2. Spatial Framework

### 4.2.1. Land Use framework

The present land use has been analyzed by using a geographic information system (GIS), and results are summarized by district/city in Table 6. Land suitability for various agricultural uses has been analyzed by combining a soil map and an agro-ecological map with a GIS. Combining the present land use and the land suitability by a GIS, future land use has been developed. Land use conversion rules are given in Table 7. Figure 3 shows the indicative future land use.

**Table 6. Present Land Use in the Angonia Region**

(Unit: km<sup>2</sup>)

	Angonia	Chifunde	Chiuta	Macanga	Moatize	Tsangano	Tete city	Study Area
1. Cultivated land	1,670	293	72	255	124	592	65	3,071
2. Developed areas	2	0	0	1	0	0	17	20
3. Bare/degraded/flood-prone land	65	9	4	0	5	1	2	86
4. Shrubland	251	450	529	241	452	991	134	3,048
5. Bushland with varying density	373	1,032	2,851	186	517	344	24	5,327
6. Open forest	99	3,419	1,151	474	3,843	309	21	9,316
7. Other forests	757	4,303	2,509	6,040	3,450	1,424	0	18,483
8. Water areas & miscellaneous uses	43	0	9	0	38	0	23	113
<b>Total</b>	<b>3,260</b>	<b>9,506</b>	<b>7,125</b>	<b>7,197</b>	<b>8,429</b>	<b>3,661</b>	<b>286</b>	<b>39,464</b>

Source: GIS database.

**Table 7. Land Use Conversion Matrix**

Existing land use	Land use potential				
	Specialized & diversified	Intensive	Semi-intensive	Semi-extensive	Not suitable
1. Cultivated land	①	②	③	③	④
2. Developed Areas	⑥	⑥	⑥	⑥	⑥
3. Bare/degraded/flood-prone land	⑦	⑦	⑦	⑦	⑦
4. Shrubland	①	②	③	③	④
5. Bushland	①	②	③	③/④	④/⑤
6. Open forest	②	③	④	④	⑤
7. Other forests	②	⑤	⑤	⑤	⑤
8. Water areas	⑦	⑦	⑦	⑦	⑦

Future land use: ① Diversified agricultural land, ② Agricultural land for intensive/semi-intensive cultivation, ③ Other agricultural land, ④ Grazing land, ⑤ Forests, ⑥ Development areas, ⑦ Miscellaneous.

Source: JICA Study Team.

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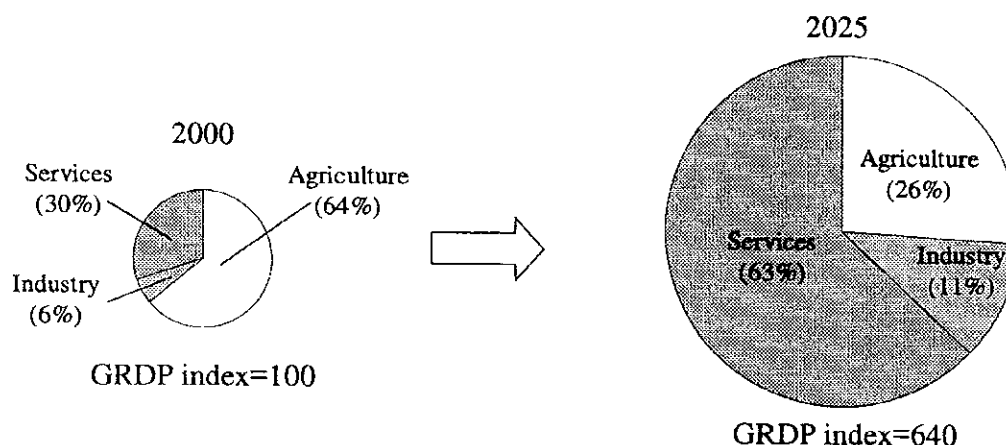
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2. Developed Areas	⑥	⑥	⑥	⑥	⑥
3. Bare/degraded/flood-prone land	⑦	⑦	⑦	⑦	⑦
4. Shrubland	①	②	③	③	④
5. Bushland	①	②	③	③/④	④/⑤
6. Open forest	②	③	④	④	⑤
7. Other forests	②	⑤	⑤	⑤	⑤
8. Water areas	⑦	⑦	⑦	⑦	⑦

Future land use: ① Diversified agricultural land, ② Agricultural land for intensive/semi-intensive cultivation, ③ Other agricultural land, ④ Grazing land, ⑤ Forests, ⑥ Development areas, ⑦ Miscellaneous.

Source: JICA Study Team.

**Figure 3. Indicative Future Land Use**

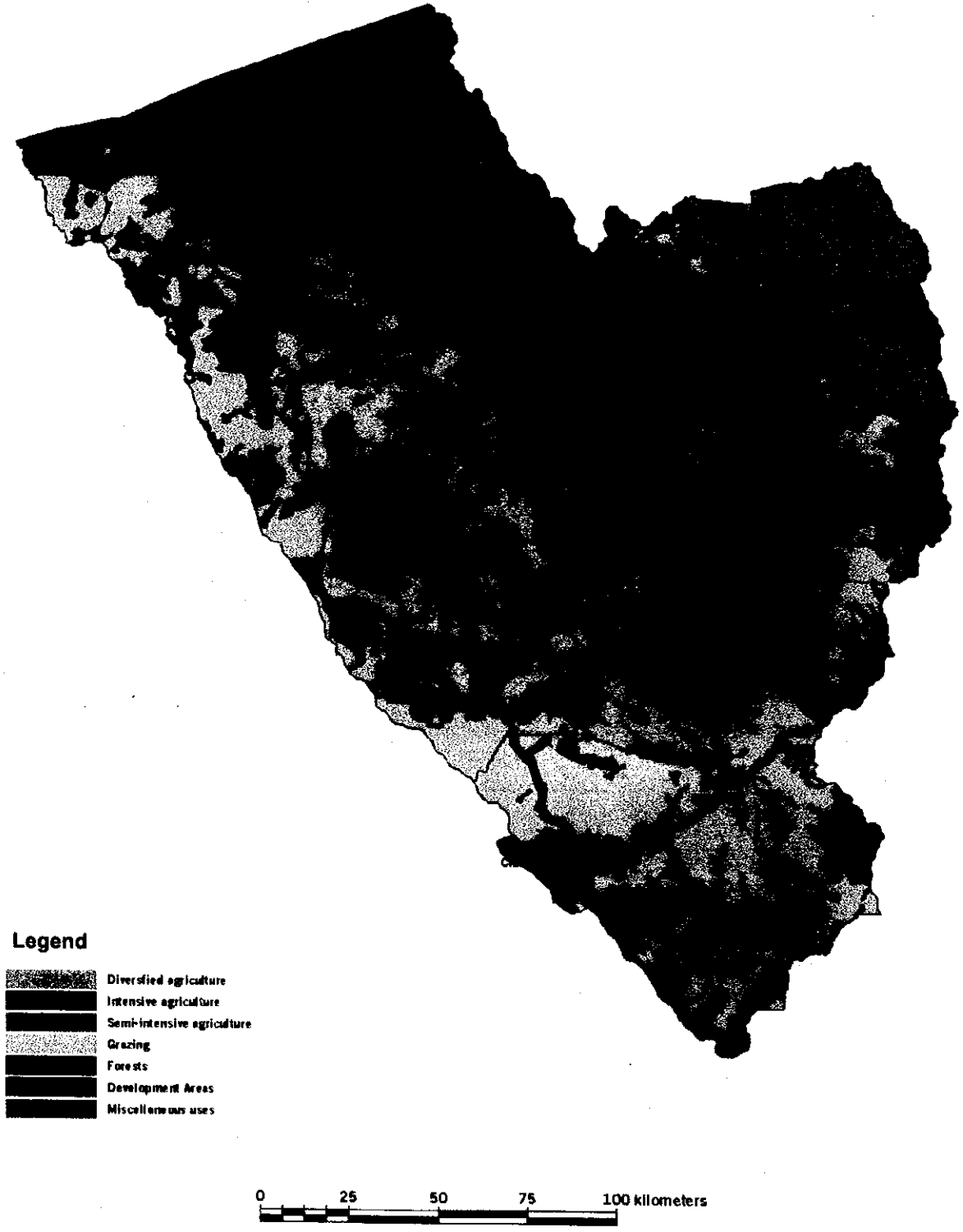
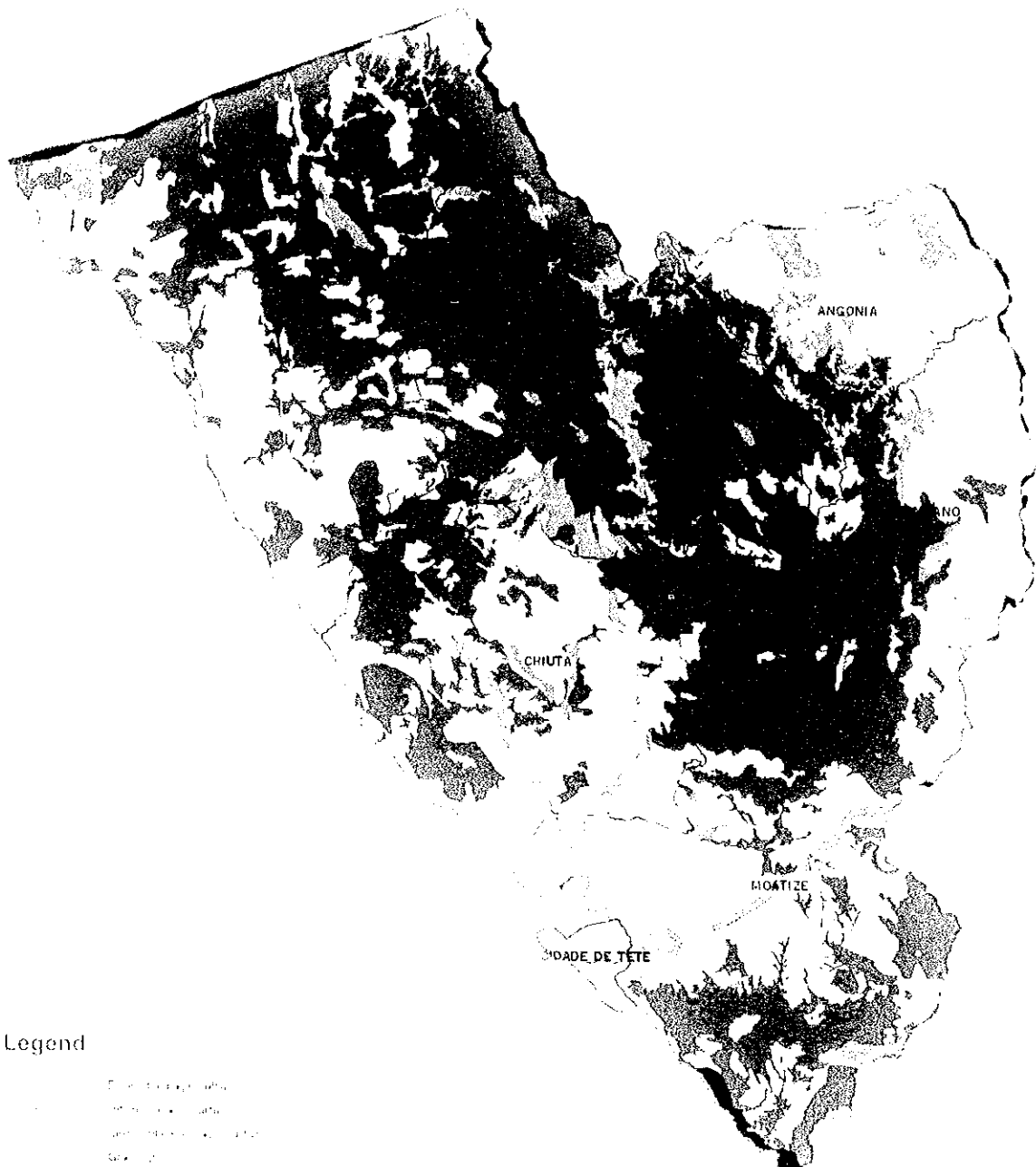


Figure 3. Indicative Future Land Use



Legend

- Empty land
- Agricultural land
- Urban land
- Forest
- Water
- Other
- Mountain

Scale: 1:100,000

#### 4.2.2. Artery system

Three regional artery roads may be identified in the central Mozambique. All of them are international arteries. As shown in Figure 4, these are the following:

- 1) Beira corridor: Zimbabwe – Chimoio – Beira (Indian Ocean)
- 2) North-south artery: Zambia – Tete city – Chimoio – Beira (Indian Ocean), and
- 3) East-west artery: Malawi – Tete city – Changara – Zimbabwe.

In addition, the following may be defined as the secondary artery to supplement the three regional artery roads:

- Secondary artery: Tete/Moatize – Mutarara/Caia – Quelimane (Indian Ocean)

The artery system for the Study Area may be defined within the framework of the regional artery system for the central Mozambique. Naturally, two artery roads are defined as the north-south and the east-west arteries as shown in Figure 5. The north-south artery links Zambia in the north and Tete city with ER548, EN221 and EN222, and extends to the south with EN103. The east-west artery links Malawi in the east and Tete city with EN103, which extends through Changara to Zimbabwe to the west.

#### 4.2.3. Urban hierarchy

Within the spatial framework of the central Mozambique, Tete city has potentials to become a functional capital of the region. Tete city is centrally located in the central Mozambique, on the Zambezi river, and at the nodal point in the regional artery system. It has large land availability for further urbanization, and productive hinterlands. The only problem is that it is too small at present.

In fact, development of Tete city holds a key for the Angonia regional development in a few important ways. First, delivery of various social and urban services for the majority of local people can be effectively improved by upgrading service functions of the city and establishing service networks to cover other areas. Second, linkages with other regions can be strengthened effectively by improving transport and communication infrastructure in the city and by promoting trade and processing activities of commodities to be provided from outside. Third, Tete city may be equipped with some center functions within the context of the ZMM growth triangle initiative.

To serve these functions, accelerated urbanization is desirable for Tete city. Given the small population size at present, complementary development with the neighboring town of Moatize may be conceived. For manufacturing industries, one possibility is for Moatize to specialize in resources-based industries, and for Tete to develop more consumer goods industries based on inter-regional trade and existing agglomeration. Various urban infrastructure in these cities should be upgraded also in a complementary manner.

Figure 4. Artery System for Central Mozambique

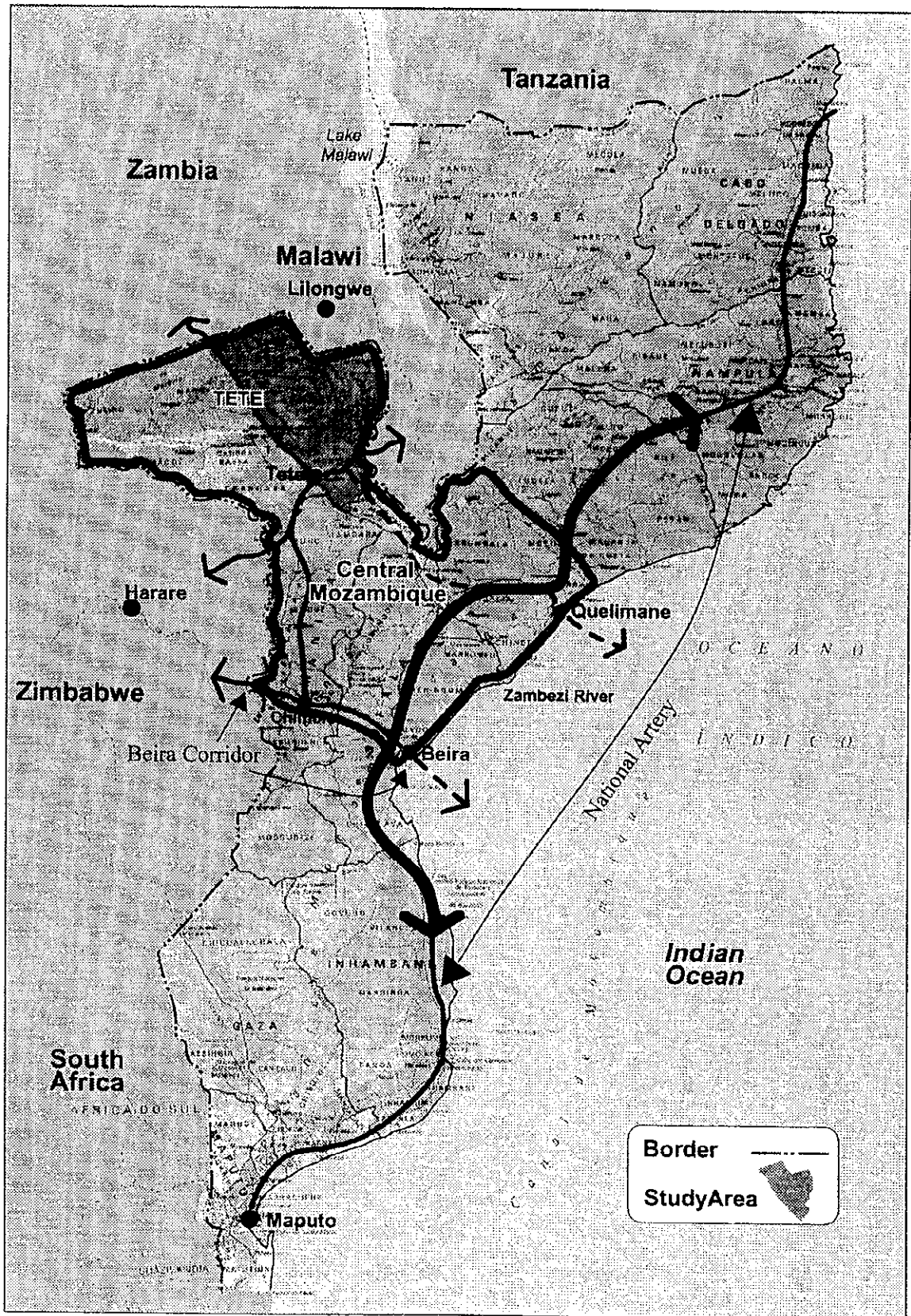
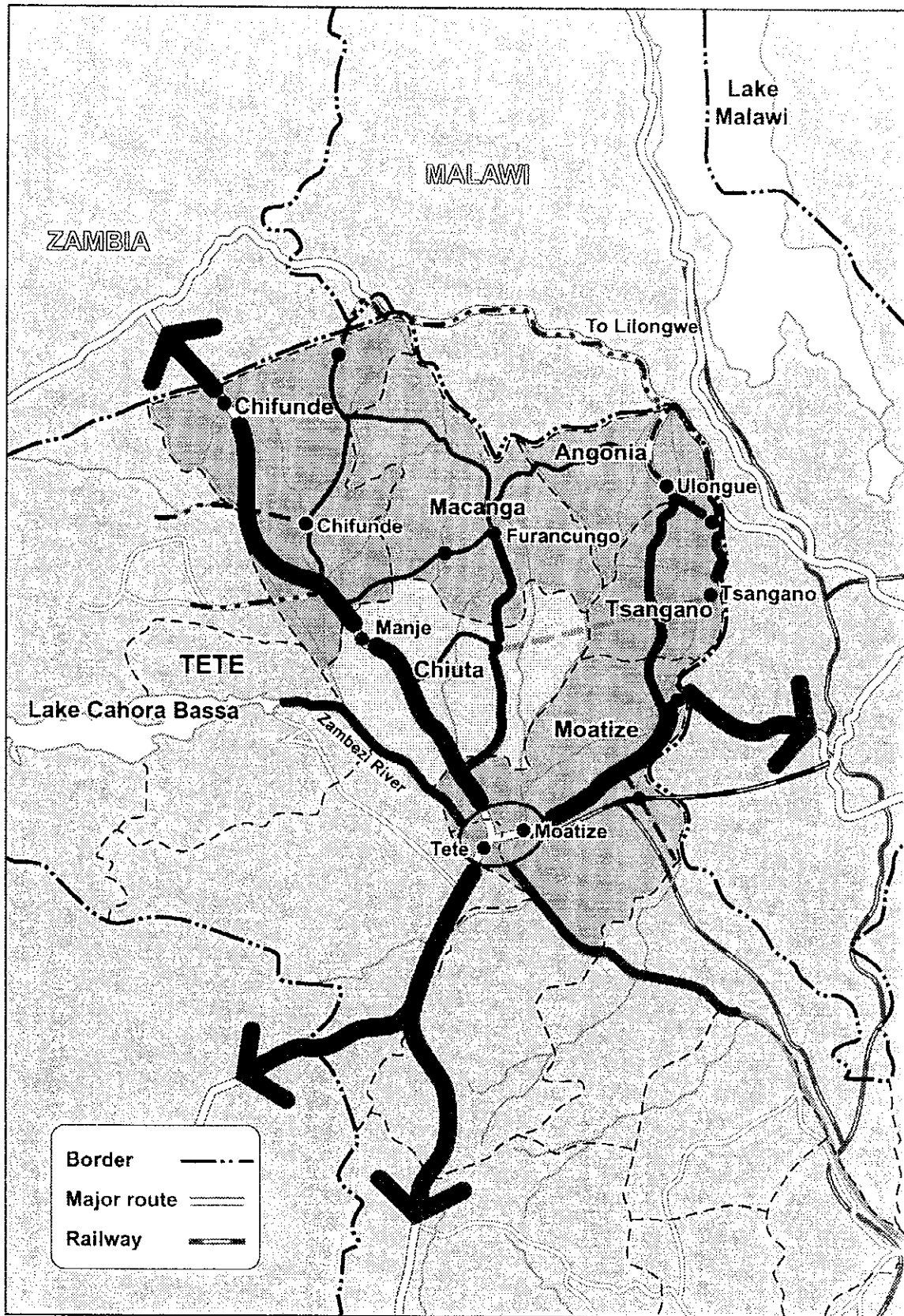


Figure 5. Artery System for the Study Area





With this strong core urban area at the top, a hierarchical structure of urban centers should be established in steps with functional division among urban centers at different tiers. The five other district capitals will naturally constitute the second tier of urban centers. At the third tier, selected settlements may be strengthened with improved infrastructure to serve respective neighboring settlements for agricultural support services and basic social services. These settlements may be called urban service centers. At the fourth tier, rural service centers will provide community and basic social services for people in the centers and their respective rural hinterlands.

The hierarchical system of settlements is summarized in Table 8. The Tete-Moatize core urban area may have the total population of 700,000 in 2025, of which some 80% may be urban. The population size of other centers is expected to be more or less as follows: 20,000-40,000 (60% urban) for secondary urban centers, 5,000 (50% urban) for service urban centers, and 2,000 (mostly rural by definition) for rural service centers.

**Table 8. Urban Hierarchical System for the Angonia Region**

Level of Hierarchy	Urban Center	Functions
Regional Center	Tete	Multi-functional urban center and functional capital of central Mozambique; commercial and trade center, and tourism gateway; specialized in consumer goods industry
	Moatize	Industrial center specialized particularly in resource-based manufacturing; energy and mining center
Secondary Urban Centers	Ulongue	Agro-related trading and agro-processing center; tourism sub-center
	Manje	Agricultural trade and distribution center
	Furancungo	Agricultural service center
	Chifunde	Social service center
	Tsangano	Agricultural service center
Service Urban Centers	Domue	Social service sub-center; agricultural sub-center
	Mualadze	Social service sub-center
	N'sadzu	Border trade center; social service sub-center
	Kazula	Agricultural service center
	Chidzolomondo	Social service sub-center
	Zobue	Border trade center; social service sub-center
	Cambulatsitsi	Social service sub-center
	Ntengo-Mbalme	Social service sub-center
Rural Service Centers	About 25 centers to be selected	Community centers

Source: JICA Study Team.

## Chapter 5. Development Projects and Programs

The Angonia regional development to the year 2025 will be supported by a set of development projects and related institutional measures constituting together the Angonia regional development master plan. Some institutional measures are incorporated in the development projects to define programs. Institutional arrangements for the implementation of the master plan are recommended in the next chapter.

### 5.1. Structure of Angonia Regional Development Master Plan

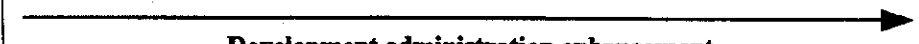
The three components of the basic strategy for the Angonia regional development will be applied to different parts of the region with changing emphasis by phase as illustrated in Figure 6. Corresponding to the three components, all the proposed projects and programs are packaged into four broad programs:

- (1) Urban Development Initiative,
- (2) Rural Socio-economy Enhancement,
- (3) Spatial Structure Strengthening, and
- (4) Local Accountability Enhancement.

Urban Development Initiative pursues the outward orientation in urban areas, focusing on Tete city and its vicinities, to lead the Angonia regional development at a high level, and also on creating another urban area to serve the Angonia highland. Rural Socio-Economy Enhancement pursues outward orientation in rural areas to diversify activities and raise productivity so that rural people can link up with more advanced areas.

Spatial Structure Strengthening pursues the spatial structure strengthening strategy at different levels to facilitate the integration of rural and urban activities, and between the Angonia region and neighboring regions and countries. Local Accountability Enhancement pursues the development administration enhancement strategy on a much more expanded basis to ensure that human, social and environmental capacities in the region will increase to support all the activities indicated above (Figure 6).

**Figure 6. Relationships between Three Components of Basic Strategy**

	Outward-oriented production		
Spatial structure strengthening	Phase 1	Phase 2	Phase 3
Intra-regional	Throughout rural areas	Throughout the Study Area	—
Inter-regional	Tete city	Secondary towns Tete city and vicinities	Throughout the Study Area
International	Border-trade (dominantly informal)	Border trade (formalized) Tete city	Tete-Moatize corridor A few secondary towns
	 <b>Development administration enhancement</b>		

## 5.2. Development Projects and Programs

A total of 48 projects and programs have been formulated in different sectors. They are packaged into the four broad programs as described above. Additional projects have been formulated through community workshops. These projects constitute a special program for participatory development. All the proposed projects and programs are listed by broad program in Tables 9 through 13 with title, location, implementing agencies, and objectives. Profiles of all the projects and programs are contained in Project Report (separate volume).

## 5.3. Indicative Investment Schedule

The public investment that may be allocated to the Angonia region up to the year 2025 is estimated as shown in Table 14. This estimate is based on the expected economic growth at the national level, the total and the public investments as percentages of the GDP, and the allocation of the total public investment to the Angonia region in proportion to future population. As shown the public investment allocation to the Angonia region is US\$231.9 million in Phase 1 (up to 2010), US\$435.3 million in Phase 2 (2010-20), and US\$311.2 million in Phase 3 (2020-25) for a total of US\$978.4 million over the 25-year period.

**Table 14. Estimation of Public Investment Allocation to the Angonia Region**

	2000	2010	2020	2025
GDP (US\$ $\times 10^6$ )	4,500	8,060	14,430	19,310
Incremental GDP (US\$ $\times 10^6$ )	3,560	6,370	4,880	
Cumulative public investment (US\$ $\times 10^6$ )	5,171	9,262	6,313	
Cumulative private investment (US\$ $\times 10^6$ )	5,171	11,114	7,575	
Cumulative total investment (US\$ $\times 10^6$ )	10,342	20,376	13,888	
National population ( $10^3$ )	17,242	21,857	27,170	29,998
Population in the Study Area ( $10^3$ )	761.6	994.1	1,316.6	1,504.2
Share (%)	4.42	4.55	4.85	5.01
Public investment in the Study Area (US\$ $\times 10^6$ )	231.9	435.3	311.2	

Source: JICA Study Team.

Within this framework, an indicative public investment schedule is prepared, including all the proposed projects and programs. Investment costs of all the projects and programs are roughly estimated, but no allocation is made for those projects/programs to be implemented by the private sector initiative. As shown in Table 15, the total public investment costs are US\$203.7 million in Phase 1, US\$390.2 million in Phase 2, and US\$144.6 million in Phase 3, corresponding to 87.8%, 89.6% and 46.5% of the expected investment allocation in respective phases. Considering other regular development expenditures, crowding out of some projects/programs may occur during Phase 1 and Phase 2, unless additional public investment is allocated.

**Table 9. Urban Development Initiative with 13 Projects/Programs**

No.	Project Title	Location	Implementing Agencies	Objectives
1.1	Tete-Moatize Core Urban Development	Tete city, Moatize town and vicinities	Inter-agency, private firms GPZ (coordination)	(1) To create an urban core with high grade urban infrastructure to attract investments; and (2) To provide high grade urban services for the central Mozambique and some center functions for the ZMM-GT
1.2	Tete City Water Supply Expansion	Tete city	MPWH, Agua de Tete	(1) To relieve urgently stress on existing water supply system in Tete city due to rapid population increase; and (2) To improve quality of city water supply continuously to meet increasing demand.
1.3	Urban Roads Improvement	Tete city, Moatize town	ANE, Tete city, Moatize town	(1) To improve urban roads in Tete city and Moatize town to support urban-based economic activities; and (2) To improve living environment of local residents.
1.4	Tete Corridor Power Supply Expansion	Tete city and corridor	EDM	(1) To improve the power supply in Tete city; and (2) To expand the power supply along the corridor up to Zobue.
1.5	Tete City Telecommunications	Tete city	TDM	To strengthen linkages between Tete city and countries and major cities in neighboring regions.
1.6	Agro-Industrial Zone Establishment	Moatize	MPWH, GPZ, private firms	(1) To introduce simplified procedures concerning business activities including special incentives for the Zambezi Valley; and (2) To provide high grade infrastructure for investment promotion.
1.7	Business Center Establishment	Tete city	MPWH, Ministry of Interior, private firms.	(1) To create institutional framework and establish a center to allow private business initiatives to be smoothly processed and authorized; (2) To provide all kinds of market information; and (3) To support these functions with advanced IT and audio equipment.

(No.)	(Project Title)	(Location)	(Implementing Agencies)	(Objectives)
1.8	Industrial Technology and Information Research Center	Tete city	Ministry of Industry and Commerce	To provide production technology and information necessary for business management.
1.9	Moatize Coal Development	Moatize	Private firms	(1) To expand production of Moatize coals; and (2) To diversify coal products through sorting and pre-treatment as well as cokes and bio-briquettes manufacturing.
1.10	Institute of Mines and Geology Support Program	Tete city	MINED	(1) To improve facilities at the Institute of Mines and Geology; and (2) To expand subjects and curricula at the Institute.
1.11	Moatize Coal-fired Thermal Power Plant	Moatize	Private firm	(1) To utilize effectively large amount of thermal coal to be generated by coking coal production; and (2) To contribute to making the Angonia region a power export center in the Southern Africa
1.12	Small-scale Iron and Steel Manufacturing	Moatize	Private firm	(1) To supply high quality steel products, utilizing local resources; and (2) To introduce a leading industry for vitalization and strengthening of local economic linkages.
1.13	Angonia Highland Integrated Urban Development	Ulongue and vicinities	Inter-agency, GPZ (coordination)	(1) To pursue highly productive development through integrated development of agriculture, agro-industry and related services; and (2) To create a high density area for effective provision of social services.

Source: JICA Study Team.

**Table 10. Rural Socio-economy Enhancement with 11 Projects/Programs**

No.	Project Title	Location	Implementing Agencies	Objectives
2.1	Integrated Rural Development Program	Zambezi lowland areas	Inter-agencies, GPZ (coordination)	(1) To expand settlements in sparsely populated Zambezi lowland areas by improving rural infrastructures; and (2) To create productive rural environment based on more intensive agriculture.
2.2	Small Irrigation Schemes Development	Along small tributaries of six districts	MARD, the private sector	(1) To convince farmers of effectiveness of irrigation in increasing production and yields; and (2) To develop and accumulate experiences in irrigated agriculture and marketing of diversified crops.
2.3	Integrated Farming Systems Development Program	Angonia highland areas	MARD	(1) To establish various integrated farming systems by small farmers; and (2) To increase production of both crops and livestock and surpluses for processing.
2.4	Revuboe Multipurpose Dam	Revuboe river	MPWH, MARD, GPZ (coordination)	(1) To pioneer multipurpose development and management of water resources in Mozambique; and (2) To contribute to enhanced agricultural productivity, stable power supply, flood control, and water supply expansion for Moatize.
2.5	New Cash Crops Establishment Program	Zambezi lowland areas and slope land	MARD	(1) To establish/expand oil crops such as sunflower, soybean, groundnuts and sesame; and (2) To promote cashew production on slope land.
2.6	Livestock Development Program	Region-wide	MARD	(1) To promote small and large animal husbandry by providing disease control and improved veterinary services; and (2) To introduce improved breed to increase productivity, including milking cattle.
2.7	Farmers' Associations Promotion Program	Region-wide	MARD	To assist farmers organize associations that would provide technical assistance and functions as channel for procuring farm input and daily commodities as well as marketing farm produce.

(No.)	(Project Title)	(Location)	(Implementing Agencies)	(Objectives)
2.8	Grain Storage Development	Tete city, Ulongue	Agricultural cooperatives, grain millers' associations	(1) To expand grain storage capacity in the Angonia region to stabilize grain supply and prices; and (2) To support the region to become a granary in the central Mozambique
2.9	District Water Supply	District capitals of six districts	MPWH, Agua Rural	To improve water supply to six district capitals through rehabilitation of existing systems and expansion of service areas.
2.10	Rural Electrification	Region-wide	Ministry of Mineral Resources and Energy, EDM	(1) To electrify all the district capitals; (2) To develop independent supply systems for remote areas; and (3) To promote the use of local energy resources.
2.11	Mineral Resources Exploration Program	Mt. Chidue, Mt. Muambe, Angonia, Monte Muande	Ministry of Mineral Resources and Energy Ministry of Mineral Resources and Energy	To explore systematically more promising mineral resources such as copper at Mt. Chidue, the Mt. Muambe deposit for fluorite and rare earth minerals, graphite in Angonia, and apatite at Monte Muande.

Source: JICA Study Team.

**Table 11. Spatial Structure Strengthening with 11 Projects/Programs**

No.	Project Title	Location	Implementing Agencies	Objectives
3.1	Rural Roads Self-help Improvement Program	Region-wide	District administrations, ANE Tete	To maintain and repair rural roads by supporting self-help efforts of people in rural areas
3.2	Secondary Roads Improvement	Region-wide	ANE	(1) To rehabilitate sections of secondary roads to make them passable under any conditions in the short run; (2) To improve some secondary roads in steps to ensure access to all the district capitals; and (3) To resolve network deficiencies to establish efficient secondary roads system in the long run.
3.3	International Highways Upgrading	Tete city, Moatize, Chiuta, Chifunde	ANE	(1) To upgrade two regional artery roads to international standards; (2) To improve locational conditions of Tete-Moatize corridor for investments; and (3) To improve access to other areas of the region
3.4	Sena Railway	Sofala province, Manica province, Moatize, Tete city, Malawi	CFM-Central, private firm	(1) To provide driving force for Zambezi Valley and Angonia regional development; (2) To facilitate export of Moatize coal and other local products; and (3) To contribute to establishment of a multi-modal transport system linked with neighboring countries.
3.5	Zambezi River Transport Development	Zambezi river	Tete city, private firm	(1) To utilize the Zambezi river as inexpensive means to transport local goods; and (2) To introduce river cruising for tourism.
3.6	Bus Services Improvement	Region-wide	ANE, private firms	(1) To improve bus services by encouraging competition among private bus operators; and (2) To establish a bus terminal in Tete city to facilitate long distance services.



(No.)	(Project Title)	(Location)	(Implementing Agencies)	(Objectives)
3.7	Inland Freight Terminal	Tete city	MPWH, private firms	(1) To establish a freight terminal in Tete city to facilitate long haulage freight transport; and (2) To contribute to establishment of a multi-modal transport system linked with neighboring countries.
3.8	New Zambezi River Bridge	Tete city	ANE, private firms	(1) To meet future traffic demand on international artery across the river; (2) To establish a symbol of regional and national integration in the new era; and (3) To contribute to high image of the region and Tete city.
3.9	Tete International Airport Upgrading	Tete city	Dept. of Civil Aviation, private firm	(1) To upgrade facilities and services of the Tete airport; and (2) To establish a local air services network linked with neighboring countries.
3.10	Rural Telecommunications	District capitals	TDM	(1) To establish telephone links to all the district capitals; and (2) To provide basic telephone services to most larger settlements.
3.11	Border Facilities Improvement	Zobue, Calomue, Biri-biri, Cuchamano, Cassacatize, Misasale.	Immigration and Customs, district administrations	(1) To improve immigration and customs facilities at border points; and (2) To improve market facilities for border trade.

Source: JICA Study Team.

**Table 12. Local Accountability Enhancement with 13 Projects/Programs**

No.	Project Title	Location	Implementing Agencies	Objectives
4.1	GPZ Strengthening	Tete city	GPZ	(1) To strengthen GPZ functions for planning and coordination and coordination between the public and private sectors for industrial development; and (2) To expand GPZ capacities for fields to establish GPZ ownership.
4.2	Local Planning and Management Capacity Enhancement	Region-wide	GPZ, Tete city, district administrations	To enhance local planning and management capacity to support accelerated urbanization within context of the Angonia regional development.
4.3	Zambezi River Basin Database Development	Tete city	GPZ	(1) To establish comprehensive database for the Zambezi river basin covering both natural and socio-economic data; and (2) To contribute to promotion of multi-national cooperation on the entire Zambezi river basin.
4.4	Corporate Management Modernization	Tete city, Angonia, Moatize	Public vocational schools	To modernize corporate management of existing enterprises to enhance the private sector and increase competitiveness of enterprises.
4.5	Tete Provincial Hospital Upgrading	Tete city	MOH	(1) To improve health services of the Tete provincial hospital through upgrading medical equipment; and (2) To establish a provincial center for AIDS related activities.
4.6	Health Referral System Establishment	Region-wide	MOH, district administrations	(1) To establish referral system between hospitals at different tiers for effective health care coverage with limited resources; and (2) To introduce telecommunications systems to improve the operation of the referral system.
4.7	Health Awareness Enhancement Program	Region-wide	MOH	To enhance awareness for preventive health and sanitation among local people through information and education campaigns.

(No.)	(Project Title)	(Location)	(Implementing Agencies)	(Objectives)
4.8	Distance Education Program	Region-wide	MINED	(1) To attain complete coverage for primary education; and (2) To improve quality of education at all levels by establishing an open education system linked to qualified individuals and institutes outside.
4.9	Primary Schools Improvement	Region-wide	MINED	(1) To improve existing primary school facilities in short to medium term; and (2) To expand capacities of primary education in steps in medium to long term.
4.10	Watershed Management Program	Upper and middle catchment areas of three tributaries	Local administrations, communities, MICOA	(1) To restore and enhance environmental capacity of tributary basins; and (2) To establish community-based management organizations for watershed management and sustainable use of water and land resources.
4.11	Environmental Inventory	Chiuta, Chifunde	MARD, MICOA, Tete province, GPZ	(1) To conduct an environmental inventory to create a database on social and natural resources; and (2) To prepare comprehensive data on bio-diversity to justify the establishment of a wildlife reserve.
4.12	Urban Environment Improvement Program	Tete city	MPWH, district administration	(1) To realize clean and sanitary urban environment through proper management of solid wastes and wastewater; and (2) To create urban amenity for local residents and visitors.
4.13	Renewable Energy Center	Tete city	GPZ, Ministry of Mineral Resources and Energy.	(1) To establish an information center with a database on renewable energy resources and uses; and (2) To provide technical assistance to people in rural areas for renewable energy application.

Source: JICA Study Team.

**Table 13. Special Program for Participatory Development with 10 Projects/Programs**

No.	Project Title	Location	Implementing Agencies	Objectives
S.1	Enhancement of Extension Services	Six districts and Tete city	Provincial Agricultural Office, MARD, NGOs	(1) To enhance roles and capacities of rural extension services; and (2) To encourage positive perception and behaviors for changing human environment.
S.2	Community Mobilization	Six districts and Tete city	Provincial Agricultural Office, MARD, NGOs	To utilize and revitalize existing social organizations in communities to serve effectively their respective member population.
S.3	Adult Education on Land Ownership and Sustainable Agriculture	Dala, Mbinhe, Namadende, Aphanhe, Makanje.	Dept. of Agriculture, Dept. of Education, Provincial Government.	To acquire knowledge, skills and attitude on environmentally sustainable agricultural practices.
S.4	Small Animal Husbandry Program	Chimwala, Mkanta, Nsazu, Chipiri, Ntowe, Namadende Banga.	Provincial Agricultural Office, MARD, NGOs	To increase income from sales of small animals in the local market.
S.5	Horticulture/Tree Planting Program	Chimwala	Dept. of Agriculture, Dept. of Education, Provincial Government.	To promote a variety of fruit bearing trees and vegetables specifically to women in rural communities.
S.6	Community Skills Center	Chipiri, Lumadzi, Ntowe	Dept. of Agriculture, Dept. of Education, Provincial Government.	To acquire knowledge and skills on community skills such as carpentry, masonry, furniture making, etc.
S.7	Small-scale Business Program	All 12 communities surveyed.	Dept. of Agriculture, Dept. of Education, Provincial Government, Chamber of Commerce	To diversify sources of income by encouraging starting any kind of small business through provision of small informal credit.
S.8	Self-help Road Rehabilitation	Dala, Mukantha, Nsazu, Chipiri, Lumadzi, Mbinhe, Aphanhe, Banga, Makonje	Dept. of Roads, Provincial Government.	(1) To improve road network and communication between villages within communities; and (2) To improve access to market and social services.

(No.)	(Project Title)	(Location)	(Implementing Agencies)	(Objectives)
S.9	Water and Sanitation Technician Training	Dala, Mukantha, Nsazu, Lumadzi, Mbinhe, Aphande, Banga, Makonje, Ntowe.	Agua Rural	(1) To improve and maintain existing water supply systems; and (2) To improve sanitary conditions of communities.
S.10	Schools and Health Posts Construction	All 12 communities surveyed.	Dept. of Education, Dept. of Health, Provincial government	To improve the quality of social services delivery through collaborative initiatives of communities and the government

Source: JICA Study Team.

**Table 15. Indicative Investment Schedule for Angonia Regional Development (1/2)**

(Unit: US\$10<sup>6</sup>)

No.	Project title	Status	Implementing agencies	Public investment allocation			
				Phase 1	Phase 2	Phase 3	Total
<b>I. Urban Development Initiative</b>							
1.1	Tete-Moatize Core Urban Development	New	Inter-agency, private firms, GPZ (coordination)	48.7	79.8	80.5	209.0
1.2	Tete City Water Supply Expansion	Extended	MPWP, Agua deTete	2.3	*		2.3(15.9)
1.3	Urban Roads Improvement	Extended	ANE, Tete city, Moatize town	*	*	*	-(9.7)
1.4	Tete Corridor Power Supply Expansion	Extended	EDM	*	4.9		4.9(14.7)
1.5	Tete City Telecommunications	Extended	TDM	*	*		-(6.2)
1.6	Agro-Industrial Zone Establishment	New	MPWH, GPZ, private firms	*			-(11.5)
1.7	Business Center Establishment	New	MPWH, M. of Interior, private firms	*			-(0.2)
1.8	Industrial Technology & Information Research Center	New	M. of Industry and Commerce	*	*		-(2.0)
1.9	Moatize Coal Development	Ongoing	Private firms	na	na	na	na
1.10	Institute of Mines & Geology Support Program	New	MINED	0.5	1.0		1.5
1.11	Moatize Coal-fired Thermal Power Plant	New	Private firm	na	na	na	na
1.12	Small-Scale Iron and Steel Manufacturing	New	Private firm	na	na	na	na
1.13	Angonia Highland Integrated urban Development	New	Inter-agency, GPZ (coordination)	5.0	26.6	38.1	69.7
	<b>Sub-Total</b>			<b>56.5</b>	<b>112.3</b>	<b>118.6</b>	<b>287.4</b>
<b>II. Rural Socio-economy Enhancement</b>							
2.1	Integrated Rural Development	New	Inter-Agency GPZ (coordination)	20.0	30.0		50.0
2.2	Small Irrigation Schemes Development	New	MARD, private sector	35.0	17.5		52.5
2.3	Integrated Farming Systems Development	New	MARD	15.0	10.0		25.0
2.4	Revobue Multi-Purpose Dam	New	MPWH, MARD GPZ (coordination)	8.0	97.0		105.0
2.5	New Cash Crops Establishment	New	MARD	10.0	10.0		20.0
2.6	Livestock Development Program	Extended	MARD	15.0	20.0		35.0
2.7	Farmers' Associations Promotion	New	MARD	1.2	2.4	1.2	4.8
2.8	Grain Storage Development	New	Farmers' associations	0.2	0.2	0.2	0.6
2.9	District Water Supply	Ongoing	MPWH, Agua Rural	0.6	1.2		1.8
2.10	Rural Electrification	Ongoing	MMRE, EDM	2.2	2.2	1.2	5.6
2.11	Mineral Resources Exploration	New	MMRE, private sector	na	na	na	na
	<b>Sub-Total</b>			<b>107.2</b>	<b>190.5</b>	<b>2.6</b>	<b>300.3</b>

**Table 15. Indicative Investment Schedule for Angonia Regional Development (2/2)**

(Unit: US\$10<sup>6</sup>)

No.	Project title	Status	Implementing agencies	Public investment allocation			
				Phase 1	Phase 2	Phase 3	Total
<b>III. Spatial Structure Strengthening</b>							
3.1	Rural Roads Self-help Improvement Program	Extended	District administrations, ANE Tete	2.6	4.9	5.1	12.6
3.2	Secondary Roads Improvement	Extended	ANE	5.7	6.0	3.0	14.7
3.3	International Highways Upgrading	Extended	ANE	6.0	12.0	6.0	24.0
3.4	Sena Railway	Ongoing	CFM-central, private firm	na	na	na	na
3.5	Zambezi River Transport Development	New	Tete city, private firm		2.0		2.0
3.6	Bus Services Improvement	New	ANE, private firm	1.0	1.0		2.0
3.7	Inland Freight Terminal	New	MWPH, private firms	1.0	2.0		3.0
3.8	New Zambezi River Bridge	New	ANE, private firms	4.0	20.0		24.0
3.9	Tete International Airport Upgrading	New	Dept. of Civil Aviation, private firm		20.0		20.0
3.10	Rural Telecommunications	Extended	TDM	4.1	6.2	2.1	12.4
3.11	Border Facilities Improvement	New	Immigration and Customs, district administrations	1.0	1.0		2.0
	<b>Sub-Total</b>			<b>25.4</b>	<b>75.1</b>	<b>16.2</b>	<b>116.7</b>
<b>IV. Local Accountability Enhancement</b>							
4.1	GPZ Strengthening	Ongoing	GPZ	1.6			1.6
4.2	Local Planning & Management Capacity Enhancement	New	GPZ, Tete city, district administrations	1.0			1.0
4.3	Zambezi River Basin Database Development	New	GPZ	4.0			4.0
4.4	Corporate Management Modernization	New	Public vocational schools	0.5			0.5
4.5	Tete Provincial Hospital Upgrading	New	MOPH	3.1			3.1
4.6	Health Referral System Establishment	New	MOPH, district administrations	0.5	1.5	1.0	3.0
4.7	Health Awareness Enhancement Program	Ongoing	MOPH	0.5			0.5
4.8	Distance Education Program	New	MINED	0.5	1.5	1.0	3.0
4.9	Primary Schools Improvement	Ongoing	MINED	0.9	1.8	1.2	3.9
4.10	Watershed Management Program	Extended	Local administrations, communities, MICOA	0.5	1.0		1.5
4.11	Environmental Inventory	New	MARD, MICOA, Tete province, GPZ	0.5	2.0		2.5
4.12	Urban Environment Improvement Program	New	Tete city, Angonia district administration, MPWH	1.0	3.0	3.0	7.0
4.13	Renewable Energy Center	New	GPZ, MMRE		1.5	1.00	2.5
	<b>Sub-Total</b>			<b>14.6</b>	<b>12.3</b>	<b>7.2</b>	<b>34.1</b>
	<b>Total</b>			<b>203.7</b>	<b>390.2</b>	<b>144.6</b>	<b>738.5</b>
				<b>(87.8%)</b>	<b>(89.6%)</b>	<b>(46.5%)</b>	<b>(75.5%)</b>
	<b>Public Investment Allocation</b>			<b>231.9</b>	<b>435.3</b>	<b>311.2</b>	<b>978.4</b>

\*Costs included in Project No. 1.1. / Source: JICA Study Team.

The amount of investments required to attain the expected economic growth in the Angonia region is estimated to be US\$543.2 million in Phase 1, US\$1,415.1 million in Phase 2, and US\$1,125.3 million in Phase 3 (Table 16). Given the estimated public investment allocation to the Angonia region, additional investment requirements are 14.5% of the GRDP in Phase 1, 22.1% in Phase 2 and 22.3% in Phase 3. While these percentages are not prohibitively large, it is clear that a large amount of private investments will have to be introduced in the Angonia region. Otherwise, comparatively larger public investment may be allocated to the Angonia region, as some of the proposed projects/programs such as international artery roads and power development are actually national projects. In fact, the Angonia regional development itself may be taken as a national program, as it would contribute to the strengthening of relationships with the neighboring countries as well as to the national integration.

**Table 16. Investment Requirements in Angonia Regional Development**

	2000	2010	2020	2025
GRDP	184.3	339.5	811.2	1,186.3
Incremental GRDP (US\$x10 <sup>6</sup> )	155.2	471.7	375.1	
ICOR	3.5	3.0	3.0	
Investment requirements (US\$x10 <sup>6</sup> )	543.2	1,415.1	1,125.3	
Public investment allocation (US\$x10 <sup>6</sup> )	231.9	435.3	311.2	
Additional investment required (US\$x10 <sup>6</sup> )	311.3	919.8	814.1	
Additional investment as percentage at GDP (%)	14.5	22.1	22.3	

Source: JICA Study Team.



## **Chapter 6. Implementing Arrangements for Angonia Regional Development**

### **6.1. Institutional Framework with GPZ**

The Angonia regional development will take place basically within the framework of existing development administration. As the Angonia region develops, however, administrative capacities for development planning, finance and management are expected to increase at the regional and the local levels. How and to what extent the capacities will increase depends, in turn, on institutional arrangements for the Angonia regional development.

The existing development administration for the Angonia region consists of the Tete provincial government, municipalities of Tete city and Moatize town, six district administrations, and GPZ. Along with the on-going decentralization process, some ministerial functions are slowly deconcentrated to the provincial government. In principle, the provincial government can combine the budget allocation from the Central Government and local revenue to implement its program without the approval of the center. GPZ is mainly a planning and coordinating agency as its statute dictates. GPZ can plan for any projects in any sectors within its territorial jurisdiction for approval by the Government. GPZ coordinates development activities of sector agencies and promote their implementation. GPZ guides the private sector and facilitates private investments.

In the existing administrative system with ongoing reforms, relationships between provincial governments and GPZ will be increasingly important. To perform the functions outlined above, GPZ should work closely with the provincial governments. In particular, the coordinating functions would be performed effectively through the respective provincial governments, where practically all the ministries are represented. Therefore, as the decentralization proceeds with slow but steady devolution of administrative power to provincial governments, effectiveness of the coordination should be enhanced.

Priority policy and commitment by the Government for the Zambezi Valley are embodied into the establishment of GPZ as a statutory agency. GPZ is expected to take the strong initiative for realization of the sustainable development of the Zambezi Valley. To realize this effectively, GPZ should better establish ownership for some substantive part of the Zambezi Valley development. In other words, GPZ should also be an executing agency for projects and programs in certain sectors.

By its nature as the river basin authority, a natural choice for the sector to establish GPZ ownership is the sector of water resources development and management. At present, the Ministry of Public Works and Housing (MPWH) is responsible for establishing policies and strategy for development and management of nation's water resources. MPWH exercises its functions through the National Directorate of Water (DNA), which operates

through the regional administration of water (ARA). Together with south, central and north ARA, the Zambezi Valley is under a separate ARA. As Mozambique enters a new era of water resources development and management applying such modern concepts as a river basin approach, watershed management and multi-purpose development, it would be quite relevant for GPZ to pioneer their application to the Zambezi Valley.

Other potential sectors for GPZ ownership include social/livelihood development, environmental management, and possibly joint venture activities with the private sector. The first two sectors may benefit from the field-based functions of GPZ. If transfer of major mandates to GPZ is found difficult, GPZ may establish its ownership initially as an executing agency for social/livelihood development and environmental management projects and programs with relatively small funds. Joint venture activities with the private sector are in line with the GPZ strategy to pursue strategic alliances with the private sector. It would be reasonable for GPZ to provide relatively small fund as pump priming for private investments.

## **6.2. Institutional Arrangements for Angonia Regional Development**

As outlined, some actions are expected to be taken at the national level to support the sustainable development of the Zambezi Valley. Specifically, these are further decentralization, and expansion of GPZ mandate. At the regional and the local levels, the following conditions need to be satisfied for institutional arrangements for the Angonia regional development:

- 1) Planning and coordinating functions need to be strengthened at the local and the regional levels;
- 2) New funding mechanism should be devised to increase regional fund mobilization in a significant way;
- 3) Organization and participation of local people and communities should be promoted; and
- 4) The private sector should be encouraged to take active part in the Angonia regional development not only for a wider range of development activities but also for development management.

The planning and coordinating functions at the local level may be strengthened most effectively, given the limited manpower resources, by pooling expertises at a proper regional or provincial level to provide technical supports and guidance to all the district administrations. This is what the ANE Tete office is doing for the maintenance of non-classified roads, for instance. In the Zambezi Valley, GPZ is in the position to do this in general. To perform this function for multi-sector projects with several implementing agencies involved, technical expertises of GPZ would have to be enhanced in steps.

Among the expertises to be enhanced are those involved in integrated rural development, social/livelihood development, environmental management, and water resources development and management as well as other basic expertises such as local planning, data management and financial analysis.

The new funding mechanism may include a venture capital organization, regional banking institution, and specialized financing programs focussing on small and medium enterprises, organizational development, community self-help activities and others. A regional bank will utilize local deposits effectively for investment and social security purposes.

To expand the resource capacity at the local level, broad local participation should be effected by district administrations under the guidance of the Tete provincial government and GPZ, and facilitated by NGOs. It may take the form of cooperative community works to improve and manage various rural infrastructure. Another main area where more active local participation is expected is a conduct of environmental impact assessment, or more broadly environmental monitoring and management. Local participation would be effective also for resource inventory covering both natural and socio-cultural resources.

As a means to expand the roles of the private sector in realizing the sustainable development of the Zambezi Valley, a corporate type entity for development management should be experimented first in the Angonia region. It should take charge of some designated area as a development corporation. The envisioned Tete-Moatize core urban area is recommended for its jurisdiction.

### **6.3. Recommended Organizational Reform of GPZ**

The ongoing organizational restructuring of GPZ is a welcome move as it will expand the staff capacity and introduce sub-regional units. Along with these, further strengthening of the organizational structure of GPZ is recommended.

The original setup of GPZ may be expanded along sector lines as the staff capacity is increased. The Department of Project Promotion may be expanded with separate sections in charge of agriculture, industry, small and medium business, and trade and services. The Department of Infrastructure may be expanded with subdivision by different kinds of infrastructure. A support department may be created for community and participatory development, information services, and other private investors support. These sector-wise developments will be complementary to the area-wise developments by sub-region.

Within this expanded organizational structure with increased staff capacity, a few specific departments and sections should be strengthened. First, the Department of Planning and Studies should be much strengthened to foster an integrated view of the Zambezi Valley for regional development and to ensure such a view to be reflected in sub-regional development and development of different districts and cities. Technical support to district

administrations and municipalities for socio-economic and land use planning are among the functions of this department.

Second, a section in charge of small and medium enterprises (SMEs) promotion should be created, and the Department of Community Development strengthened, since participatory development and private sector support should be the main thrusts of GPZ. The SME section should be instrumental in improving corporate management of the existing SMEs with introduction of new technologies and modernization of equipment, in developing markets and products ("Tete brand," for instance), and in promoting subcontracting among local industries. Also, a department of information and technology may be created to provide information services related to technology, markets and business opportunities to the private sector. The department will also provide information necessary for other departments.

Third, the sector-wise subdivisions of departments should be undertaken to establish the ownership of GPZ for some selected sectors and fields as suggested in previous sections. In addition to the strengthening of the Department of Community Development recommended above, the subdivision of the Department of Project Promotion may strengthen functions related to integrated rural development, and the subdivision of the Department of Infrastructure may support the functions of water resources development and management.





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