Table 3.10. Terms of Loans Borrowed by Enterprises

Annual interest rate	Less than 10%	11%-20%	21%-40%	Over 40%	Total
No. of company	3	7	4	2	16
Reimbursement	Less than 1year	2-3 years	4-5 years	Over 5 years	Total
No. of company	5	5	5	1	16

4.4.2. Conditions of small and micro scale enterprises

(1) Market

The market of the small and micro scale enterprises is limited to their own districts, and only some of agricultural crops and timber products are sold in the surrounding districts such as Tete city and border areas between Malawi and Zambia. The majority the enterprises find their markets either only in their own districts (56%) or in surrounding areas (40%), and only 4 % has export markets.

The reason for such limited markets is lack of market information as well as insufficient transportation means. Most of the entrepreneurs (95%) collect market information personally. Therefore, it is difficult to collect accurate and useful information to develop new products that the market demands.

In addition, 95% of the entrepreneurs do not belong to any kind of business-related association. Only eight entrepreneurs are member of such associations. They use their associations for sales promotion (3) and market information (4).

(2) Raw materials

Table 3.11 shows the evaluation of raw materials by product. Raw materials used by local industries are mostly local products (78%) and 22% are imported from Malawi and other surrounding countries. Most raw materials (90%) are evaluated favorably for quality, quantity, prices and delivery because these products mainly utilize local primary products such as timber, maize, etc. These products are of low technology industries and thus do not require high level production management.

Table 3.11. Evaluation of Raw Materials (No. of Products)

	Difficult	Fair	Good
Quality	0 (0%)	29 (35%)	54 (65%)
Quantity	18 (18%)	52 (51%)	32 (31%)
Price	5 (5%)	53 (56%)	37 (39%)
Delivery	3 (4%)	19 (28%)	46 (68%)

(3) Labor, equipment and machinery

Table 12 shows the number of workers by the level of education. A majority of employees (57%) of the enterprises interviewed are unskilled workers, and 42% of workers have basic level technical training. Most workers (70%) are younger than 30, and 66% completed primary education. These conditions indicate the technical level of labor in the Study Area to be quite low.

Table 3.12. Number of Workers by Technical Level

Higher technician	Middle level	Basic level	Unskilled	Total
1 (0%)	5 (1%)	172 (42%)	233 (57%)	411

Domestic machineries account for 88% of the existing machineries (Table 3.13). The remaining machineries are imported from Malawi and other surrounding countries. A half of them have been used for less than five years. They are in good conditions because the existing machineries in the Study Area are for rather mechanical and simple purpose uses, not for precision technology, such as grain-milling machine, carpentry machine, etc.

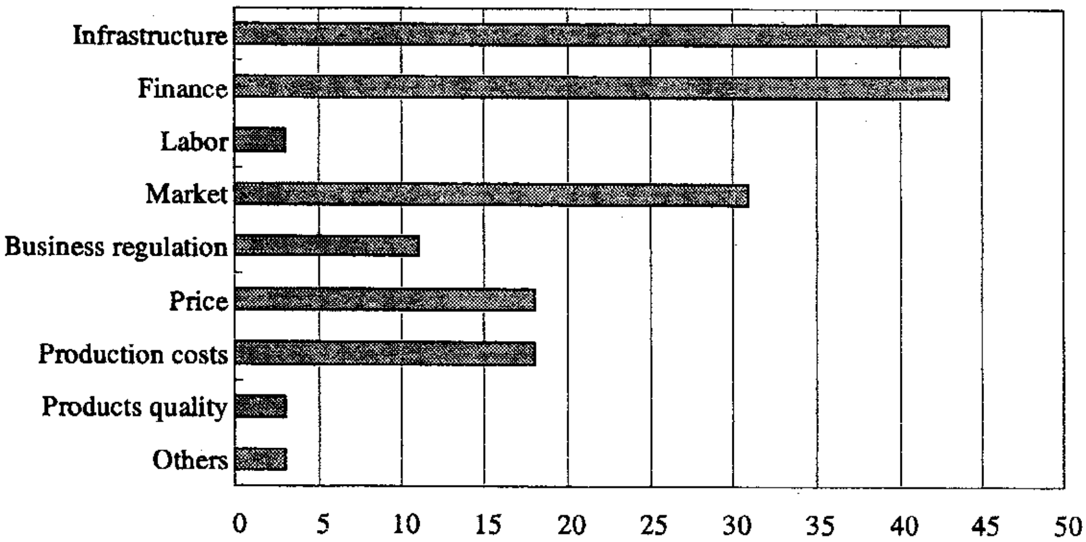
Table 3.13. Characteristic of Existing Machinery and Equipment

Origin	Domestic	Import		Total
No. of equipment	147 (88%)	20 (12%)		167
Duration of use	Less than 5 years	5-10years	Over 10 years	Total
No. of equipment	21 (50%)	8 (19%)	13 (31%)	42
Condition	Bad	Good	Not functional	Total
No. of equipment	6 (4%)	146 (95%)	1 (1%)	153

(4) Major constraints

Figure 3.4 shows the major problems faced by the small and micro enterprises.

Figure 3.4. Major Problems Faced by Small and Micro Enterprises



(a) Infrastructure

During the field survey, many entrepreneurs complained about the existing poor infrastructure such as road network, telecommunication, electricity and water supply. Rural roads are interrupted during the rainy season. As the road network to the market, Tete city and other large cities is not maintained, it is difficult to develop new markets. In addition, there are few transportation means.

There are large volumes of surplus agricultural products but farmers deliver their products to the nearest market by bicycles. There is not the proper accumulation area and storage to control shipping of agricultural crops. Therefore, mainly buyers decide selling prices to these commodities.

Electricity is supplied only to the central town of each district. A gasoline/diesel engine is mainly used in a factory as a power source. Therefore, major manufacturing industries such as carpentries and repair shops exist only in central towns, and there are only grain mills and brick making in other rural areas.

Wireless communication system is normally used among district government offices. Telephone lines have not been installed and cannot be generally used for business. Although these districts border on Malawi and Zambia where there is a potential of markets, it is difficult to make full use of their advantage.

(b) Finance

Lack of financial resources is also one of major constraints. There are three branches of banks (Moatize, Angonia and Songo). However, banking system is not established in rural areas. Since the Government was obliged to stop financial support for farmers and other micro enterprises, they have no means of fund raising.

Danish International Development Agency (DANIDA), AMODER, FARE, and other international agencies and NGOs support small and micro enterprises. DANIDA finances US$2 million for 15 projects in 2000. It is necessary to introduce a micro credit system for farmers as well as smaller businesses.

(c) Market

Markets are quite small, usually only in their villages or communities. This market-size problem is mainly raised by farmers. There is a plenty of agricultural surplus but access to markets is difficult due to lack of transportation and processing industries. On the other hand, bakeries in Tete city, for instance, buy wheat flour from Beira.

There are a few plantations but they also do not have enough markets in large cities. Judging from the field survey, the reason may be lack of market information. Although they collect information personally, they have no function to analyze market needs, products quality, prices, etc. Therefore, it is necessary to establish an organization to provide them with useful and accurate market information in a timely manner.

(d) Business regulation

Entrepreneurs complained about complicated business regulations. Most enterprises interviewed have business licenses from the municipal offices. These micro scale enterprises are exempt from industrial taxes. Enterprises with the business license of Alvara mentioned above are restrained by various business regulations. For example, the application for the business license must be approved by the Ministry of Industry and Commerce in Maputo. Therefore, the process takes time and additional cost may incur during the waiting period. Contrary to the Government's expectation that Alvera helps micro scale enterprises grow into medium scale enterprises, such tedious process tends to discourage entrepreneurs from expanding their business.

(e) Prices and production costs

Most daily commodities are imported and at lower prices, making it difficult for domestic products to compete with them in the market. For example, a shoemaker was forced to stop making shoes due to the importation of inexpensive shoes. A clothing manufacturer also stopped the production because large quantities of imported used cloths were on the market. Therefore, it is necessary to improve production management to reduce production costs.

4.4.3. Conditions of small and medium scale enterprises in Tete city

The enterprise was also executed sampling 24 small and medium scale enterprises in Tete city, separately from the small and micro scale enterprises in other districts, because the business activities of enterprises in Tete city are different from the latter. The list of enterprises interviewed is attached in Appendix 1.

(1) Summary of the enterprises

The scale of enterprises interviewed is shown in Figure 3.5. Enterprises with capital of Mt. 1 million (US$45) to Mt. 100 million (US$4,500) account for 66% of all the enterprises, and enterprises with capital of Mt. 101 million (US$4,500) to Mt. 5 billion (US$225,000) account for 26%. The capitals of two enterprises exceed Mt. 10 billion: Mt. 30 billion (US$1.3 million) and Mt. 34 billion (US$1.5 million). One is a furniture manufacturing and general commerce and the other a leather and shoe factory.

As for the information on the annual income of these enterprises, sufficient data were not collected. However, some entrepreneurs explained briefly that their businesses expanded in 1997 but stagnated from 1998 on due to the economic slowdown of the Country.

Table 3.14 shows the summary of the enterprises interviewed in Tete city. Major manufacturing industries in Tete city are carpentry and bakery.

Figure 3.5. Capital Size of Enterprises in Tete City

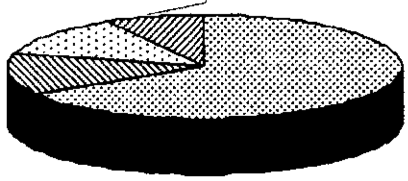


Table 3.14. Summary of Enterprises Interviewed

	No. of companies	Average no. of. workers	Major products
Contractor	5	-	Building, house, road, plumbing
Metal working	2	4	Metal products
Carpentry	4	41	Furniture, coffin, including general
commerce			
Grain milling	5	3	Maize flour, millet
Bakery	2	-	Bread and cake
Repair shop	3	30	Vehicle, refrigerator
Training school	1	7	Computer training
Others	3	-	Shoes, cloth, car spare parts

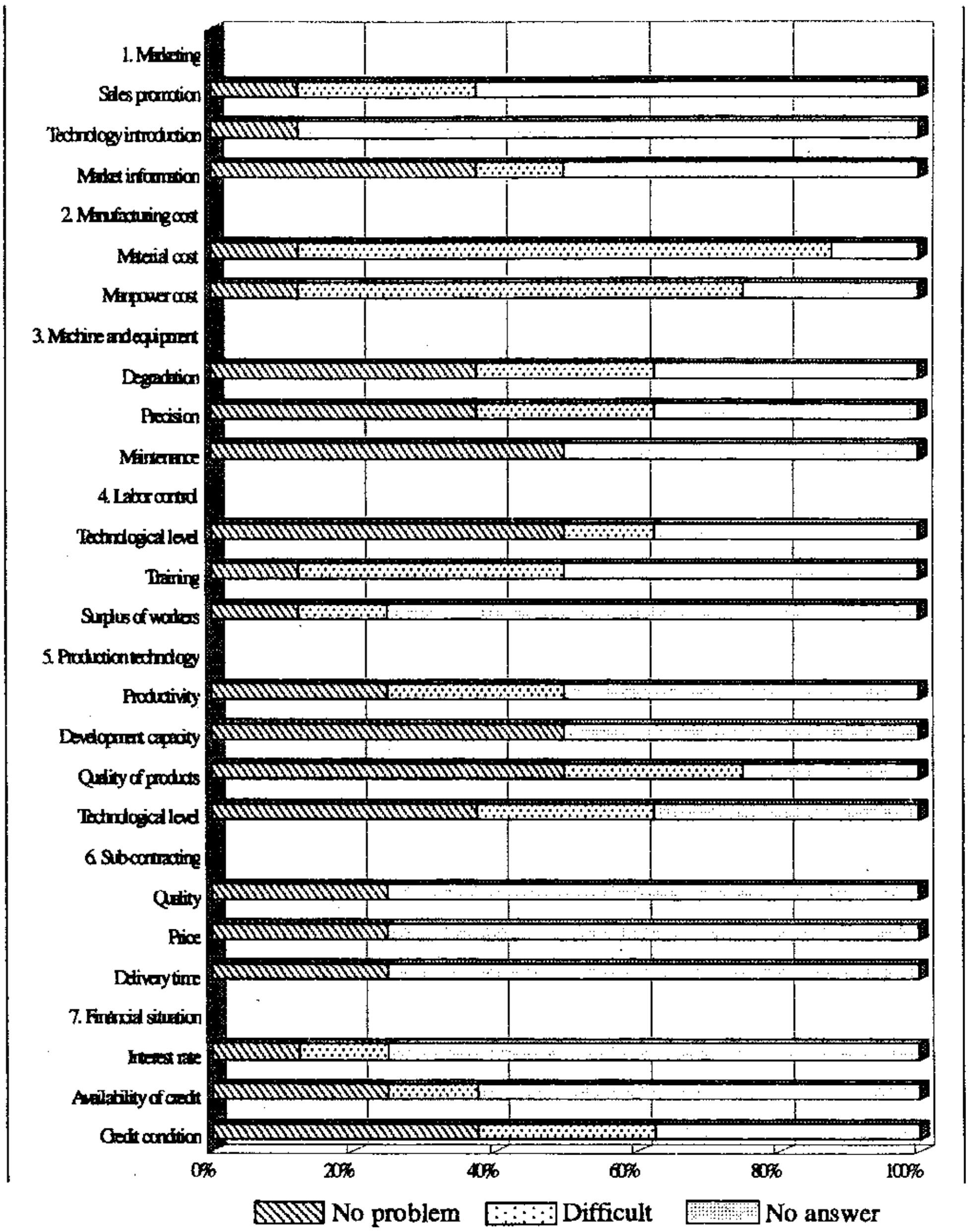
There also exist a medium scale soap factory and a metal working factory. However, the quality of their products is accepted only in the local area. For example, a metal work company that built steel ships previously, produces fences and handrail of bridge recently. It seems that the factory workers are not trained and the production technology is very low. They use old machines and equipment that are not maintained and of low precision. Proper production control is not done because the production volume is too small.

Many entrepreneurs interviewed intend to expand their business but given the present situation, they find it very difficult to collect enough information about new market and technology to produce new products.

(2) Existing conditions and problems

Figure 3.6 shows the results of the enterprises survey for the existing situation concerning corporate management of the enterprises in Tete city. Each factor of the corporate management is explained.

Figure 3.6. Existing Situation of Corporate Management



(a) Marketing

Three questions regarding marketing activities were asked: sales promotion, technology introduction and market information. Most entrepreneurs answered that enhancement of sales promotion was difficult. On the other hand, as for the necessity of new technology introduction, the majority of the entrepreneurs did not respond to the question and those few who answered did not find it a problem. Likewise, most entrepreneurs do not seem to find problems associated with market information relevant. Perhaps, they do not appreciate the importance of technology introduction and market information for sales promotion because their business mainly targets at the local market only.

(b) Manufacturing cost

Of the entrepreneurs interviewed, 75% and 63% answered that there were problems both with their material cost and manpower cost, respectively. However, those problems are thought to result from their corporate management because both labor and material costs in the Study Area are cheaper than those in other areas. Under the economic liberalization, it is very difficult for them to maintain competitive power because inexpensive products are imported from China, India and other countries. In fact, there are a few domestic goods that are being sold in shops. As mentioned earlier, due to inexpensive shoes imported in large quantities, a local shoe factory was forced to shift from shoe production to export of leather materials to Europe.

(c) Machinery and equipment

The entrepreneurs who responded no problem of degradation or precision of their machinery and equipment account for 38% of the total while 25% reported having problems. Generally, old enterprises have more problems with their machines and equipment than new enterprises because the former cannot renew their machines due to lack of funds. As for the maintenance of machinery, no entrepreneur found it to be a problem. However, judging from the field survey, some of the machines observed are not properly maintained. The absence of entrepreneurs reporting problems with machine and equipment maintenance may be because most of their products do not require precision in their production.

(d) Labor control

The questions concerning labor control are on the technological level, technical training and surplus of workers. Only one entrepreneur, contractor, answered the problem of technical level of labor, and the others reported no problem. It is that the major products in the Area are furniture and other woodworks, and the craftsmen here have high skill. However, the labor skill in other manufacturing sectors is low due to lack of training system. Therefore, it is difficult to introduce new technology and corporate management system and this situation hinder the expansion of business.

According to many entrepreneurs, labor training is one of the most serious problems because there is neither trainees nor facilities for proper technical training. There are four vocational training schools in the Study Area: Martyrs of Wiriyamu Commercial and Industrial School in Tete city, Matundo Industrial School in Matundo, Dom Bosco Professional School in Matundo, and Institute of Mines and Geology in Moatize. However, except for Dom Bosco Professional School, which has just been established in 2001 with funding from Salesian Missions of the Catholic Church, the other three are not operating to their fullest capacity due to outdated equipment, equipment and facilities in disrepair, shortage of teachers (especially trained ones), and, most seriously, lack of funds.

(e) Production technology

The questions concerning production technology are on productivity, development capacity, quality of products and technological level, which are all important factors for corporate management. The number of entrepreneurs who think that productivity is a problem is about the same as that of those who did not think. Under the present situation that the production volume is small, they probably do not regard productivity as an important factor. However, it is one of the most important factors of effective corporate management, and improvement of productivity contributes to the enhancement of the competitive power of enterprises. They are not ware of the importance of development capacity either.

Of the entrepreneurs interviewed, 50% reported no problem with the quality of products and the level of production technology as well as other questions concerning technology. However, it is indispensable to improve these domains in order to develop local industries.

(f) Sub-contracting

The response rate on this item is the lowest. Sub-contract system has not developed in the regional economy because sub-contracting is not essential in such small scale businesses. Therefore, economic relations are weak between local enterprises. It is necessary to strengthen business associations in order to promote mutually profitable relationships among small scale enterprises.

(g) Financial situation

The questions concerning the present financial situation are on interest rates, availability of credit and credit conditions. Banking system has not been established in the Study Area. Local entrepreneurs have no habit of making deposits in banks. Since mutual trust between banks and borrowers is weak, banks impose a large amount of collateral as well as high interest rates. It is difficult for small and micro scale enterprises including farmers to secure loans and credit, for many properties that could be used as collateral were destroyed during the civil war,. It is effective to introduce a micro credit system for the promotion of small and micro enterprises. For the introduction of micro credit, it is necessary to organize a small group of borrowers and to guide them on how to utilize the credit system.

Chapter 5. Strategy for Industrial Development

5.1. Background of Industry

5.1.1. Historical background

The industrial sector in Mozambique was operated under the state planned economy after the independence. Major industrial infrastructure was severely damaged during the civil war. After the civil war, the Central Government has introduced market-oriented economy since 1992. The Study Area has been isolated from more advanced areas in the south due to its geographic location and the poor inter-regional infrastructure. The Government has recently encouraged the development of the region of Zambezi Valley in order to decrease the disparity in the economic conditions among regions.

5.1.2. Existing situation

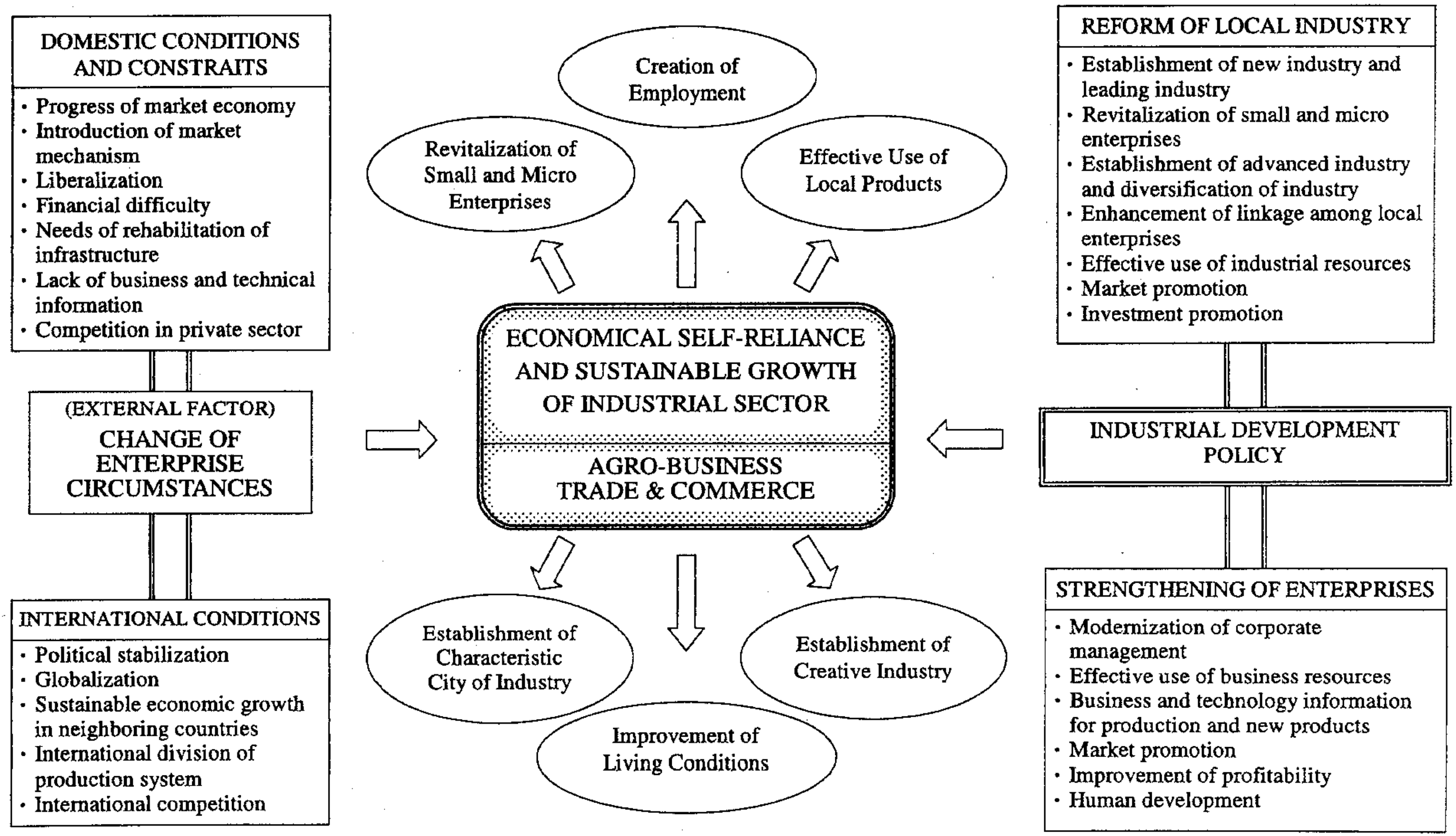
The main industry in the Study Area is agriculture accounting for 65% of the total GRDP, in which 86% of workers were engaged in 2000. Although accurate statistical data are not available, there is a plenty of surplus vegetables, fruits and livestock. At present, the industrial sector does not utilize those agricultural products effectively due to the lack of transportation and trading system.

There exist several scales of enterprises, form medium to micro scale in the Study Area. Except for a few medium scale enterprises, which are expected to lead the regional economy, the majority of enterprises are micro scale enterprises such as brick makers, bakeries and carpenters, which employ two or three workers. Competition among industries is not severe in the Study Area and access to large market areas is quite limited. With the introduction of market economy, however, enterprises would have to face severe competition. Industrial linkages among medium, small and micro scale enterprises have not been established in the Study Area. Given these circumstances, significant issues for the regional industrial development are described below.

5.2. Basic Strategy

To achieve the economic development objectives, the industrial sector can contribute particularly to generating high earning employment opportunities through diversifying economic activities and promoting linkages with agriculture, and trade and distribution, and pursuing national socio-economic integration and enhanced national status mainly through export processing. Basic strategy for industrial development in the Study Area is established with the four components as clarified. Figure 3.7 shows the prospects of the industrial sector development based on the basic strategy discussed thereafter.

Figure 3.7. Prospects and Strategy for Industrial Sector in the Study Area



5.2.1. Structural reform of the industrial sector

The industrial sector in the Study Area should be transformed over time. The existing industries in the Study Area are also found in other areas and they have no competitive edge at present. Since there are only a few factories in the area to produce marketable commodities, many manufactured goods are imported from other areas. An important direction of the structural reform in the Study Area is to create characteristic industries, taking advantage of the area's rich agricultural base and abundant mineral resources.

There is no linkage between enterprises in the Study Area today, undermining the viability of the regional economy. Economic linkages should be reinforced by providing local enterprises with useful and accurate business information in a timely manner and introducing sub-contract system supported by improvement of industrial infrastructure.

5.2.2. Enterprise reform

For the existing medium scale enterprises to lead the regional economy, they need to modernize their corporate management as a first step of the structural reform. Subsequently, external support for industrial fundamentals should be provided to strengthen their financial and technical bases of their management as discussed below.

(1) Modernization and strengthening of corporate management

Local enterprises will have to introduce a modern management technology to conform to competitive market economy. Corporate competition will become severe as the Government proceeds with the market economy furthermore.

The strategy is divided into two categories: one for small and micro enterprises and the other for small and medium enterprises. For the former, enterprises will be organized as a sector group and modernization measures will be implemented for it. For the latter, individual measures such as entrepreneur training and company diagnose system will be enforced. With these measures and modernization of their management, it is expected that the financial base of the enterprises in the Study Area be strengthened and expanded.

(2) Development of technology

There exist no research and development activities by the existing institutions to support the industrial sector. Coupled with lack of the technology information as well as funds, it is difficult for the enterprises currently in operation to improve their production technology and develop new products. Therefore, a technology center is to be established by the public sector to facilitate technology development.

(3) Human development

The enterprise reform cannot be achieved only by the efforts of entrepreneurs themselves. Their corporate policies and objectives need to be conveyed to and understood by the employees with special talent and skills and reflected in their job performance. Human development programs should be implemented for both entrepreneurs and their employees.

5.2.3. Market and investment promotion

(1) Market promotion

Market information is indispensable to develop new markets. Presently, medium scale enterprises as well as small and micro enterprises in the Study Area have no capacities to collect and analyze market information to strengthen or expand their market. An organization for disseminating market information needs to be established.

(2) Investment promotion

Introduction of foreign investments is an effective means for regional industrial promotion. The Study Area has the advantages of possessing a plenty of local resources, secure low-cost labor force and sound security. However, there exist restrictions such as poor infrastructure, complicated investment procedures, low level of technology. To attract foreign investors to such inland and remote areas as Tete city, positive assets of the region, as compared to other regions, such as rich resources, abundant electricity and industrial water, and human resources of high technical and communication skills need to be properly promulgated while removing other restrictions.

5.2.4. Revitalization of small and micro scale enterprises

The private sector holds a key to industrial development in the market economy. The private sector in the Study Area consists mainly of small and micro enterprises, which do not have capacity to improve their business operation. Revitalization programs, therefore, should be designed, covering a full spectrum of business factors from technology development to infrastructure improvement. The ultimate goal is to create and expand the market for these enterprises and link them to the open world economy directly or indirectly.

The industrial fundamentals necessary for the development of industries encompass a wide range of business activities including technological capacity, human development and infrastructure. These fundamentals in the Study Area have not been established because the area is mainly agricultural, isolated from other advanced areas.

The existence of fundamental facilities is the most important factor in vitalizing local enterprises, not only in Mozambique but also in other countries. In Japan, for instance, many local governments have installed necessary facilities and measures to vitalize existing local industries, especially small and micro enterprises in their regions.

5.3. Strategic Measures for Industrial Development

The industrial sector in the Study Area has two promising characteristics. One is that it is situated in a very productive agricultural area. The Government has encouraged promotion of manufacturing, for example, food-processing industries to utilize agricultural products.

The other is that it is on a crossroads of international and inter-regional trade and distribution. The Study Area has potentials to become the hub of trading and commerce in the central Mozambique and the neighboring countries. Two possible directions for industrial development in the Study Area, therefore, are 1) to strengthen linkages between the agricultural and the industrial sectors, and 2) to establish a logistics system to support the trade and distribution sector.

5.3.1. Roles of the public sector and the private sector

Industrial development can be achieved by joint efforts of the private sector and the public sector. The roles of the public sector and the private sector should be elucidated. The roles of the public sector are to promote reform of the local industrial structure from macro sector and country viewpoints, and to provide the fundamentals to support the private sector. The main role of the private sector is to improve its management of local enterprises with support from the public sector.

Programs for regional development inevitably involve many different fields and competent authorities of the central and provincial governments. To successfully implement industrial development programs, it is necessary for the public sector to improve the industrial infrastructure and to establish public organizations to promote private industries. It may even necessitate the enactment of new regulations. On the other hand, the private sector in the Study Area is neither organized nor equipped to execute such programs. Therefore, GPZ is expected play an active role in coordinating the public sector and the private sector for effective implementation of industrial programs.

5.3.2. Establishment of agro-business base

The Study Area may establish a new agro-business base for the Country by mustering its business resources. Generally, local areas where industries are underdeveloped need to promote characteristic industries. It is in line with the government policy to utilize a large surplus of agricultural products in the Study Area. For the establishment of an agro-business base, food-processing factories should be promoted in a new, designated industrial zone.

5.3.3. Establishment of trade and commerce base

Tete city has the potential to become a center of trade and commerce in the north-central part of the Country. Many international cargos to and from the four neighboring countries, South Africa, Malawi, Zambia, and Zimbabwe, pass through Tete city. This, however, does not bring any positive economic effect to the region as those cargos stop only for custom clearance at present.

A logistics center should be established to provide both high grade hardware (infrastructure) and software (operation system) for handling goods, storage, packing, and distribution system controlled by a computer system linked with other logistics centers in the neighboring countries. The logistics center is operated by the private sector and an office for custom clearance and other necessary procedures is provided and managed by the provincial government. As a first step for the establishment of a trade and commerce base, the center should start from a regional nucleus of agro-trade that provides cold storage for gathering and shipping control of the local crops.

5.3.4. Investment promotion

In the Study Area, most manufactured goods are imported from China, India and the neighboring countries and they are more competitive than locally produced goods in terms of prices. The private sector currently does not have enough capital and information to develop products or exploit new markets to compete against foreign manufacturers. Therefore, it is essential to invite investments from outside for the regional development. The following constraints must be removed to attract foreign investors:

(i) Insufficient industrial infrastructure,
(ii) Complicated administrative procedures,
(iii) Lack of business information, and
(iv) Lack of skilled workers.

5.4. Phasing of Industrial Development

The strategic measures proposed above should be taken in steps, changing emphasis from one phase to the next. The implementation schedule is divided into three phases: i) reform of industrial structure, ii) strengthening of corporate management of the private sector and iii) market development and investment promotion. The objectives and implementation programs of each phase are discussed below.

(i) Reform of Industrial Structure

Phase 1 and Phase 2

Objectives:	Support for revitalization of local industry and Strengthening of industrial linkages.
Programs:	Provision of government support, Business center for market and investment promotion, Agricultural cooperatives, and Establishment of ITIRC.

(ii) Strengthening of Corporate Management

Phase 1

Objective:	Modernization of corporate management
Programs:	Training program and Enterprise diagnosis.

Phase 2

Objective: Introduction of new industry

Programs: Food processing manufacturing,
Bio-briquette production, and
Import substitution industry.

(iii) Market Development and Investment Promotion

Phase 3

Objective: Establishment of leading industry

Programs: Investment promotion zone for Agro-business,
Distribution center and cargo terminal, and
Iron and steel factory.

Measures to revitalize small and micro enterprises should be taken throughout the planning period to make them viable economic units in the open economy. The reform of industrial structure should be undertaken in the short to medium term (Phase 1-Phase 2) to support the revitalization of local industry and to strengthen industrial linkages. Specific measures are provision of incentives, business center for market and investment promotion, agricultural associations, and establishment of an industrial technology and information research center (ITIRC).

The enterprise reform during Phase 1 should aim at modernization of corporate management, and be effected through training programs and enterprise diagnosis. It should support the introduction of new industries in Phase 2, including food processing, bio-briquette manufacturing, and import substitution industries.

Promotion of market and investment will be most actively undertaken during Phase 3 after 2010. It should aim at establishing leading industry complex through investment promotion zone for agro-business, distribution center and cargo terminal, and iron and steel industry.

This phasing strategy is illustrated in Figure 3.8.

Figure 3.8. Implementation Schedule for Industrial Development

Year	Structural reform of industrial sector	Strengthening of enterprise management
2002 Phase1	Objective: To support revitalization of enterprises; and To strengthen linkages Start year: 2002 Program: Provision of governmental support Business center for market and investment promotion Agricultural associations Establishment of ITIRC	Objective: To modernize corporate management Start year: 2002 Program: Training program Corporate management Sales promotion Enterprise diagnosis
2005 Phase2	Renovation of infrastructure Roads and bridges Telecommunication	Objective: To introduce new industries Start year: 2005 Program: Promotion of food processing Coal briquette Import substitution industries
2010	Market and investment promotion	
Phase3	Objective: To establish leading industry Start year: 2010 Program: Investment promotion zone for agro-business Distribution center and cargo terminal Iron and steel factory	⇩ ⇨ Investment Promotion ⇩
	Renovation of Infrastructure Railway Electricity supply	Establishment of agro-business base and trade and commerce base

Chapter 6. Industrial Development Program

The Study Area has been isolated from more advanced areas in the south due to geographic location and poor inter-regional infrastructure. Thus, the competitions among industries are not severe, while their markets are quite limited. Under the market economy, enterprises face severe competition, and therefore local economies need to be revitalized.

Within this context, three development issues are conceived, which are related to industrial development in the Study Area; 1) how to revitalize the existing small and micro enterprises, 2) how to introduce new industries to improve the living conditions and utilize indigenous resources, and 3) how to establish a leading industry to realize comparative advantage of the Study Area. The industrial development program for the Study Area addresses these issues as described below.

6.1. Strengthening of GPZ Function

The basic strategy for the industrial development in the Study Area has two components: 1) to promote structural reform of industrial sector from a macroscopic standpoint and 2) to strengthen private business activities to revitalize regional industrial activities. Implementation of the development programs requires involvement of many different organizations from both the public sector and the private sector. GPZ will have to play an active role executing programs coordinating them. The GPZ function, therefore, should be enhanced.

6.1.1. GPZ functions necessary for industrial development

The following functions are deemed necessary for the execution of the development programs.

Function 1: Promotion of industrial reform

(1) Provision of policy making
Preparation of long and medium term development strategy/policy for the regional development based on sector analysis.

(2) Introduction of advanced technology and diversification of industrial structure
Promotion of introduction of new industries and management technology.

(3) Establishment and maintenance of industrial fundamentals
Establishment of industrial infrastructure to provide business information.

(4) Investment promotion
Provision of regional information and establishment of attractive environments for investors.

(5) Reinforcement of industrial linkages
Establishment of and support for industrial associations to strengthening linkages among industries.

Function 2: Support for enterprise reform

(1) Improvement of business management

Provision of enterprise diagnosis programs to modernize management methods.

(2) Revitalization of small and micro enterprises

Provision of training programs to develop high quality human resources.

(3) Provision of information

Provision of market information and technical information necessary for effective business management.

6.1.2. Proposed organization

To strengthen the present organization of GPZ, the following additional departments are proposed for the planning, coordinating and execution of the development programs (Figure 3.9).

(1) Planning and Research Department

The Planning and Research Department for the regional industrial development includes three sections: Planning and Strategy Section, Market Development Section and Investment Promotion Section.

The Planning and Strategy Section prepares long and medium term development strategy/policy and executive plans in harmony with the national policy. It is difficult for the Central Government to prepare the executive plan for regional development. Its major role is to establish the basic policy and strategy. The Planning and Strategy Section performs preparation, coordination and securing of the budget for executive plans and programs. The Market Development Section and the Investment Promotion Section provide public support services for the private sector, such as collection and analysis of pertinent information, dispatch and reception of missions, and assistance in exhibitions of local products.

(2) SMEs Promotion Division

The establishment of SMEs Division is proposed in consideration of the importance of promoting the SMEs' growth and development and of improving their management. The division has two sections, Management Development Section and Human Resources Development Section. These sections will implement comprehensive programs in the following areas:

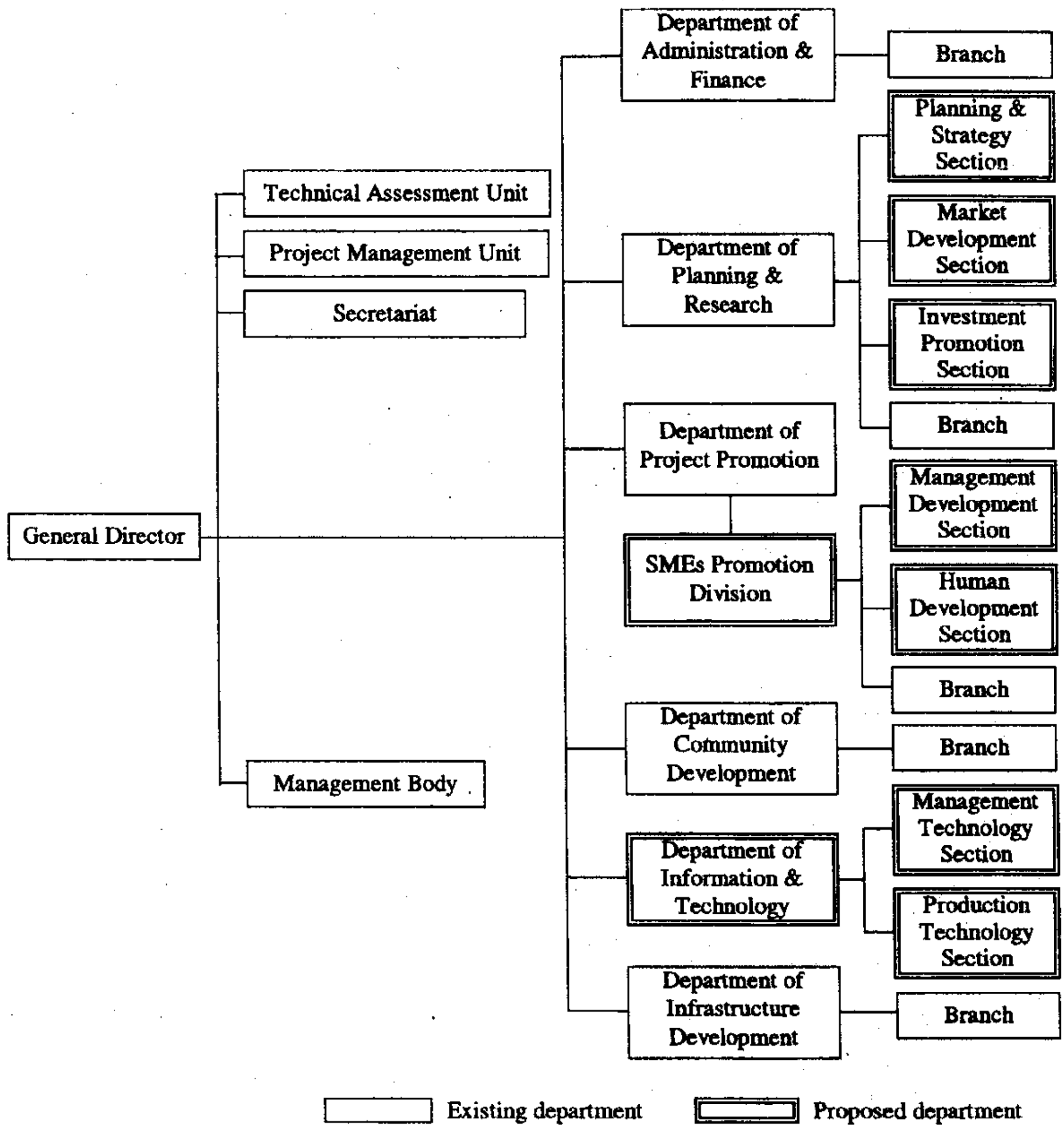
(a) Rationalization of management,
(b) Structural upgrading,
(c) Improvement of technology,
(d) Modernization of equipment,
(e) Stimulation of local demand, and

(f) Enhancement of subcontracting among local industries.

(3) Information and Technology Department

The Information and Technology Department provides information services in the areas of management technology and production technology as a public body. The department will research advanced technology, market and other business information necessary for the development of the local private sector. The department will also provide necessary information for other departments and implement feasibility studies on executive programs.

Figure 3.9. Proposed Organization of GPZ for Industrial Development



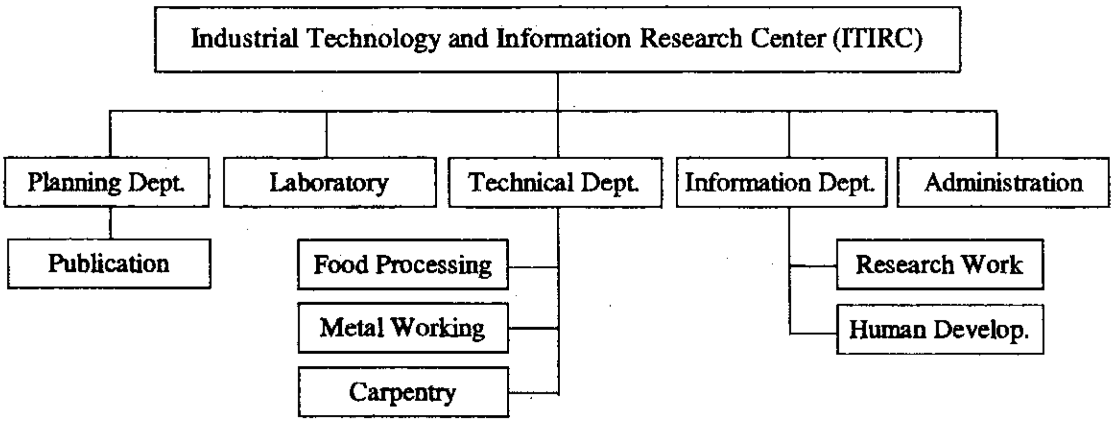
6.2. Reform of Industrial Structure

6.2.1. Establishment of Industrial Technology and Information Research Center (ITIRC)

The establishment of an industrial technology center for providing new technology and information is indispensable in the development of the regional industries. The Industrial Technology and Information Research Center (ITIRC) provides the industrial technology and information necessary for the business activities.

Figure 3.10 shows the organization of ITIRC. ITIRC has five departments: technical department, information department, planning department, laboratory and administration.

Figure 3.10. Organization of Industrial Technology and Information Research Center (ITIRC)



(1) Basic objectives and proposed program

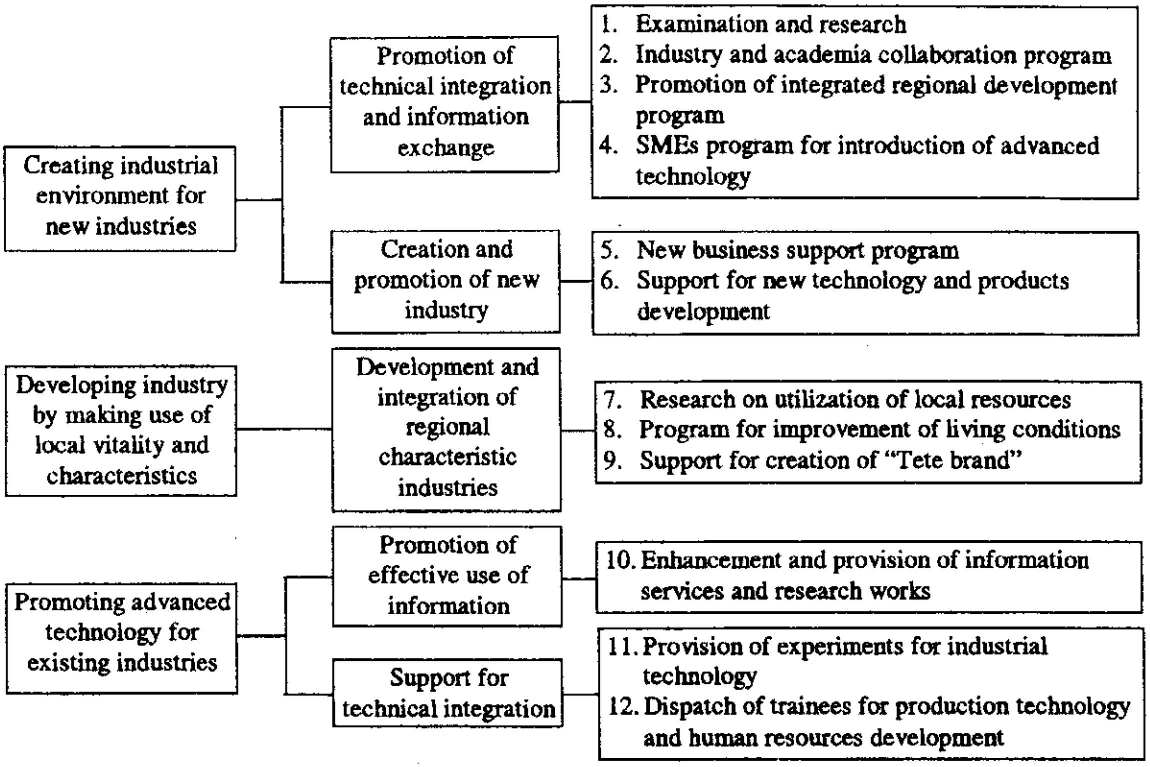
The basic objectives of establishment of ITIRC are to (1) create industrial environment to develop new industries, (2) develop industries that make use of the vitality and characteristics of local industries and (3) promote introduction of advanced technology for existing industries. To achieve these objectives, the executive programs are proposed as presented in Figure 3.11.

(2) Technology development

In general, research activities of a private enterprise are limited to its own products because it cannot afford to implement long term or basic research. In addition, research works require various experiments and employment of researchers.

In many countries, the public sector performs and provides research activities as part of its roles. In Japan, for instance, technology centers have been established in various provinces and cities, which contribute to introducing advanced technology to local industries.

Figure 3.11. Objectives and Proposed Programs of ITIRC



Two major domains of technology development are (i) applied research for industrial technology and (ii) laboratory experimentation for developing new products and improving production technology. ITIRC is expected to offer and perform the following services and functions.

(i) General technology management services:
Production control, quality control and maintenance of facilities;
Industrial designing and packing design; and
Standardization of products.

(ii) Technology research for selected industries such as food processing, metal works, etc.

(iii) Laboratory research:
General testing.

The industrial sector is composed of various industries and ITIRC cannot cover the technology of the entire industries. Therefore, to determine the functions of ITIRC, it is necessary to select products that have the potential to be developed by the local industries, i.e., food processing, metal works and carpentry, in the Study Area. The local industries then concentrate their efforts to develop and market them as "Tete brand" products.

(3) Business information

Timely and accurate business information is essential in effective decision making in corporate management. The Information Department of ITIRC will collect and analyze data related to socio-economy, domestic and international markets, and technology, and provide pertinent business information for local enterprises to utilize, as specified below.

(i) Domestic market information:
Collection of market information,
Administrative information from central and provincial governments, and
Enterprise information (based on questionnaire surveys).

(ii) International market information:
Cooperation with foreign information centers and organizations, and
Collection of market information form magazines and the Internet with translation.

(iii) Research and analysis:
Market trends by product,
Market analysis, and
Research on prospective businesses and products.

(iv) Provision of information:
Periodical publication, and
Symposia for research works.

6.2.2. Market development and investment promotion (Business Center)

The private sector is expected to be the growth engine of the economic development in the Country. A business center should be established for new market development and investment promotion.

(1) Market development

A business center has two functions: (i) to provide information of local industry, and (ii) to strengthen linkages among local enterprises for their market development. It is necessary for Tete province to acquire the nationwide recognition as a producer of high quality local products. Thus, as part of the undertakings for market development and investment promotion, a permanent exhibition hall for local products should be established, trade fairs be organized and held, and assistance be provided for participants in such events.

(2) Investment promotion

High economic growth was made possible in ASEAN countries through the promotion of export-oriented foreign enterprises. As located in the triangle of three countries, Malawi, Zambia and Mozambique, the Study Area has a potential to attract foreign investments, and to achieve this, the following should be undertaken.

(a) Establishment of one-stop office

For improving the investment environment, one-stop office is necessary to reduce barriers caused by red tape, by providing:

- Simplified procedure for application and approval (business license, customs and tax office), and
- Support for investment application.

(b) Provision of investment information

For investors need a lot of information to compare different candidate sites for their investment, services to assist their decision-making should be provided:

- Preparation of information for investors (living conditions, infrastructure, raw materials, locations of candidate sites, labor, etc.),
- Settlement of CPI branch (list of local industries and enterprises), and
- Intermediary between local enterprises and investors.

(c) Collecting information on potential investors

It is important to have information on potential investors' countries/areas and target industries:

- Examination of investors' countries/areas,
- Examination of investors' target industries,
- Dispatch and reception of investment missions, and
- Local investment seminars and symposia.

(3) Strengthening industrial linkages

Industrial linkages constitute an important factor in the regional economy. The are a necessary element in upgrading technology of small and micro enterprises as well as medium scale enterprises. To strengthen the industrial linkages, a database should be created, which can be used to exchange products information and production technology. One of the roles of the business center is to promote industrial linkages among local enterprises, thereby helping create the "Tete brand" for designated products in the Study Area, such as furniture and fruits.

6.2.3. Modernization of corporate management

Proper corporate management is not employed at most enterprises in the Study Area. Modern management methods must be introduced to the local enterprises so that they can apply them to their management styles to become competitive in the market economy. The following three training programs are proposed for the modernization of management methods. The programs incorporate basic and applied theories of production technology (off-the-job training) and physical training (on-the-job training):

- Corporate management training program,
- Sales promotion training program, and
- Traveling enterprise diagnosis program.

(1) Training program

(a) Corporate management training program

The corporate management training program provides short and medium term courses for entrepreneurs and management staff. It is designed to instill entrepreneurs with a new mindset necessary for a new corporate management method. The contents of the program include:

- Basic management theories of the market economy,
- Provision of strategic marketing theories,
- Analysis method on enterprise circumstances for market promotion,
- Preparation of corporate strategy,
- Market forecast for production schedule, and
- Analytical methods on new investment.

(b) Sales promotion training program

Sales promotion is indispensable in strengthening the financial base of a company. This program will help entrepreneurs acquire practical know-how on how to promote sales activities and how to analyze corporate strategy based on market information, covering:

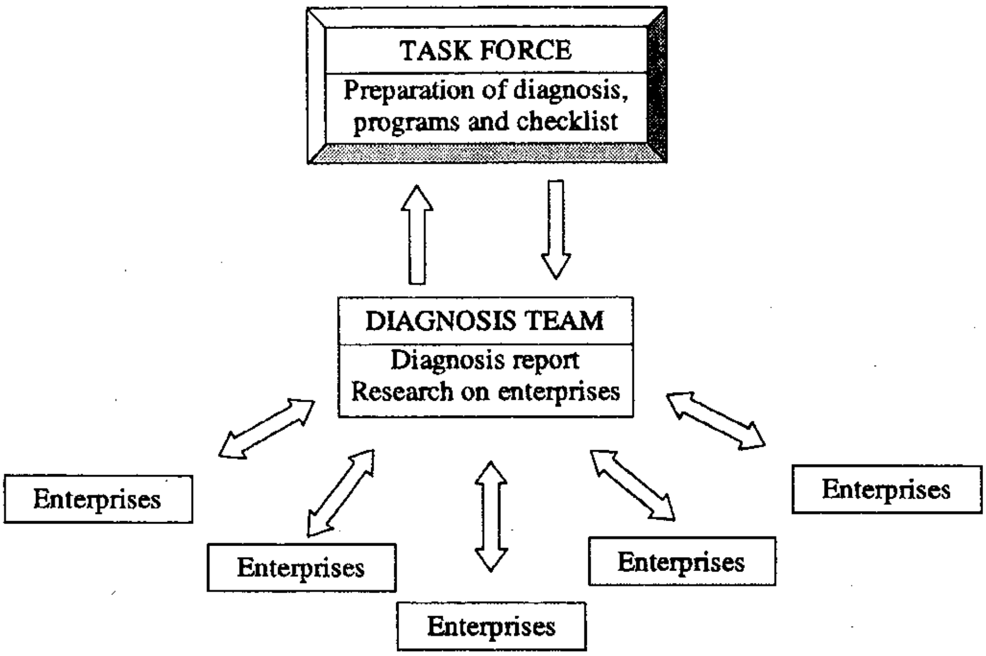
- Strategic marketing theories,
- Analytical methods of marketing, demand forecast and market promotion,
- Adjustment between corporate strategy and sales strategy,
- Human development for sales personnel, and
- Information on after-sales service.

(c) Traveling enterprise diagnosis program

Reform and modernization of enterprises cannot be achieved in a short time. As a long-term program, a traveling enterprise diagnosis system should be established. This program aims to increase entrepreneurs' competitive power through improvement of production control and development of technology.

A task force will be formed, which will prepare a specific program of diagnosis and checklist and train diagnosis team members. Diagnosis teams, consisting of experts of production control and production technology, take charge of several enterprises (Figure 3.12). Each team goes on a tour to undertake diagnosis of the target enterprises and supervise them on the improvement of their production methods. The team visits each enterprise for about one week on each trip, four times a year. The team informs the enterprise of problems diagnosed during each visit and instructs it on how to remedy the problems and how to lead to improvement. After analysis of improvement conditions, the team leads the enterprises to the next step.

Figure 3.12. Enterprise Diagnosis Scheme



(2) Program implementation

Since establishing a new organization to implement these programs is not cost effective; collaboration with public vocational schools will be sought. Although operation costs should be covered by tuitions, the government support will be called for in the form of tax exemption for training costs.

6.3. Introduction of New Industries

New industries to be introduced should contribute to improving the living conditions of local people through creating employment opportunities and providing useful products at affordable prices. They also should be environment-conscious and socially acceptable. Thus, light industry, import substitution and labor intensive industries may be appropriate.

6.3.1. Establishment of agro-industry base

(1) Introduction of agro-industry

Agricultural products are mainly consumed in the region and part of them is exported to neighboring countries. However, these products cannot be absorbed by local consumption and export. Agro-industry is desirable for absorption of agricultural surplus. In addition, agricultural production is expected to expand in proportion to the development of agro-business. Agro-industry is generally labor-intensive and in areas of raw material production. If properly developed, it can generate job opportunities in rural areas and more income to local residents, thereby contributing to the rural economy. With its rich soil, abundant water resources and ready labor force, the Study Area has a great potential to become a large agricultural production area. However, the region is hardly making use of its agricultural products for agro-industry. Considering the present condition of agro-industry in the Study Area, food processing industry and timber industry are recommended.

(2) Establishment of agricultural cooperatives/associations

For the promotion of agro-industry base, farmers in the Study Area should be organized. Agricultural industry in the Study Area is primarily based on small scale farming. It is urgently needed to alleviate constraints hampering growth and development in the area today, especially (i) lack of credit, (ii) lack of technical knowledge and (iii) insufficient access to markets. It is difficult for farmers individually to resolve these constraints. Agricultural cooperatives/associations should be founded as the basis for the development of agro-industry base. The cooperatives/associations are organized and operated by the private sector with support of the public sector, to offer the following services:

- (i) Provision of micro credit,
- (ii) Provision of fertilizers, agrochemicals and feeds,
- (iii) Rental farm equipment and means of transport,
- (iv) Provision of household goods and daily necessities,
- (v) Technological assistance,
- (vi) Market information, and
- (vii) Collection and distribution of agricultural products.

Farmers constitute major costumers as well as raw material suppliers for the regional industries. Industrial development depends largely on their economic growth.

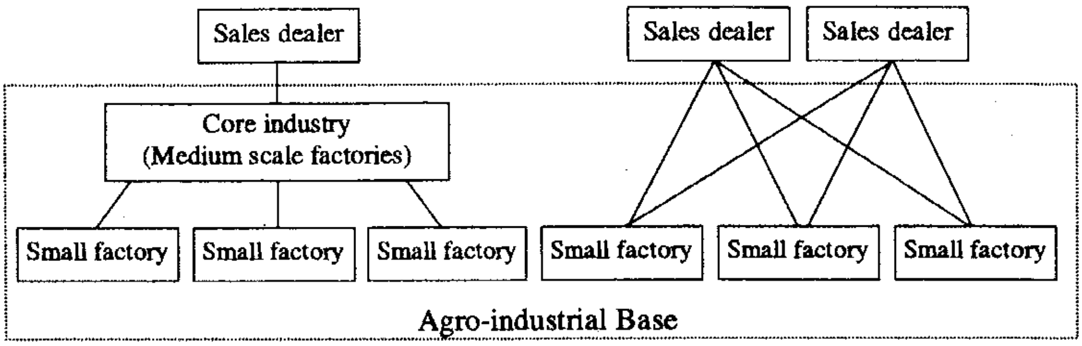
(3) Attainment of technical accumulation

The purpose of establishing the agro-industrial base is to create an area specialized in food production and timber industry. Figure 3.13 shows the conceptual design of the agro-industrial base in the Study Area. In the base, medium scale enterprises are expected to play important roles to enhance sales promotion, diversify high quality products and strengthen regional linkages. The goals to be attained by medium scale enterprises and micro enterprises are as follows.

(a) Medium scale enterprises – Core industry
Enhancement of sales network
Diversification of products

(b) Micro enterprises
Enhancement of linkage with core industries (sub contracting system)

Figure 3.13. Conceptual Design of Agro-industrial Base



To establish the agro-industrial base, the following measures should be taken under the aforementioned support systems.

(a) Modernization of corporate management and strengthening management basis
An important issue on corporate management in the Study Area is introduction of modern corporate management methods to local enterprises so that they can compete and survive in the market economy.

(b) Enhancement of production development
For each enterprise, it is essential to create an environment conducive to aggressive business endeavors such as development of new products and cost reduction in daily business operation.

(c) Development of human resources
Corporate reform cannot be achieved by managers' efforts alone. Talented staff should be trained to succeed in implementing the reform.

(d) Investment promotion
Investment promotion is the most effective means for the regional development. In order to entice investments from outside, the characteristics and advantages of the local industries must be clearly understood and best utilized.

(4) Food processing industry

Because the Study Area produces agricultural products, the present demand for processed food is not large and most processed food products are imported. However, it is anticipated that as the local population will increase to 1.5 million in 2025, it will create a large market for processed food. Table 3.15 shows the projected balance of maize flour, the principal food in the Study Area. The consumption volume of maize and the supply volume will be more or less balanced in 2005, and 111,000 tons of surplus will be generated by 2025. It is therefore recommended that the medium and small scale enterprises be promoted to establish the foundation of agro-industry and to prepare investment environments for food processing industries.

Table 3.15. Projected Maize Balance

	2005	2015	2025
Population	857,500	1,152,400	1,504,200
Requirement of maize flour, tons	188,650	225,294	288,806
Production (Net milled maize available), tons	138,414	234,043	399,779
Surplus/deficit, tons	-50,236	8,749	110,973

Source: JICA Study Team.

Promising categories of food processing industry are mentioned below.

(a) Fruits and vegetables

To establish viable food-processing industries, stable supply of raw materials at reasonable prices is most important. The Study Area produces a variety of fruits (Table 3.16).

Table 3.16. Major Fruit Products in the Study Area

Fruit	Juice	Jam	Fruit	Juice	Jam
Apple	✓		Pomegranate		✓
Peach	✓	✓	Citrus	✓	✓
Apricot	✓	✓	Guava	✓	
Plums	✓	✓	Mango	✓	✓
Pear	✓		Pineapple	✓	✓
Grape	✓		Lemon	✓	
Fig			Grapefruit	✓	

Source: JICA Study Team.

Canned/bottled food is not popular in the Study Area and there is no canning factory. However, the local residents' diet and lifestyles will diversify as urbanization proceeds and their income level rises. Therefore, tomato and other vegetable products and canned/bottled food are promising.

(b) Meat processing

As shown in Table 3.17, the Study Area's meat consumption will likely increase rapidly. Currently, beef and other meats are sold at small butcheries in local open markets and only a little volume of meat is sold at supermarkets in Tete city. The present distribution system will not be able to handle further growth in meat consumption. The environmental conditions should also be taken into consideration. Therefore, it is desirable to create a designated zone for slaughterhouses and cold storages thereby consolidating meat industry in the Study Area.

Table 3.17. Meat Consumption in the Study Area

	2000	2005	2015	2025
Population	761,600	857,500	1,152,400	1,504,200
Beef, ton (Increase)	1,599	2,230(139%)	4,494(202%)	9,025(201%)
Mutton and Goat, ton (Increase)	76	172(226%)	691(402%)	3,008(435%)
Pork, ton (Increase)	533	772(145%)	1,729(224%)	3,761(218%)
Poultry meat, ton (Increase)	1,447	2,058(142%)	4,379(213%)	9,025(206%)
Fish, ton (Increase)	1,523	2,401(158%)	6,108(253%)	15,042(246%)

Source: JICA Study Team.

(c) Other food processing

Cooking oil, sugar and other process food such as potato chips, cereals should be promoted as an import substitution industry.

(5) Timber industry

(a) Market of timber furniture

Wooden furniture is one of the major industries in the Study Area. There are a large furniture manufacturer and many small scale carpentries. Though no statistics on wooden furniture production are available, Mozambique exported US$8 million of wood and its products in 1999.

Table 3.18 shows the demand forecast for wooden furniture based on the increase of the urban population. New markets for furniture are expected to expand to Mt. 793.6 billions in 2015. The annual demand may reach Mt. 80 billions during 10 years from 2006 to 2015. In the same way, the annual demand may reach Mt. 127.5 billions from 2016 to 2025. The annual demand excludes official furniture and renewal markets. Therefore, the timber industry has the large potential of expansion in the Study Area.

(b) Establishment of timber distribution and processing center

A timber distribution and processing center should be established as a base of Angonia timber industry. The center is organized by the member companies of the industry that are located in the industrial zone mentioned above. The functions of the center are:

- to establish joint timber factory to produce standardized materials and to reduce material costs,
- to introduce new materials such as compile timber and plywood,
- to study on creation of new design products as a Tete brand,
- to provide facilities for preservative treatment and drying,
- to provide information of raw timber in the region, and

- to open exhibition hall for market promotion.

(c) Establishment of exhibition hall

Exhibition halls should be installed in the airport and other points in Tete city to appeal the region's agro-industry to investors and visitors.

Table 3.18. Demand Forecast for Wood Furniture in Urban Areas

	2000	2005	2015	2025
Urban population, 1,000	201.8	252.8	406.9	654.5
(Increase, 1,000)		51.0	154.1	247.6
Residence				
No. of houses required, 1,000		10.2	30.8	49.5
Furniture demand, Mt. 1,000 million		255.0	770.5	1,238.0
School furniture				
No. of students, 1,000		20.4	61.6	99.0
No. of schools		41	124	199
Furniture demand, Mt. 1,000 million		7.6	23.1	37.0
Total demand for furniture, Mt. 1,000 million		262.6	793.6	1,275.0

Note: (1) Average No. of Family member are six. (2) Total furniture cost for a house is MT 25 millions including 2 beds, 1 living set and 1dining set. (3) A family has 2 pupils and a school has 250 pupils. (4) Total furniture cost for a class including pupils' desk sets and teacher desk sets is MT 186 millions. (5) Discrepancies are due to rounding.

Source: JICA Study Team.

6.3.2. Production of coal briquette (bio-briquette)

Major fuels used in the Study Area are firewood and charcoal. The use of electricity is still very limited because of its high cost, and the distribution system for propane gas is not organized. In addition, deforestation poses one of the most serious environmental issues in the country. One major reason of the deforestation is the tree-felling by villagers for self-consumption and sales. Under these conditions, coal briquette may be introduced as an alternative solid fuel. Two types of briquettes may be produced: one for the household use and the other for the use by small and micro industries such as forges, bakeries and restaurants.

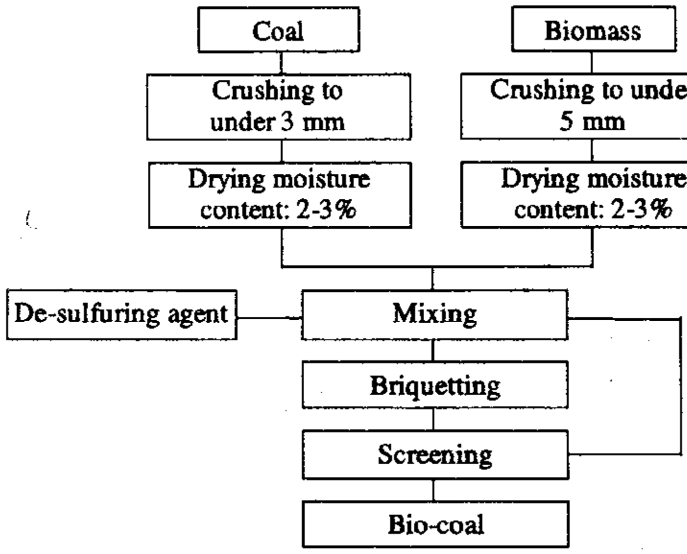
(1) Introduction of bio-briquette

The bio-briquette consists of 70-80% of coal and 20-30% of biomass binder in weight. Its raw materials are coal powder produced at Moatize mine, which is not currently utilized, and biomass binder from agricultural wastes such as wood chips, bagasse (strained lees of sugarcane), rice and wheat straw, and stems of maize. The characteristics of bio-briquettes are (i) ecological, (ii) energy-saving (iii) relatively less smoke-generating, and (iv) easy to handle.

(2) Production process

The flow sheet of bio-briquette production is outlined in Figure 3.14. The bio-briquette has sufficient self-binding structure that use of any chemical binder is not necessary.

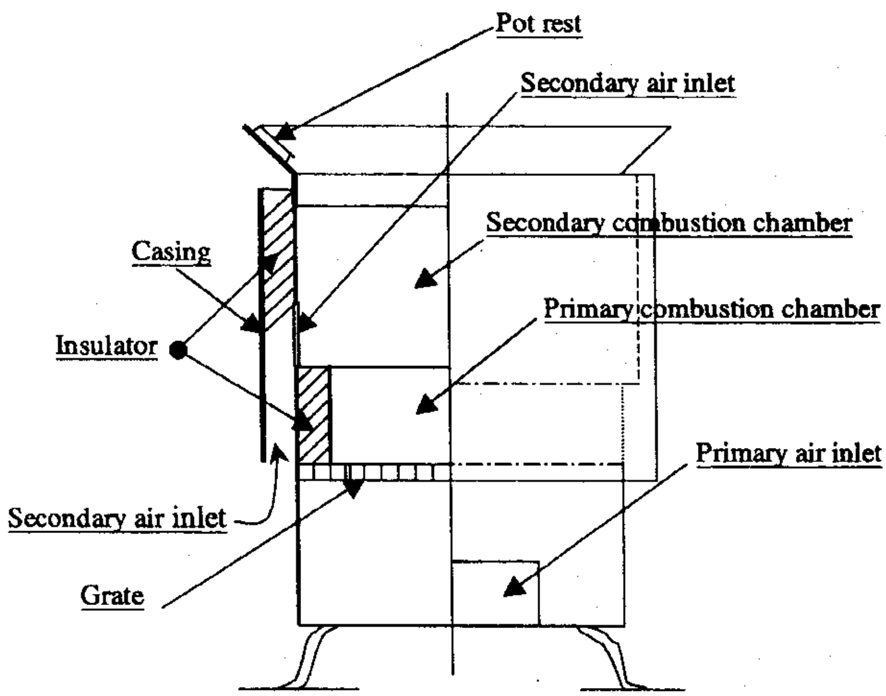
Figure 3.14. Bio-briquette Production Flow Sheet



(3) Stoves

A combustion test is necessary to determine whether the type of cooking stove presently used with charcoal in Mozambique is suitable for coal briquette. Based on the test results, a new type of stove may be deemed necessary. The new stove should be designed in simple structure so that local smiths can produce it easily (Figure 3.15).

Figure 3.15. Sample of Cooking Stove for Coal Briquettes



(4) Marketability

Table 3.19 shows forecast on coal briquette demand. Demand of coal briquette is estimated as 74,000 tons in 2025. Major markets for the briquettes are urban residents. Therefore, it is anticipated that 30% of heat consumption of firewood and charcoal be replaced by coal briquettes.

Table 3.19. Coal Briquette Demand Forecast

	1997	2005	2015	2025
Population in Study Area	711,000	857,500	1,152,400	1,504,200
Consumption				
Firewood (kcal/capita)	281	281	281	281
Charcoal (kcal/capita)	51	51	51	51
Total consumption (1,000,000kcal)	960,960	1,161,055	1,560,350	2,036,687
Substitution ratio of Coal briquette	0%	15%	25%	40%
Coal briquette demand				
(1,000,000kcal)	-	174,158	390,087	814,675
(ton)	-	29,026	65,015	135,779

Note: Heating values per capita are based on Estatisticas de Recursos Minerais e Energia, 1997; Firewood 3,500kcal/kg, Charcoal 6,500kcal/kg, Coal briquette 6,000kcal/kg.

Financial analysis for 30,000 tons coal briquette project is attached in Appendix 2. Potential local demand for briquettes in 2005 is estimated at 29,000 tons. The price of coal briquette is set at Mt. 800/kg based on comparison with the prices of firewood and charcoal (Table 3.20). The total cost of the project is estimated at Mt. 48,536 million. Import cost of briquetting machine is tentatively estimated at US$2 million.

Table 3.20. Prices of Firewood and Charcoal

	Tete city	Other places
Firewood	Mt. 700-1,000/kg	Mt. 330-500/kg
Charcoal	Mt. 600-2,000/kg	Mt. 500-800/kg

As shown in Table 5.21, IRROI (internal rate of return on investment) and IRROE (internal rate of return on equity) after tax are 9.9% and 8.9%, respectively. Although these rates are not as high as the interest rate at Mozambican banks, coal briquette production should be implemented in consideration of the importance of forest conservation.

Table 3.21. Summary of IRR

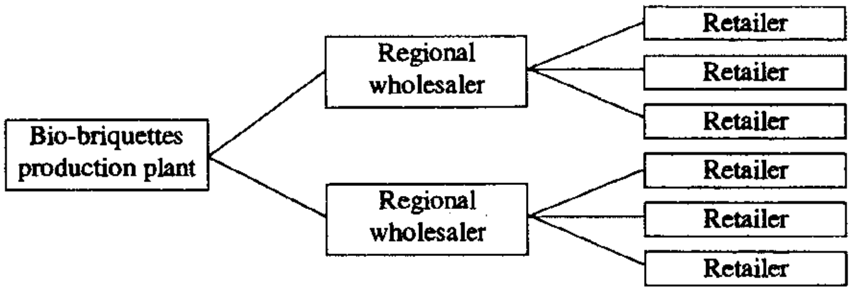
ROI before tax	11.4%	ROE before tax	9.6%
ROI after tax	9.9%	ROE after tax	8.9%

Note: Debt ratio is 30% of equity and 70% of long term loan.

(4) Distribution system

A commercial distribution system should be established to promote coal briquette as a new product. Several wholesale dealers will be settled in the Study Area, at which coal briquettes are packed in plastic bags and distributed to retailers periodically (Figure 3.16).

Figure 3.16. Distribution System for Coal Briquettes



To promote coal briquettes for forest conservation in the Study Area, the Government must discourage the local residents from wood-felling through educational and awareness programs. Sales of firewood and charcoal are important sources of cash income for rural people. Therefore, the diversification of their income sources should also be considered for the people not to have to depend on firewood sales. For instance, micro farmers may be encouraged to find income sources in new industries such as milk industry and soft drink (e.g., fruits juice, etc.) industry. In this respect, agricultural associations are expected to play important roles in implementing the coal briquette program.

6.4. Establishment of Leading Industries

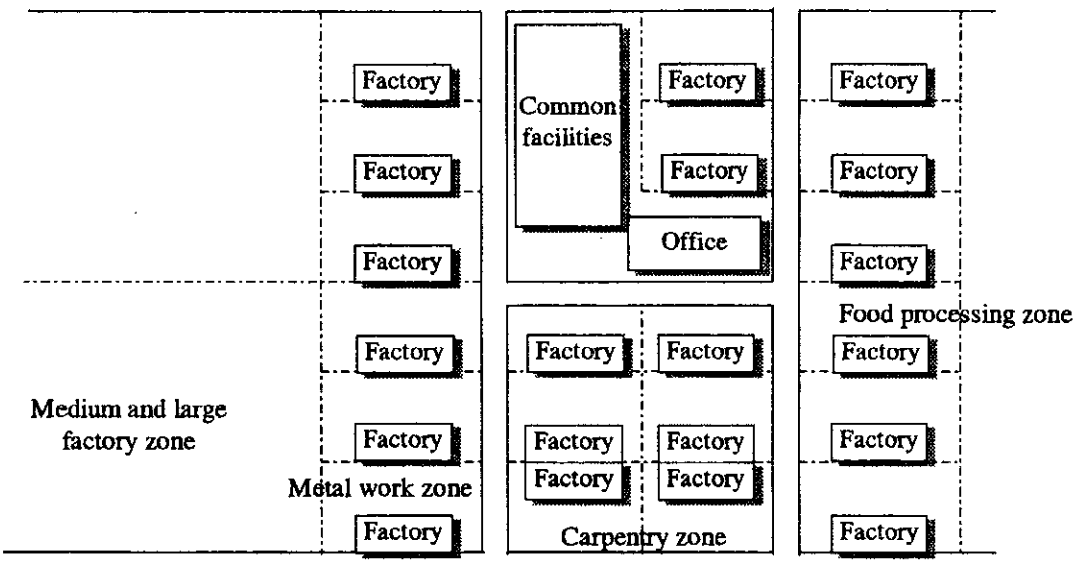
Having core industries or facilities is a desirable condition for regional industrial development. In line with the government strategy for industrial development to make most of local resources, a leading industry may be established for the Study Area on the basis of its rich resources, water and land resources, and strategic location. The following are recommended.

6.4.1. Industrial zone

According to the Special Fiscal and Customs Regime for the Zambezi River Valley, investors in the Valley can receive tax exemption from import duties, consumption and circulation taxes, and also reduction of corporate profit tax. These provisions have been underutilized by local enterprises. To utilize them more effectively and to promote investments in a visible way, an investment promotion zone should be established for local and foreign investors (Figure 3.17).

The zone should be equipped not only with basic infrastructure and utilities but also with a management center, administration office that provides one-stop service functions, technical center for training, research and information services, business center with a bank, courier service, copy center, etc., housings for investors and workers, and amenity facilities. Moatize is a good candidate site, subject to further examination.

Figure 3.17. Layout of Industrial Zone for Small and Micro Factories



The purpose of this program is to establish an industrial zone for small and micro scale factories and medium and large scale factories. Small and micro factories in the industrial zone are encouraged to form a business association by themselves, which serves on behalf of all the member factories and implements such joint undertakings as those outlined below. Factory collectivization can strengthen their business constitution through collaboration in production activities, marketing promotion and technology development.

(i) Research and development

(ii) Production activities

Joint procurement of materials, distribution, training for worker, pollution control, purchase of new machinery, etc.

(iii) Market promotion

Sales promotion, demand survey, exhibition hall, selection of and invitation to prospective participants in trade fairs, preparation of product catalogues, development of original brands, etc.

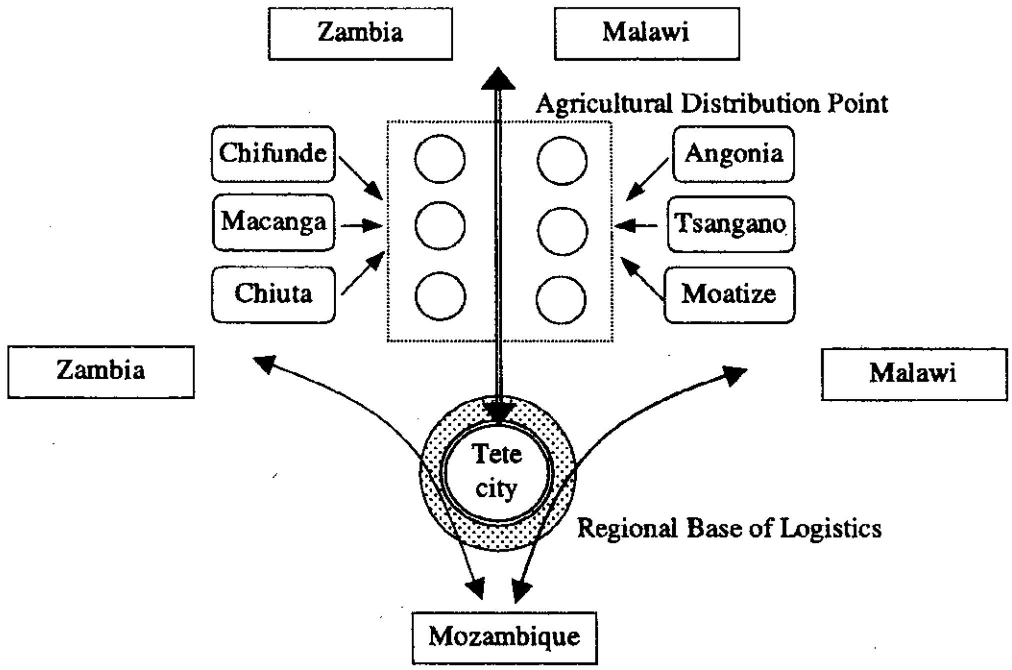
Further, the industrial zone provides high standard infrastructure with which to promote medium and large scale factories.

6.4.2. Distribution center and cargo terminal

Tete city, the largest urban center in the northeast of Mozambique, is also located at the crossroads between the north-south and the east-west artery roads that connects the neighboring countries. Though it makes the city an ideal location for an inland cargo terminal for traffic to and from Malawi, Zambia and Zimbabwe, currently most cargoes pass through Tete city.

Tete city is considered as the most promising site to develop into the core city of economic activities in the north-central region of the country through logistic functions. First, a distribution center should be established as a core infrastructure of logistics. Its functions are (i) to promote trading and commerce industries, (ii) to provide diverse trading channels, and (iii) to secure access to market, as illustrated in Figure 3.18.

Figure 3.18. Concept of Distribution System



Tete province has large agricultural hinterland. Therefore, the main cargoes will be agricultural crops. In addition to its function to help build a core, logistic infrastructure, the distribution center should also provide logistics-related information technology such as direct networks with other terminals, arrangements for joint deliveries, etc.

The distribution center will be operated by the private sector but its facilities may be constructed by the public sector. The center has a high level infrastructure and distribution system controlled by a computer system. The center's major facilities and its distribution system are outlined as follows.

(a) Major facilities:

- Control center,
- Stockyard,
- Warehouse including cold storage,

- Loading and unloading facility,
- Container yard, and
- Fuel station; and

(b) Distribution system:

- Ordering management,
- Delivery control and inventory control, and
- Storage, packing, sorting and shipping system.

6.4.3. Promotion of new industries

(1) Iron and steel manufacturing

The Study Area, endowed with iron ore and coal of high quality, has easy access to a plenty of inexpensive electricity and industrial water and potentials to export iron and steel products to Malawi, Zimbabwe, Tanzania and other southern African countries. Transportation, however, constitutes a major bottleneck.

A careful study needs to be carried out to establish a minimum scale plant initially. The direct reduction process is considered to be suitable technology for supply of high quality steel products in the Study Area. This new process, which uses coal instead of natural gas, is appropriate for a small scale plant with production capacity of 20,000 tons to several hundred-thousands tons per year.

Generally, a plant of that capacity can be built near consumer areas so that transportation cost can be minimized. Since construction of an iron and steel factory presupposes huge investment and readily available human resources, foreign investment is indispensable. A feasibility study should be conducted by ITIRC.

(2) Animal feed industry

As shown in Table 3.22, major meat products consumed in the Study Area are beef and poultry, and 7% of annual increase in meat production is required considering the future population growth. It is predicted that the population of beef cattle and poultry in 2025 will be 5.4 times of the population in 2000. In this respect, livestock will play an important role in meeting the food consumption volume in the future.

At present, there is only one poultry farm and no enterprise in livestock farming in the Study Area. Only a small quantity of animal feed is purchased in Beira or imported from Malawi. However, the feed demand in 2025 will reach around 100,000ton for beef cattle and poultry. Supply of animal feed may become a critical issue of livestock in the Study Area. Therefore, an animal feed plant should be introduced along with the expansion of livestock.

Table 3.22. Projected Livestock Balance

	5% Annual Growth Production				7% Annual Growth Production			
	Population (Head/Bird)	Product. (ton)	Consum. (ton)	Balance (ton)	Population (Head/Bird)	Product (ton)	Consum. (ton)	Balance (ton)
Beef cattle					Beef cattle			
2000	51,559	2,887	1,559	1,328	52,541	2,942	1,559	1,383
2005	65,804	3,685	2,230	1,455	73,692	4,127	2,230	1,897
2015	107,188	6,003	4,494	1,509	144,963	8,118	4,494	3,624
2025	174,598	9,777	9,025	752	285,164	15,969	9,025	6,944
Mutton and goat					Mutton and goat			
2000	66,087	661	76	585	67,346	673	76	597
2005	84,346	843	172	671	94,456	945	172	773
2015	137,390	1,374	691	683	185,809	1,858	691	1,167
2025	223,794	2,238	3,008	-770	365,515	3,655	3,008	647
Pork					Pork			
2000	13,703	617	533	84	13,964	628	533	95
2005	17,488	787	772	15	19,585	881	772	109
2015	28,487	1,282	1,729	-477	38,526	1,734	1,729	5
2025	46,402	2,088	3,761	-1,673	75,786	3,410	3,761	-351
Poultry					Poultry			
2000	442,800	1,993	1,447	546	442,800	1,993	1,447	546
2005	565,238	2,544	2,058	486	621,050	2,795	2,058	737
2015	920,952	4,144	4,379	-235	1,221,699	5,498	4,379	1,119
2025	1,5000,000	6,750	9,045	-2,295	2,403,267	10,815	9,045	1,770

Source: JICA Study Team.

Appendix

Sector Report 1
Economic Sector
Part 3: Industry and Small and Medium Business

Enterprises Interviewed in Tete City

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	ECOP – Civil Building	Civil building			Building house
2	CETA – Labor	Civil building			Roads construction
3	ARTA STUDIO	Civil building	4,193		Building
4	MINIARTE	Civil building	50		Building
5	METAL HELENA	Lock smith materials	30	3	Metal products
6	CAMUCHACHA LOCK SMITH	Lock smith materials	1	4	Metal products
7	JOAQUIM BAKERY	Baker		22	Bread & cakes
8	CONFIANÇA BAKERY	Baker	1,734		Bread & cakes
9	ELITE TAILORING	Sawing	7	2	Clothing
10	AMAZONIA HAIRDRESSER	Beauty	12	5	Beauty product
11	ZAMBEZIA COMERCIAL GARAGE	Services delivery	10	16	Repairing & maintenance
12	TETE RETIFIER	Services delivery	50	34	Repairing & maintenance
13	FUNERAL AGENCY	Coffins sale	2.5	41	Coffins
14	AUGUSTO SIEDADE – Sawing & carpentry	Carpentry	2,120	30	Furniture
15	SITOE SOFA MAKER	Sofa sale	8	22	Furniture
16	SHOES INDUSTRY – Sintrapel	Shoes sale	40,000	65	Shoes
17	BERTA MARIA DE SOUSA – Grain Mill	Maize, flour, milling	120	3	Maize flour
18	CHARLES Grain Milling	Maize, flour, milling	38	2	Maize flour
19	TECNO – INDUSTRIAL	Spare parts commerce	30	7	Cars & motorist spare parts
20	UNIVENDAS CARPENTRY & SAWING	Furniture fabrication & general commerce	30,000	71	Desks, tables, beds
21	EDUARDO L. C. RIBEIRO – Building Company	Civil construction		8	Building, house
22	MARIO – Grain Mill	Grain milling	115	2	Maize
23	STYLUS COMPUTER	Computer training school	50	7	Computer training school
24	SULEMANE TAIBO – Grain Milling	Grain milling	50	3	Maize & mapira
25	THEQUESSE – Grain Milling	Grain milling	50	1	Maize & mapira
26	REFRIGRATON – Repairing Company	Refrigerators repairing			Refrigerators repairing

Enterprises Interviewed in Angonia District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	LIFIDZI MISSION – carpentry	furniture production		16	Furniture, doors, windows, frames
2	GABRIEL – Transport	passenger transport	50	2	Passengers
3	MWANDIRA – carpentry	furniture transport	25	4	Furniture, doors, windows, frames
4	KANTHU NKAKO – carpentry	furniture production	25	1	Furniture, doors, windows, frames
5	EGIDIO – carpentry	furniture production	200		Furniture, doors, windows, frames
6	MAHOMED – Commerce & Industry	hotel industry & general commerce	15	5	Adversity of products
7	BUNGULE – carpentry & Lock Smith	furniture production & welding		11	Carts, furniture, doors, windows, frames
8	BAKERY "Remina" Angonia	bread & cakes production	50	3	Bread & cakes
9	ULONGUE – Mill	maize – flour milling	200	2	Maize – flour
10	RINZI – Milling	maize – flour milling	35	3	Maize – flour
11	SATO ORIGINAL – Panel Beater	panel beating	25	2	20-liter container, watering cans
12	FRANQUI – Mill	maize – flour milling	7	3	Maize – flour
13	HAMILTON FARM	agricultural products sale	800	31	Maize, beans, potatoes, groundnuts, etc
14	HAMILTON MILL	maize – flour milling	24	4	Maize – flour
15	ZOSIYILANA – Bakery	bread & cake production	600	2	Bread, cakes
16	JALE MILL	maize – flour milling	700	3	Maize – flour
17	Diesel Hydraulic & Auto	cars repaying	50	8	Cars
18	JAMISSE GARAGE	cars repaying	50	5	Cars
19	CHUABO COMPLEX MOTEL	hotel industry	3.5	13	Meals, rooms
20	SAKA NYAUNGA MILL	maize – flour milling	5		Maize – flour
21	Chisoka Pottery Association	bricks fabrication	150	4	Bricks
22	Mozambique Leaf Tobacco	tobacco production	50	48	Tobacco

Enterprises Interviewed in Tsangano District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	AGRO – Venancio	Agriculture	25	3	Potato
2	AGRO – Beula	Agriculture	50	10	Beans, maize & potato
3	AGRO – Papias	Agriculture	20	6	Maize, potato wheat
4	GUMBAERA – Mill	Milling	70	5	Maize, mapira
5	BEULA – Milling	Milling	150	2	Maize & mapira
6	KHOBWE – Canteen	Commerce	20	2	Diverse products
7	ONORIO – Canteen	Commerce	500		Diverse products
8	LIMBANAZO – Commercial	Commerce	500	2	Diverse products

Enterprises Interviewed in Moatize District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	AMADE – Grain Mill	grain milling		2	Maize
2	MATSA – carpentry	carpentry products selling		7	Wood products
3	DAUDO – Bar	Bar	225	4	Alcoholic beers
4	CARVALHO – Grain Mill	Milling	78	2	Maize
5	CENTRAL – carpentry	carpentry products selling	75	8	Wood products
6	POWER N° 1 – Garage	repairing servicing		4	Spare parts
7	B. Rest House & Restaurant	bar, rest house & restaurant	27	4	Alcoholic beers & food
8	M. Mbale Garage	Reparing		4	Spare parts for car (vehicles)
9	Carimo Bakery	bread & cake production	75	10	Bread & cakes
10	Irmaos Adriano Garage	cars reparing	5	3	Vehicles

Enterprises Interviewed in Macanga District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	AGRO – Nehinga	Agriculture	20	2	Maize, beans, tomatoes & vegetable
2	AGRO – Furancungo	Agriculture	20	2	Maize, beans, groundnuts
3	CARPINTARIA	carpentry		1	Mobil, furniture
4	TISONDANE – Banca	Commerce	25	1	Diverse
5	NBETA – Banca	Commerce	70	1	Diverse
6	ASSUL DE SAO FRANCISCO – Banca	Commerce	50	4	Diverse

Enterprises Interviewed in Chiuta District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	SAPHO – carpentry	furniture production	35	16	Furniture, frames, windows, doors
2	SECOMA – Manje	shop (store)	300	4	Diverse products
3	TAILORING & SEWING	Tailoring	12	1	Clothes
4	USED CLOTHES	used clothes business	2800	1	Used clothes
5	BOMBA CANTEEN	diverse products selling	6	1	Diverse products
6	BIEMO CANTEEN	diverse products selling		1	Diverse products
7	GOOD LUCK CANTEEN	products selling	3	3	Diverse products
8	MANJE BAKERY	bread fabrication	450	2	Bread
9	CECOMA – Manje	bread fabrication		2	Bread
10	FIXED CANTEEN	diverse product selling	186	1	Commercial products
11	NOVIDADES M. CANTEEN	diverse product selling	19	2	Commercial products
12	ADIMONE – Grain Mill	grain milling	145	10	Maize flour

Enterprises Interviewed in Chifunde District

No.	Company name	Business type	Capital (Mt. million)	No. of employees	Major products
1	Commercial Mini Complex of Chifunde	Commerce	341	2	Products of first need
2	SULEMANE TAIBO – Grain Milling C.	grain milling	24	3	Maize flour
3	THEQUESSE – Grain Mill	grain milling	50	1	Maize flour
4	TIKAONANE PA BAWE – Grain Mill	grain milling	80	2	Maize flour

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

Sector Report 1: Economic Sector

Part 4: Services

Contents

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Part 4: Service Sector

Chapter 1. Service Sector in the Study Area

1.1. Existing Conditions of the Service Sector

Table 4.1 shows the number of retailers and wholesale traders in the Study Area by their operation status. Those rehabilitated indicate shops or wholesale traders that recently rehabilitated their buildings, either with government assistance or utilizing their own fund.

Table 4.1. Number of Retailers and Wholesale Traders in the Study Area in 2000

City/District	Retailers			Wholesale traders		
	Operational	Rehabilitated	Total	Operational	Rehabilitated	Total
Tete city	133 (76.9)	0 (0.0)	133 (64.6)	26 (81.3)	0 (-)	26 (81.3)
Moatize	15 (8.7)	5 (15.2)	20 (9.7)	4 (12.5)	0 (-)	4 (12.5)
Angonia	13 (7.5)	14 (42.4)	27 (13.1)	2 (6.3)	0 (-)	2 (6.3)
Chifunde	3 (1.7)	3 (9.1)	6 (2.9)	0 (0.0)	0 (-)	0 (0.0)
Tsangano	2 (1.2)	4 (12.1)	6 (2.9)	0 (0.0)	0 (-)	0 (0.0)
Chiuta	3 (1.7)	3 (9.1)	6 (2.9)	0 (0.0)	0 (-)	0 (0.0)
Macanga	4 (2.3)	4 (12.1)	8 (3.9)	0 (0.0)	0 (-)	0 (0.0)
Total	173 (100.0)	33 (100.0)	206 (100.0)	32 (100.0)	0 (-)	32 (100.0)

Tete city functions as the commercial center of the Study Area. The shops in Tete city accounts for 65% of all the shops in the Study Area, while the share of wholesale traders in Tete city was even higher at 81%. Since most shops in the districts are smaller in size than those in Tete city, Tete city's role would be even more dominant in terms of sales volume. Angonia and Moatize follow Tete city with their shares at 13% and 10% for shops and 6% and 13% for wholesale traders respectively. There are no wholesale traders in other districts.

Rehabilitated shops are found in the six districts outside Tete city. Some of the rehabilitation works were made with the government assistance under FARE program, which finances the rehabilitation cost. In year 2000, the FARE program financed 26 projects in Tete province. The remaining 26 rehabilitation works in Tete province were undertaken utilizing owners' own fund. Assuming the same ratio, the rehabilitation works assisted by the FARE would be somewhere 16 to 17 in the Study Area. Another government program called AMODER financed 1 shop each in Moatize district and Mutarara district, the latter of which is outside the Study Area.

The average number of people served by a shop in the Study Area is 3,451. The shop-to-population ratio varies widely from district to district; from 767 in Tete city, to 5,450 in Moatize, 5,875 in Macanga, 8,000 in Chifunde, 8,333 in Chiuta, 9,185 in Angonia, to 17,833 in Tsangano. The ratio of one shop to 767 persons in Tete city is about ten times lager than in Japan (79 persons per shop in 1991). The Study Area, however, is relatively better off compared with the rest of Tete province. The Study Area's average ratio of 3,451 people per shop was about 26% lower than the provincial average at 4,672 persons per shop.

Weak retail and wholesale functions in the Study Area result in the extremely limited circulation of farm produce. Table 4.2 shows the proportions of some farm produce commercialized to the total production in Tete province.

Table 4.2. Level of Commercialization of Selected Crops in Tete Province

Crop	Amount commercialized (ton)	Amount produced (ton)	Proportion (%)
Maize	7,126	250,366 [1)]	3.5
Beans	773	7,630 [2)]	10.1
Groundnuts	125	2,430	5.1

Notes: 1) The amount produced for maize is estimated by multiplying the production amount in the Study Area and 161%, which is the ratio of the population in Tete province to the Study Area's. 2) The amount of beans produced is that of kidney beans, only for which data were available for the Study Area. The value for Tete province is derived in the same way as 1).

It is true that official retailers and wholesale traders must bear various burdens imposed by administration and thus experiencing increasingly severe competition with informal sector operators. Yet, it is undeniable that unofficial traders fill the gap between people's demands for commodities and the lack of supply in these commodities caused by immature commercial and distribution network. An important issue would be to create an environment that would promote fairer competition between official and unofficial traders as well as provide traders with easier access to rural areas.

1.2. Findings of Trade and Market Survey

A trade and market survey (TMS, hereafter) was carried out in February 2001 with the recognition that integration of the whole Study Area into a regional commercial network would contribute to vitalization of economic activities and upgrading of the people's living standard. Tete city and six districts were covered by the TMS. There are 289 collected samples in total, comprising 131 farmers, 127 shops, 31 wholesale traders, trucking companies and warehouses

The results of the TMS, which are presented in Appendix, are summarized as follows.

(1) Farmers living in the areas close to Tete city tend to grow a wider variety of crops compared with those in remoter areas. Farmers in Moatize grow such crops as tomatoes and cabbages in addition to maize. Farmers in Chiuta district, on the contrary, tend to be more heavily dependent on maize. This difference would result from the condition of access to market. Shorter distance to and ready access to

market enable farmers in Moatize to grow vegetables. This indicates the increased possibility of crop diversification for farmers in remote areas by access improvement.

(2) Many farmers indicated that their maize harvests of earlier years had rotted and they had to depend on the last year's harvest for their food consumption. This fact indicates the necessity to establish appropriate storage facilities and promote outward oriented market development. At the farmer's level, crop diversification should be promoted to increase efficiency in farming activities and secure more stable income for farmers. Farmers have not tried crop diversification due to uncertainty about market.

(3) Farmers are highly conscious of the necessity and effectiveness of establishing farmers association. Most farmers interviewed would join a cooperative when one is established by making a certain level of contribution. Though the levels of contribution farmers are ready to make vary depending on each farmer, their levels were much higher than expected. The answer to a question on the reason why farmers do not start setting up a farmers association on their own was that farmers distrust each other and it is difficult for them to start that kind of initiative at the community level. Some sort of involvement by an outside party is necessary according to them. This point indicates the necessity on the part of the government to play a more active role in farmers' association initiative.

(4) As expected, the concern for acquiring transportation means through farmers' association is very keen. Most farmers want to have transportation means for a variety of purposes such as transporting farm produce and farm input, and going to market to buy goods and non-farming purposes. The types of vehicles they would like to get are truck, tractor with a trailer and ox cart.

(5) Some farmers pointed to the need for better farm implements such as hoes, plows and harrows. Many of them are now imported from the neighboring countries such as Zambia and Malawi. Small scale industries applying simple techniques should be promoted to meet this kind of demand.

(6) In most cases, seeds and fertilizers are not available in their communities. Some farmers do not use fertilizers. Seeds are obtained either from the previous year harvest, from other farmers or bought in towns.

(7) Once an agriculture association is set up, its functions should be comprehensive covering farmers support measures as well as retail function. A farmers association could function as a channel for collective sale of farm produce and provision of farm inputs and daily commodities farmers need. Vehicles to be collectively purchased could be used effectively for this purpose as well.

(8) Many shop owners mentioned that there were a lot of commodities that customers would like to buy from them, but are not available, such as construction materials, electric appliances, foodstuff and other daily consumption goods. The possibility of procuring those goods at lower costs needs to be studied further, including direct purchase from closer neighboring countries and local production rather than from distant Maputo. Streamlining import-related regulations and tax systems would be required.

(9) Severe competition was cited as a factor for the declining business of some formal shops. There are many informal stalls around formal shops, selling similar kinds of goods at lower prices. Government regulations are imposed on formal shops, while no control on informal shops. This issue should be looked at from a macroscopic perspective to promote commercial expansion regardless of its form. While growth of the whole trade sector should be encouraged, fairer conditions for competition should be sought as well.

(10) Limited access is a problem for farmers but more so for shops. Once transportation infrastructure is improved in rural areas, shop owners would be willing to expand their business, especially in the range of goods they carry, to rural areas

(11) It is not only bad road conditions that hamper commercial development in the rural area. Regulations too complex and bureaucracy too strong are cited by many of the interviewed wholesale traders as a major constraint in starting and expanding business in Tete province. This problem is especially serious in the provinces and districts such as Tete province. Regulational reforms taking place in Maputo have not penetrated into provinces and districts yet. Many of the goods are transported from South Africa and Zimbabwe and reach Mozambican border districts consumers through Malawi by informal channels rather than through Mozambican routes. This is taking place due to complicated and costly procedures for importing goods into Mozambique as well as poor physical infrastructure in the rural area on the Mozambican side. Administrative decentralization and streamlining of the procedures would be one of the major issues in promoting economic development of the Study Area. Attraction of foreign direct investments would be realized only after improvement of these kinds of both soft and hard infrastructures are achieved.

Chapter 2. Strategy for Service Sector Development

There are three core components of service sector strategy: (1) support of farmers' initiative, (2) creation of a favorable physical environment and (3) promotion of an efficient institutional framework. Each component is described.

(1) Support of farmers' initiative

As revealed by the TMS, farmers are ready to organize themselves in order to increase their marketing capability and purchasing power and improve farming technology. Collective effort by farmers would enable expanding market outlets for farm produce and channels for acquiring farm inputs and implements and various daily commodities. Formulation of farmers associations will be effective in these respects in the absence of mature distribution network. The role of the government would be to support this farmers' initiative in the form of financial assistance and provision of technical training program. Grass-root initiative by farmers will be greatly enhanced by such government support measures given to higher tier farmers organizations such as district or provincial unions, which will extend financial and technical support down to lowest tier farmers associations.

(2) Creation of a favorable physical environment

The second strategy is concerned with creation of a physically favorable environment for commercial development. The TMS has revealed strong intention of retailers and wholesalers to develop their business in rural areas. Low quality of roads, especially, is a discouraging factor for them to do so, as shown by the TMS result that close to 80% of the retailers and wholesalers are expecting road upgrading. It is rather the government function than farmers' initiative that will be able to bring about fundamental improvement in the physical environment for business development integrating the rural areas.

(3) Promotion of efficient institutional framework

Upgrading physical environment alone will not result in the development of commercial network. Creation of a favorable institutional environment would be another essential path to be followed. A better institutional environment would be created by streamlining complex regulations and administrative procedures at provincial and district levels, modifying the punitive tax system and regulations for import and establishing a funding mechanism with soft conditions. A good balance needs to be found in order to guarantee fairer competitions between formal and informal retailers. On the one hand, informal retailers are filling the gap between the demand by consumers and insufficient supplying capability of the formal sector retailers. On the other hand, they are endangering the sound operation of the formal sector operators by evading various obligations. An improved institutional environment should ensure competition among all the parties with fairer conditions.

Chapter 3. Measures and Projects

The following measures and projects are proposed:

a. Farmers association promotion,

b. Business center establishment,

c. Institutional environment improvement:

  - Streamlining laws and regulations concerning business operation and investment at the provincial and district level;
  - Improvement in tax systems, especially those concerning import and export; and
  - Improvement of tax system and regulations for creating a fairer balance between formal and informal sectors, and

d. Improvement of physical infrastructure, especially communication systems such as road, railway, truck terminal, bus terminal and airport.

An in-depth study was carried out for farmers' association promotion, business center establishment and partly for transportation projects. They are presented in a separate volume for in-depth studies. Measures for institutional environment improvement are explained in detail in the volume of "Administration, Finance and Institutions."

Appendix
Results of Trade and Market Survey

A trade and market survey (TMS, hereafter) was carried out in February 2001 with the recognition that integration of the whole Study Area into a regional commercial network would contribute to vitalization of economic activities and upgrading of the people's living standard. Tete city and six districts were covered by the TMS. The collected samples are summarized in Table A1 and the survey's major findings follow.

Table A1. Number of Samples Collected by Trade and Market Survey

District	Farmers	Shops	Wholesale trader, trucking company, warehouse	Total
Angonia	24	8	3	35
Chifunde	17	21	-	38
Chiuta	24	14	-	38
Macanga	42	24	1	67
Moatize	7	17	3	27
Tsangano	9	7	1	17
Tete city	8	36	23	67
Total	131	127	31	289

1. Farmers

a. Farmers show strong sense of commitment in farmers association (FA, hereafter) initiative. The following table summarizes the average, mode, maximum and minimum amounts of contribution farmers are ready to make in starting a new farmers association (Table F-1 to F-4).

Contribution Farmers Are Ready to Make

Type of contribution	Average	Mode	Maximum	Minimum
Part of income (%)	5.9	9-10	19-20	0-1
Cash (Mt.)	338,710	90,000-100,000	>500,000	0-10,000
Harvested crop (kg of maize)	122	80-100	>300,000	0-20
Labor (days/year)	19	0-10	81-90	0-10

In terms of cash, the amount of Mt.90,000-100,000, equivalent to US$4.0-4.4 (US$1= Mt.22,700), is most frequently observed for contribution. As for "in kind", farmers are ready to contribute 80-100kg of maize. Assuming contributed maize is marketed, sales would be Mt.120,000-150,000 or US$5.3-6.6 at Mt.1,500 per kg of maize, which is one of the highest farm gate prices of maize. For planning purpose, contribution expected from farmers could be assumed at 4-5 dollars per FA member.

b. A high level of foreign currency penetration is observed in Angonia, Macanga and Tsangano districts with farmer's transactions taking place in Malawian kwacha at 70%, 53% and 50% of all the transactions. Chifunde also has this problem, but at a lower level at 18%. Farmers in Chiuta, Moatize and Tete city have no transactions in foreign currency. (Table F-5)

c. The most serious marketing problem is found in Chiuta, Chifunde and Macanga, with farmers unable to find market outlet accounting for 100%, 95% and 81% respectively. In Angonia and Tsangano, on the contrary, farmers with access to market account for 83% and 80%. Farmers in Angonia and Tsangano Moatize and Tete city have no marketing problem, either. (Table F-6)

d. Tractor with trailer is the most popular transportation mode farmers wish to have (28%), followed by ox cart (27%), truck (21%) and sedan (14%). (Table F-7) The major three purposes for using vehicles, once made available, are: transporting farm produce to central storage sheds and market (32%), transporting farm inputs to farming areas (29%) and going to market for buying commodities (28%) (Table F-8).

e. The present modes of transporting farm produce are buyers' truck (36%), hired private truck (27%), and own transport including trucks, trailers, ox cart and bicycle (16%). Most of own transport is considered bicycles or ox cart (Table F-9). The lack of own transportation mode limits farmers' possibility for selling farm produce to competitive market.

f. Reflecting the constraint in reaching market, the manner in which prices of farm produce are settled is not favorable for farmers. Those farmers who have to accept the price offered by buyers account for 71% of all the farmers. Those farmers who were successful in settling the price based on the farmer's offer was only 16% (Table F-10). Naturally the farmers who are not satisfied with the agreed price account for 74% (Table F-11). Dissatisfaction with price is especially high when farm produce is sold in Malawian kwacha with dissatisfied farmers accounting for 97% of all, while the proportion is 70% when farm produce is sold in Mozambican Metical (Table F-12).

g. Road condition from farm area to market is considered by farmers generally good against prevailing notion in urban area, indicated by the fact that farmers with good access from farm area to market account for 68%. Most farmers (95%) are ready to participate in road repair work (Table F-13).

h. The most popular farm produce in the Study Area is maize grown by 93% of the farmers, followed by groundnuts (32%), beans (29%), and tobacco (28%). More farmers are growing tobacco in the eastern part of the Study Area including Angonia and Tsangano districts (Table F-14). Farmers growing two crops comes first at 31%, followed by those growing only one crop at 28% and three crops at 19%. Farmers growing one to three crops in total account for 77% of all the farmers. Generally crop selection of the farmers in the eastern part of the Study Area are more diverse (Table F-15).

i. The highest proportion in farm area is found in 2 to 3 ha per farmer in the Study Area. Farmers in the western part such as Chifunde, Chiuta and Macanga own larger farm area with the highest proportion in 4 – 5 ha per farmer, while that in the eastern part is 2 to 3 ha per farmers (Table F-16).

j. Most of the farmers are not financed for their farm production. Those financed account for only 17% of all (Table F-17). They are financed mainly by Mozambique Leaf Tobacco Company.

k. Availability of fertilizer is limited. Farmers, who have access to fertilizer, account for only 28%. The eastern farmers are more accessible to fertilizer with 44% accessible, while the proportion is down 19% in the western part (Table F-18).

l. The proportions of farmers joining existing farmers cooperatives are 24% in the Study Area, 36% in the eastern area and 18% in the western area. These figures are somewhat contradictory to general observation made during the survey that there were no functional farmers organizations. It would be possible that farmers remain members of non-functional cooperatives established under the socialist government (Table F-19).

m. Most farmers are willing to participate in a farmers association once one is formulated. The farmers who answered positively accounted for 95% in the Study Area (Table F-20). The following are the major reasons why farmers would like to join a farmers association (Table F-21):

- Help develop marketing,
- Help acquiring farm inputs,
- Enhance mutual support,
- Help develop farming,
- Help acquiring financial assistance,
- Help acquiring transport means,
- Generate higher income and profit, and
- More opportunities for learning.

2. Shops

a. Most of the retailers operating in the Study Area suffer form the shortage of commodities. Those shops who answered that they lack commodities for sale accounted for 95% of all the shops interviewed. The proportion was higher in the western part at 97% than in the eastern part at 90% (Table S-1). Kinds of goods difficult to obtain are widely varied including food, drinks, transport equipment, farm implements, electric appliances, clothes and shoes, etc. (Table S-2).

b. That goods are unavailability locally is cited as the biggest reason for difficulty in acquiring some goods. This is followed by unavailability of goods in Mozambique, lack of transport means and lack of fund (Table S-3).

c. Retailers with shrinking business accounted for 31% in the Study Area. Other shops are either growing (27%) or stable (42%). The majority of shops in Tete city are stable, while two-thirds (67%) of shops in Moatize are growing (Table S-4).

d. Retailers have different reasons for increasing and shrinking business. The major factors behind growing business include: increasing commodities and customers, no alternative shop for customers and occasional boom following sales of farm produce. Those for shrinking business are more varied such as: no commodities, lack of fund and finance, no transport means, bad road condition, severe competition with informal sector, high custom and income tax and no customers (Table S-5).

e. The three major constraints cited by retailers are lack of loan facilities (91%), short of commodities (80%) and high tax (76%). This tendency is common in the eastern and western areas (Table S-6).

f. The most promising type of business for shops is to increase delivery of goods from other part of Mozambique with 84% of shops interviewed answering so. An increase in import from the neighboring countries is described by only 16% of shops as promising. There was no shop answering increase of export as promising (Table S-7).

g. Areas and countries promising for business expansion include Beira (41 shops), Maputo (23), Quilimae (16) and Chimoio (15) for areas in Mozambique and Malawi (49 shops), Zimbabwe (42), Zambia (18) and South Africa (7) (Table S-8). This indicates the need for strengthening the Tete-Beira corridor through Chimoio and Lilongwe-Tete-Harare Corridor. The latter would include improvement in institutional environment such as import/export regulations and related tax system.

h. Concerning the expected support measures by the government, top two requests are concerned with financial aspect: reduction of tax rate (84%) and provision of loan with favorable conditions (84%). These are followed by improvements in infrastructure: road (78%), electricity (77%) and water supply (67%)(Table S-9).

3. Distributors

Tables W-1 and W-2 present a summary of the information about the distributors interviewed (trucking companies, wholesalers and warehouses).

a. Business of nearly two-thirds of the trucking companies interviewed is shrinking (Table W-3). The reasons include the following:
   - Old vehicles and frequent breakdowns,
   - Lack of spare parts,
   - High prices of fuel, tires, oil and spare parts,
   - Limited number of vehicles compared with incoming orders,
   - Too many regulations,
   - Lack of financial assistance, and
   - Lack of fund.

   The factors for growing business, on the contrary include many clients and high demand for transport (Table W-4).

b. Business performance of wholesalers and warehouses is less gloomy. The proportions of "growing business", "shrinking business" and "stable business" were 30%, 40% and 30% (Table W-5). A factor given for expanding business was an increase in the amount of goods. The reasons for shrinking business included high competition with informal sector and lack of finance (Table W-6).

c. The major constraints felt by distributors are the following (Table W-7):
   - High tax (58%),
   - Lack of spare parts (55%),
   - Too many regulations (55%),
   - Lack of loan facilities (48%), and
   - Severe competition (42%).

d. Most distributors (77%), like retailers, mention an increase in delivery of goods from other part of Mozambique as the promising type of business (Table W-8). There are some distributors, unlike retailers, mentioning an increase in export to other regions of Mozambique and neighboring countries as promising.

e. There are three kinds of major support measures expected to the government: improvement in road condition (77%), reduction in tax rate (74%) and provision of loan with favorable conditions (68%) (Table W-9).

Tables F-1 through F-4 show the number of farmers "ready to make contribution" to farmers' association by type of contribution.

Table F-1. Contribution by Part of Income

Max.:	20.00 %
Min.:	0.10 %
Ave.:	5.92 %

% of income		(%)
0-1.00%	16	(30.2)
1.01-2.00%	5	(9.4)
4.01-5.00%	8	(15.1)
9.01-10.00%	22	(41.5)
10.01-11.00%	1	(1.9)
19.01-20.00%	1	(1.9)
Total	53	(100.0)

Table F-2. Contribution by Cash

Max.: Mt.	10,000,000
Min.: Mt.	200
Ave.: Mt.	338,710

Cash (Mt.)		(%)
0-10,000	7	(12.1)
10,000-20,000	1	(1.7)
40,001-50,000	11	(19.0)
90,001-100,000	21	(36.2)
110,001-120,000	1	(1.7)
190,001-200,000	5	(8.6)
290,001-300,000	2	(3.4)
390,001-400,000	3	(5.2)
490,001-500,000	4	(6.9)
500,001-	3	(5.2)
Total	58	(100.0)

Table F-3. Contribution by Harvested Maize

Max.:	1,000	kg of maize
Min.:	5	kg of maize
Ave.:	122	kg of maize

Maize (kg)		(%)
0-20.0	11	(14.3)
20.1-40.0	2	(2.6)
40.01-60.0	20	(26.0)
60.0-80.0	1	(1.3)
80.1-100.0	29	(37.7)
140.1-160.0	2	(2.6)
180.1-200.0	3	(3.9)
280.1-300.0	5	(6.5)
300.1-	4	(5.2)
Total	77	(100.0)

Table F-4. Contribution by Labor

Max.:	90	days/year
Min.:	1	day/year
Ave.:	19	days/year

Labor (days/year)		(%)
0-10	47	(49.0)
11-20	3	(3.1)
21-30	42	(43.8)
31-40	1	(1.0)
51-60	2	(2.1)
81-90	1	(1.0)
Total	96	(100.0)

Table F-5. Currency Received for Selling Farm Produce

District	Metical	(%)	Kwacha (Malawi)	(%)	Other	(%)	Total
Angonia	7	(30.4)	16	(69.6)	0	(0.0)	23
Chifunde	9	(81.8)	2	(18.2)	0	(0.0)	11
Chiuta	7	(100.0)	0	(0.0)	0	(0.0)	7
Macanga	16	(47.1)	18	(52.9)	0	(0.0)	34
Moatize	6	(85.7)	0	(0.0)	1	(14.3)	7
Tsangano	5	(50.0)	5	(50.0)	0	(0.0)	10
Tete City	5	(100.0)	0	(0.0)	0	(0.0)	5
Total	55	(56.7)	41	(42.3)	1	(1.0)	97

Table F-6. Availability of Ready Market for Farm Produce

District	Available	(%)	Unavailable	(%)	Total
Angonia	20	(83.3)	4	(16.7)	24
Chifunde	1	(5.0)	19	(95.0)	20
Chiuta	0	(0.0)	21	(100.0)	21
Macanga	8	(19.0)	34	(81.0)	42
Moatize	7	(100.0)	0	(0.0)	7
Tsangano	8	(80.0)	2	(20.0)	10
Tete City	5	(83.3)	1	(16.7)	6
Total	49	(37.7)	81	(62.3)	130

Types and locations of market available		
Malawi	8	19.5%
Mozambique Leaf Tobacco	13	31.7%
Local	19	46.3%
Other	1	2.4%
Total	41	100.0%

Table F-7. Types of Transportation Wanted by Farmers

Type of transport		(%)	Remarks
a. Ox cart	53	(26.8)	
b. Truck	41	(20.7)	
c. Sedan	28	(14.1)	
d. Motorcycle	7	(3.5)	
e. Bicycle	7	(3.5)	
f. Other	62	(31.3)	
Tractor	*55*	*(27.8)*	mostly with trailers and ploughs
Total	198	(100.0)	

Note: Interviewee could choose more than one type of transport.

Table F-8. Purpose of New Transportation

Purpose		(%)
a. Transport farm produce to central storage sheds and market	126	(31.9)
b. Go to market to buy goods	109	(27.6)
c. Transportation of agriculture inputs to farming areas	113	(28.6)
d. To go somewhere for non-farming purpose	45	(11.4)
e. Other	2	(0.5)
Total	395	(100.0)

Note: Interviewee could choose more than one purpose.

Table F-9. Existing Transportation Means Used by Farmers for Transporting Farm Produce

Transportation means		(%)
a. Buyer's truck	38	(35.8)
b. Hiring private truck	29	(27.4)
c. My own ox cart	8	(7.5)
d. Community's ox cart	2	(1.9)
e. Other	29	(27.4)
Own vehicle (tractor, car, ox cart, bicylce)	*17*	*(16.0)*
Hire ox cart	*6*	*(5.7)*
Public/local transport	*2*	*(1.9)*
Other	*4*	*(3.8)*
Total	106	(100.0)
Depending on others (a+b+e-2+e-3)	75	70.8%

Table F-10. Price Negotiation of Farm Produce

Pattern in price settlement		(%)
Accepted the price offered by the trader	73	(70.9)
Negotiated and agreed	13	(12.6)
Traders accepted prices offered	16	(15.5)
Other	1	(1.0)
Total	103	(100.0)

Note: Some farmers gave more than one choice.

Table F-11. Satisfaction with Prices of Farm Produce Sold

		(%)
Satisfied with the price	26	(26.0)
Not satisfied with the price	74	(74.0)
Total	100	(100.0)

Table F-12. Satisfaction with Maize Prices by Currency

	MT	(%)	KW	(%)	Total
Satisfied	10	(30.3)	1	(3.4)	11
Not satisfied	23	(69.7)	28	(96.6)	51
Total	33	(100.0)	29	(100.0)	62

Note: MT - Mozambican metical, KW - Malawian kwacha

Table F-13. Availability of Good Roads from Farm to Market and Farmers' Readiness to Participate in Road Repair Works

Item		(%)
Good access from farm to market		
Available	88	(68.2)
Not available	41	(31.8)
Total	129	(100.0)
Readiness to participate in road repair works		
Ready	124	(95.4)
Not ready	6	(4.6)
Total	130	(100.0)

Table F-14. Crops Grown by Farmers

Crop	East*	(% of 45)	West†	(% of 85)	Total	(% of 130)
a. Maize	40	(88.9)	81	(95.3)	121	(93.1)
b. Tobacco	16	(35.6)	20	(23.5)	36	(27.7)
c. Beans	20	(44.4)	18	(21.2)	38	(29.2)
d. Groundnuts	10	(22.2)	31	(36.5)	41	(31.5)
e. Cotton	0	(0.0)	5	(5.9)	5	(3.8)
f. Irish potato	21	(46.7)	5	(5.9)	26	(20.0)
g. Sweet potato	13	(28.9)	9	(10.6)	22	(16.9)
h. Soya Beans	0	(0.0)	5	(5.9)	5	(3.8)
i. Cassava	10	(22.2)	2	(2.4)	12	(9.2)
j. Millet	2	(4.4)	0	(0.0)	2	(1.5)
k. Pigeon peas	8	(17.8)	0	(0.0)	8	(6.2)
l. Others	17	(37.8)	1	(1.2)	18	(13.8)

*East: Tsangano, Angonia, Moatize, part of Tete city
†West: Chifunde, Chiuta, Macanga, part of Tete city

Table F-15. Number of Crops Grown by Farmers

No. of crops	East*	(% of 45)	West†	(% of 85)	Total	(% of 130)
1	6	(13.3)	30	(35.3)	36	(27.7)
2	6	(13.3)	34	(40.0)	40	(30.8)
3	13	(28.9)	11	(12.9)	24	(18.5)
4	7	(15.6)	6	(7.1)	13	(10.0)
5	8	(17.8)	2	(2.4)	10	(7.7)
6	3	(6.7)	2	(2.4)	5	(3.8)
7	2	(4.4)	0	(0.0)	2	(1.5)
Total	45	(100.0)	85	(100.0)	130	(100.0)

*East: Tsangano, Angonia, Moatize, part of Tete city
†West: Chifunde, Chiuta, Macanga, part of Tete city

Table F-16. Farm Size Distribution

Farm Area (ha)	East*	(%)	West†	(%)	Total	(%)
0-1.00	1	(3.2)	1	(1.3)	2	(1.9)
1.01-2.00	5	(16.1)	7	(9.2)	12	(11.2)
2.01-3.00	6	(19.4)	13	(17.1)	19	(17.8)
3.01-4.00	1	(3.2)	11	(14.5)	12	(11.2)
4.01-5.00	3	(9.7)	15	(19.7)	18	(16.8)
5.01-6.00	5	(16.1)	8	(10.5)	13	(12.1)
6.01-7.00	1	(3.2)	10	(13.2)	11	(10.3)
7.01-8.00	4	(12.9)	6	(7.9)	10	(9.3)
8.01-9.00	2	(6.5)	3	(3.9)	5	(4.7)
9.00-10.00	3	(9.7)	2	(2.6)	5	(4.7)
Total	31	(100.0)	76	(100.0)	107	(100.0)

*East: Tsangano, Angonia, Moatize, part of Tete city
†West: Chifunde, Chiuta, Macanga, part of Tete city

Table F-17. Financing Situation of Farmers

	East	(%)	West	(%)	Total	(%)
Financed	11	(24.4)	11	(12.9)	22	(16.9)
Not financed	34	(75.6)	74	(87.1)	108	(83.1)
Total	45	(100.0)	85	(100.0)	130	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city
Financial sources: Dimon Tobacco Company, Mozambique Leaf Tobacco, brothers, friends

Table F-18. Availability of Fertilizer

	East	(%)	West	(%)	Total	(%)
Available	20	(44.4)	15	(18.8)	35	(28.0)
Not available	25	(55.6)	65	(81.3)	90	(72.0)
Total	45	(100.0)	80	(100.0)	125	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city
Suplliers: Agrivet, MLT, DANIDA, ambulant sellers

Table F-19. Participation of Farmers in Existing Agriculture Cooperatives

	East	(%)	West	(%)	Total	(%)
Member	16	(36.4)	15	(17.9)	31	(24.2)
Non-member	28	(63.6)	69	(82.1)	97	(75.8)
Total	44	(100.0)	84	(100.0)	128	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table F-20. Farmers' Judgement on Farmers Association

	East	(%)	West	(%)	Total	(%)
Necessary/Useful	41	(91.1)	81	(97.6)	122	(95.3)
Not necessary/Not useful	4	(8.9)	2	(2.4)	6	(4.7)
Total	45	(100.0)	83	(100.0)	128	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table F-21. Reasons Why Farmers Think Farmers Association Is Useful or Not

Reasons why farmers associations are useful	
Help developing market	21
Help acquiring inputs	19
Enhance mutual support	19
Help develop farming	11
Help acquiring financial assistance	10
Help acquiring transport means	5
Generate higher profit/income	4
More opportunity for learning (Farming technology)	4
Other	17
Everything becomes easy.	-
Develop the country	-
Help solving problems	-
Help develop non-farming activities	-
Bring development	-
Bring support to everyone	-
Good for poorest farmers	-
Incentive for working harder	-
Needs will be met.	-
Help increasing production.	-
Help developing good ideas.	-
Reasons why farmers associations are NOT useful	
Possibility of exploitation by others	2
No experience	1
No good	1
No help	1
People are complicated.	1

Table S-1. Availability of Commodities at Shops

	East	(%)	West	(%)	Total	(%)
Some commodities they would like to sell are NOT available.	46	(90.2)	74	(97.4)	120	(94.5)
All the commodities are available.	5	(9.8)	2	(2.6)	7	(5.5)
Total	51	(100.0)	76	(100.0)	127	(100.0)

Notes:
(1) East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city
(2) Five shops that responded "all the commodities are available" are located in Tete city (4 shops) and Moatize headquarters (1 shop).

Table S-2. Commodities Unavailable at Shops (1/3)

(Tete City)

sugar	bicycle spare parts	fertilizers
confections	frames	spoons
lactogen milk	tires	exercise books
wheat flour	bicycles	soap
rice	ploughs	jewels
salt	iron bars, iron plates, angles, & wedges	oil
wine	batteries	seeds of red onions, cabbage, potatoes
spirits	electrical materials	
beers	iron-mongeries	
cold drink	construction materials	
fresh milk	electrical material	
cigarettes	cement	
Zimbabwean beers	electric appliances	
groceries	textiles	
cheese	shoes	
butter	blankets	
yogurt	umbrellas	
nourishing	different modem clothes	
drink	beauty items	
cooking oil	traditional African clothes	
whiskey	school bags	

(Angonia)

confections	shoes
rice	clothes
salt	blankets
cooking oil	paraffin
sardines	iron sheets, mattresses
spaghetti	Powers No. 1
sugar	soap

(Tsangano)

wheat flour	bicycles	batteries
cooking oil	bicycle spare parts	paraffin
rice	ploughs	soap
spaghetti	manual hoes	seeds
salt	blankets	
sardines	textiles	
cold drinks	shoes	
fish/dry fish	hangers	
	clothes	

Table S-2. Commodities Unavailable at Shops (2/3)

(Moatize)

beers	bicycle spare parts	fertilizer
cigarettes	construction materials	pesticides
sugar	radios	seeds
cooking oil	refrigerators	fishing nets
spaghetti	electrical materials	batteries
condensed milk	sewing machine spare parts	razors
vinegar	bicycle	soap
rice	cement	omo powder soap
cold drinks	iron sheets	detergents
Coca-Cola	iron sheets	paraffin
Manica beers	clothes	mosquito nets
milk	textiles	cassettes
fresh fish	suits	shoes
wheat flour	Terelene textiles for men	
salt		
cold drinks		
powder milk		
wheat flour		
margarine		

(Chifunde)

beans	hoes	fertilizers
rice	batteries	seeds
cooking oil	bicycle spare parts	soap
edible goods	radios	fuel
sugar	solardisc	tissues
beer	rings	pots
salt	tissue spares	plates
beans	bicycle	
dry fish	spares	
butter	pangas	
kapenta fish	clothes	
	blankets	
	dresses	
	shoes	
	textiles	
	trousers	

Table S-2. Commodities Unavailable at Shops (3/3)

(Macanga)

milk	hoes	mattress
salt	axe	soap
rice	bicycles	pangas
cooking oil	materials	tissues
grocery	bicycle spare parts	phosphorus
wheat	cement	oil
sugar	paints	refrigerant
beer	radio	paraffin
cooking oil	batteries	
tobacco	blankets	
	clothes	
	tissue	
	dress	
	shoes	
	slippers	
	clothes	

(Chiuta)

beers	bicycle spare parts	seeds
sugar	radio cassettes	tissues
salt	hoes	cups
milk	radio	soaps
juice	batteries	pangas
cigarettes	materials	plates
cooking oil	clothes	pots
rice	blankets	torches
fish		accommodations merchandise

Table S-3. Problems of Shops in Procuring Goods

Problem	East	(%)	West	(%)	Total	(%)
a. Delay in delivery	10	(13.2)	1	(0.8)	11	(5.6)
b. Cancellationof delivery	6	(7.9)	2	(1.7)	8	(4.1)
c. Commodities unavailable locally	40	(52.6)	66	(54.5)	106	(53.8)
d. Commodities unavailable in Mozambique	14	(18.4)	13	(10.7)	27	(13.7)
e. Other*	6	(7.9)	39	(32.2)	45	(22.8)
High tax	*0*	-	*3*	-	*3*	-
Lack of transport	*0*	-	*21*	-	*21*	-
Lack of fund	*1*	-	*13*	-	*14*	-
Poor road condition	*0*	-	*3*	-	*3*	-
Lack of warehouse	*0*	-	*3*	-	*3*	-
Total	76	(100.0)	121	(100.0)	197	(100.0)

Notes:
(1) East: Tsangano, Angonia, Moatize, part of Tete City
West: Chifunde, Chiuta, Macanga, part of Tete City
(2) *The total number of reasons for "other" for West is larger than 39, because some answers gave more than one explanations for other problems.

Table S-4. Business Performance of Shops

Area	Growing	(%)	Shrinking	(%)	Stable	(%)	Total	(%)
Tete City	4	(11.8)	11	(32.4)	19	(55.9)	34	(100.0)
Moatize Hedquarters	6	(66.7)	2	(22.2)	1	(11.1)	9	(100.0)
Other Districts							0	
Tsangano	2	(28.6)	2	(28.6)	3	(42.9)	7	(100.0)
Angonia	3	(37.5)	5	(62.5)	0	(0.0)	8	(100.0)
Moatize (outside HQ)	1	(14.3)	1	(14.3)	5	(71.4)	7	(100.0)
Chifunde	7	(33.3)	7	(33.3)	7	(33.3)	21	(100.0)
Macanga	5	(20.8)	8	(33.3)	11	(45.8)	24	(100.0)
Chiuta	6	(40.0)	3	(20.0)	6	(40.0)	15	(100.0)
Sub-total	24	(29.3)	26	(31.7)	32	(39.0)	82	(100.0)
Total	34	(27.2)	39	(31.2)	52	(41.6)	125	(100.0)

Table S-5. Background Explanations of Shops for Their Business Performance (1/3)

Area	Explanation
(Shops with Growing Business)	
Tete	Goods are increasing
Tete	More sales & more goods
Angonia-Domue	Goods are increasing
Angonia-Domue	I am getting profit
Angonia-Calomue	The goods are increasing, & he gets them from Malawi
Tsangano-Mtengo-wa-Mbalame	Goods are increasing in his canteen
Tsangano-Mtengo-wa-Mbalame	Started with small amount of money now has got something in the Bank
Moatize-Ncondedzi	Merchandise is increasing
Moatize-Ncondedzi	Merchandise is increasing in the canteen
Moatize HQ	With the income from the canteen invested a part in his farm
Moatize HQ	we have much clients & we get profit
Moatize HQ	Merchandise is increasing
Moatize HQ	Because I afford to buy other people's commodities
Moatize HQ	The lack of clients
Moatize HQ	volume of business is increasing
Chifunde	Little by little I'm developing
Chifunde	Because I opened another shop in a short time
Chifunde	Lack of money
Chifunde	I have the best goods in my shop
Chifunde	My merchandise does not take time to sell
Chifunde	These days I have more customers than before
Chifunde	My merchandise don't take more time what means success
Macanga	I have a lot of merchandise at the moment
Macanga	I started my business with very little merchandise but now I'm more or less developed.
Macanga	At least get money for my survival
Macanga	I increased my shop
Macanga	Despite of having many problems I try to get success in my life
Chiuta	Have a lot of new commodities
Chiuta	I have access to everything I have demanded
Chiuta	I have more customers
Chiuta	Much more customers
Chiuta	People have no choice but buy whatever I have
Chiuta	When farmers sell their produce - business booms

Table S-5. Background Explanations of Shops for Their Business Performance (2/3)

Area	Explanation
(Shops with Shrinking Business)	
Angonia-Ulongue	No commodities
Angonia-Domue	He is selling nothing
Angonia-Domue	She has not enough money
Angonia-Domue	Lack of financial conditions
Angonia-Mulangueni	The shop is closed due to lack of funds
Tsangano-Mtengo-wa-Mbalame	Lack of money
Tsangano-Mtengo-wa-Mbalame	The truck is not functioning
Moatize-Zobue	No difference between wholesalers & retail sellers in terms of prices
Moatize HQ	There is no profit
Moatize HQ	competition with the informal market
Tete City	Lack of funds
Tete City	High competition with the informal market
Tete City	Business is dying, because we are using the same prices as retailers
Tete City	1st need products the profit is too low
Tete City	The high competition with the informal market
Tete City	I have no capital
Tete	Lack of financial support
Tete	High custom tax & high income tax
Chifunde	No buyers but high income tax
Chifunde	No more customers locally
Chifunde	Lack of commodities/Lack of capital
Chifunde	No markets & transport
Chifunde	No founds facilities
Macanga	I don't have markets, to sell my merchandise
Macanga	Lack of money
Macanga	Business is seasonal due to lack of required conditions
Macanga	Business only goes well when farmers sell their produce.
Macanga	Lack of finance
Macanga	Because of having to use a bicycle due to expensive transport cost
Chifunde	It is a problem to acquire the goods due to lack of transport
Macanga	No money
Chifunde	No goods, bad roads, no transport
Chiuta	No warehouse locally
Chiuta	Customers movement is not significant
Chiuta	Lack of finance
	Street venders
	Informal business
	Lack of finance
	Lack of finance

Table S-5. Background Explanations of Shops for Their Business Performance (3/3)

Area	Explanation
(Shops with Stable Business)	
Tsangano HQ	The lack of financial support
Tsangano HQ	Lack of transport & funds
Tsangano-Mtengo-wa-Mbalame	I have small amount of money
Moatize-Ncondedzi	Lack of capital
Moatize-Ncondedzi	The lack of funds & price of maize reduced
Moatize-Kambulatsitsi	The capital is not enough
Moatize-Kambulatsitsi	Because it is the beginning of business
Moatize-Kambulatsitsi	Clients do not have money they just make credits at my canteen
Moatize HQ	The informal market is giving us trouble
Tete City	Financial problems
Tete City	Lack of capital
Tete City	Lack of capital
Tete City	High taxes
Tete City	High competition with the informal market
Tete City	Lack of money
Tete City	Lack of clients, because of the informal market
Tete City	Taxes, energy, & telephone costs are high
Tete City	I try to do anything possible in order to become successful
Tete City	I have no buyers
Tete City	I don't have enough money
Tete City	Because during the first 6 months our business went well but the next 6 months it went down
Tete City	Severe competition with street venders
Tete City	I have just opened my shop this year
Tete City	No money to develop business
Tete City	No fund facilities
Tete City	I don't have money
Tete	Informal market here around the city
Chifunde	The problem is of Zambian Kwacha
Chifunde	Because the customer's influence is also stable
Chifunde	Because the customer's influence is also stable
Chifunde	I have only little money
Chifunde	No funds
Chifunde	At least I get money for my survival
Chifunde	We do our best in order to survive
Macanga	My business is running well
Macanga	Because the business runs well during the harvesting time.
Macanga	I have few money
Macanga	The business goes well during the harvesting time
Macanga	No fund assistance
Macanga	I have to struggle just to ensure what I have at the moment
Macanga	Lack of fund
Macanga	Because I have little money
Macanga	I bought a house & motorcycle
Macanga	I sell most of my products on credit
Macanga	I don't have enough money
Chiuta	I have a lot of merchandise
Chiuta	Customer purchasing power is too low
Chiuta	I have expanded my merchandise
Chiuta	I have very few customers because most of them are peasant farmers dependent on agriculture
Chiuta	Customers purchasing power is not emotionable
Chiuta	I'm still reconstructing

Table S-6. Constraints for Business Development Perceived by Shops

Constraint	East	(%)	West	(%)	Total	(%)
a. Lack of loan facilities	47	(92.2)	68	(89.5)	115	(90.6)
b. High tax	41	(80.4)	55	(72.4)	96	(75.6)
c. Short of commodities	38	(74.5)	63	(82.9)	101	(79.5)
d. Lack of spare parts	17	(33.3)	7	(9.2)	24	(18.9)
e. No means to reach rural area	21	(41.2)	14	(18.4)	35	(27.6)
f. Too many regulations by government	20	(39.2)	19	(25.0)	39	(30.7)
g. Severe competition	20	(39.2)	18	(23.7)	38	(29.9)
h. Other	1	(2.0)	6	(7.9)	7	(5.5)

Notes:
(1) East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city
(2) Percentages are those against the total numbers of interviewed shops (East: 51, West: 76).

Table S-7. Promising Types of Business Perceived by Shops

Type of Business	East	(%)	West	(%)	Total	(%)
a. Increase delivery of goods from other part of Mozambique	42	(84.0)	n.a	-	42	(84.0)
b. Increase import and delivery of goods from neighboring countries	8	(16.0)	n.a	-	8	(16.0)
c. Increase export from Angonia region and Tete province	0	(0.0)	n.a	-	0	(0.0)
Total	50	(100.0)	-	-	50	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table S-8. Promising Areas for Business Expansion Perceived by Shops

Area	No. of shops responded
Study Area	
Tete	12
Moatize	6
Angonia	17
Tsangano	3
Macanga	7
Chifunde	0
Chiuta	3
Zobue	4
Outside Study Area	
Beira	41
Sofala	2
Quelimane	16
Maputo	23
Chimoio	15
Inhambane	5
Niassa	1
Manica	3
Zambezia	2
Nampula	8
Mutarara	5
Foreign Countries	
Zimbabwe	42
Malawi	49
Zambia	18
South Africa	7

Table S-9. Government Support Measures Expected by Shops

Support measure	East	(%)	West	(%)	Total	(%)
a. Development of infrastrucuture						
Electricity	33	(64.7)	65	(85.5)	98	(77.2)
Telecommunication	14	(27.5)	58	(76.3)	72	(56.7)
Water sypply	18	(35.3)	67	(88.2)	85	(66.9)
Sanitation	11	(21.6)	58	(76.3)	69	(54.3)
Drainage	3	(5.9)	41	(53.9)	44	(34.6)
Road	37	(72.5)	62	(81.6)	99	(78.0)
Modern market structure	9	(17.6)	67	(88.2)	76	(59.8)
Depot (warehouse, truck terminal)	12	(23.5)	61	(80.3)	73	(57.5)
Other	0	(0.0)	4	(5.3)	4	(3.1)
b. Provision of loan with favorable condition	43	(84.3)	63	(82.9)	106	(83.5)
c. Simplification of existing regulations	28	(54.9)	49	(64.5)	77	(60.6)
d. Reduction of tax rate	42	(82.4)	65	(85.5)	107	(84.3)
e. Other	1	(2.0)	20	(26.3)	21	(16.5)
Total number of shops	51	-	76	-	127	-

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table W-1. General Information about Trucking Companies Surveyed

Survey No.	District	Status	No. of employees	No. of trucks	Goods transported	Places of business	Nationality‡ of client	Currency received
East*								
W1	Angonia	Headquarters	2	2	Several goods for shops	Tete/Ulongue	MZ	Metical
W2	Angonia	Headquarters	2	2	Passengers	Ulongue/Calomue/Ulongue	MZ/MW	Metical/Kwacha
W3	Angonia	Headquarters	2	3	Passengers	Ulongue/Calomue/Ulongue	MZ/MW	Metical/Kwacha
W4	Moatize	Headquarters	6	2	Passengers	Tete/Zobue	MZ	Metical
W5	Moatize	Headquarters	5	5	Passengers	Tete/Angonia/Tete	MZ	Metical
W7	Tsangano	Headquarters	2	1	Passengers	Ulongue/Biribiri	MZ/MW	Metical/Kwacha
W9	Tete	Headquarters	4	2	Passengers	Tete/Zobue	MZ	Metical
W10	Tete	Headquarters	55	8	Raw materials	Beira,Maputo, Nampula	MZ	Metical
W11	Tete	Headquarters	2	2	Passengers	Tete/Moatize/Tete	MZ	Metical
W12	Tete	Headquarters	3	3	wheat, soap, beers, cooking oil, clothes	Tete/Angonia/Tete	MZ	Metical
W13	Tete	Headquarters	6	2	Passengers	Tete/Chitima/Tete	MZ	Metical
West†								
1	Tete	Headquarters	4	2	Firewood, tree trunks, poles stones	Within Tete city	MZ	
2	Tete	Headquarters	8	3	All types of merchandise - groceries hardware, fish.	All parts of Mozambique	MZ	
3	Macanga	Headquarters	2	1	Wheat, soap, salt, biscuits, beer, soft drinks	Tete and Malawi	MZ/MW	
7	Tete	Headquarters	43	2	Salt, sugar, maize, rice, beans, timber	Tete to the districts	MZ	
9	Tete	Headquarters	70	17	Groceries, building materials cements, refrigerator, electrical goods		MZ/SA/Portugal	
12	Tete	Headquarters	6	3	Second hand clothes	Tete, Beira	MZ	
14	Tete	Headquarters	2	1	Seeds	Maputo	MZ	Metical
15	Tete	Headquarters	5	6	Maize, beans, potatoes,	Mozambique, Malawi, Zimbabwe	MZ	Metical
17	Tete	Headquarters	4	2	Maize, beans, potatoes, passenger transport	Various parts of MBQ		

*East: Tsangano, Angonia, Moatize, part of Tete city

†West: Chifunde, Chiuta, Macanga, part of Tete city

‡MZ-Mozambique, MW-Malawi, ZW-Zimbabwe, ZM-Zambia, SA-South Africa

Table W-2. General Information about Wholesale Traders and Warehouse Operators Surveyed

Survey No.	District	Type of business	Status	No. of employees	No. of trucks	Commodities traded	Place of purchasing goods	Currency paid	Nationality* of trader/client	Places of selling goods/delivery	Currency received	Nationality* of recipient trader
W6	Moatize	Wholesale trader & warehouse owner	Branch	6		Beers, soap, wheat, cold drinks, rice	Maputo, Beira, local	Metical	MZ	Moatize	Metical	MZ
W8	Tete	Warehouse owner	Branch	23	8	1st need products, beers cold drinks, maize, construction materials	Maputo, Chimoio, Beira	Metical	MZ	Tete, Angonia, Moatize, Zobue	Metical	MZ
4	Tete	Wholesale trader	Branch	4		Batteries, detergents, toiletries, paper	Maputo, Chimoio	Metical	MZ	Tete, Songo	Metical	MZ
5	Tete	Wholesale trader	Headquarters	15		Hardware and general goods constructions material	Maputo	Metical	MZ/India/SA/ Portugal	Tete	Metical	MZ
6	Tete	Wholesale trader & warehouse owner	Branch (Beira)	3		General goods and merchandise	Maputo, China, Indonesia	US$	MZ/China/ Indonesia	Tete	Metical	MZ
8	Tete	Super market	Headquarters	8	0 (trucks rented)	General merchandise	Mozambique, Malawi, Zimbabwe	Metical/ US$	MZ/various foreigners	Tete city	Metical	MZ
9	Tete	Wholesale trader, warehouse owner & trucking company	Headquarters	70	17	Groceries, building materials cements, refrigerator, electrical goods		Metical/ US$	MZ/SA/Portugal	n.a.	n.a.	n.a.
10	Tete	Wholesale trader	Headquarters	8	1	Rice ,wheat, sugar	MZ.	Metical	MZ/SA/Portugal	Tete	Metical	MZ
11	Tete	Wholesale trader	Branch	6	1	Calamity / Kamjika	Canada, MZ	US$	Canada	Tete, Zimbabwe, Malawi	Metical	MZ/MW
13	Tete	Wholesale trader	Headquarters	70	2	General merchant, food, groceries, soap etc	Maputo, Dubai, Taiwan, India	Metical/ US$	MZ	Tete	Metical	MZ
16	Tete	Wholesale trader	Headquarters	10	2	General merchandise	Maputo, Beira, Quelimane	Metical	MZ	Tete	Metical	MZ/India/ Portugal

*MZ-Mozambique, MW-Malawi, ZW-Zimbabwe, ZM-Zambia, SA-South Africa

Table W-3. Business Performance of Trucking Companies

Performance	East	(%)	West	(%)	Total	(%)
Growing	1	(9.1)	2	(25.0)	3	(15.8)
Shrinking	7	(63.6)	5	(62.5)	12	(63.2)
Stable	3	(27.3)	1	(12.5)	4	(21.1)
Total	11	(100.0)	8	(100.0)	19	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table W-4. Explanations for Business Performance of Trucking Companies

Companies with growing business

Many clients and I bought more one truck.
There is high demand for transport.
I have lots of work.

Companies with shrinking business

Constant break downs
3 vehicles not working
Finacial problems
Too many regulations
Old vehicles
Lack of spare parts
More expenses than profits
High prices of fuel, tyres, oils and spares
Lack of financial assistance
I have a lot of work but cannot manage because I only have 1 truck
Lack of capital, spares,
Lack of capital

Companies with stable business

So many transporters
Old vehicles
High competion with other transporters
My trucks are old and need finance to maintain them or buy new trucks

Table W-5. Business Performance of Wholesale Traders and Warehouse Operators

Performance	East	(%)	West	(%)	Total	(%)
Growing	1	(50.0)	2	(25.0)	3	(30.0)
Shrinking	1	(50.0)	3	(37.5)	4	(40.0)
Stable	0	(0.0)	3	(37.5)	3	(30.0)
Total	2	(100.0)	8	(100.0)	10	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table W-6. Explanations for Business Performance Provided by Wholesale Traders and Warehouse Operators

Companies with growing business
- Goods are increasing
- I do a lot of business - shop and warehouse
- Business is growing while profit decreases

Companies with shrinking business
- High competion with the informal market
- Too much competition
- Lack of finance
- High quality, high demand

Companies with stable business
- Too many wholesales in Tete and none in the districts
- Lack of finance to develop further
- Inflation

Table W-7. Constraints Perceived by Distributors

Constraint	East	(%)	West	(%)	Total	(%)
a. Lack of loan facilities	7	(53.8)	8	(44.4)	15	(48.4)
b. High tax	13	(100.0)	5	(27.8)	18	(58.1)
c. Short supply of commodities	4	(30.8)	4	(22.2)	8	(25.8)
d. Lack of spare parts	10	(76.9)	7	(38.9)	17	(54.8)
e. No means to reach rural area	4	(30.8)	4	(22.2)	8	(25.8)
f. Too many regulations by government	9	(69.2)	8	(44.4)	17	(54.8)
g. Severe competition	7	(53.8)	6	(33.3)	13	(41.9)
h. Other	0	(0.0)	4	(22.2)	4	(12.9)
Total Number of Companies Surveyed	13	-	18	-	31	-

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table W-8. Promising Types of Business Perceived by Distributors

Type of business	East	(%)	West	(%)	Total	(%)
a. Increase delivery of goods from other part of Mozambique	10	(76.9)	n.a	-	10	(76.9)
b. Increase import/delivery of goods from neighboring countries	1	(7.7)	n.a	-	1	(7.7)
c. Increase export from Angonia Region and Tete Province to other regions in Mozambique and neighboring countries.	2	(15.4)	n.a	-	2	(15.4)
Total	13	(100.0)	-	-	13	(100.0)

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

Table W-9. Government Support Measures Expected by Distributors

Support measure	East	(%)	West	(%)	Total	(%)
a. Development of infrastrucuture						
Electricity	5	(38.5)	5	(27.8)	10	(32.3)
Telecommunication	4	(30.8)	4	(22.2)	8	(25.8)
Water sypply	6	(46.2)	6	(33.3)	12	(38.7)
Sanitation	3	(23.1)	2	(11.1)	5	(16.1)
Drainage	1	(7.7)	1	(5.6)	2	(6.5)
Road	12	(92.3)	12	(66.7)	24	(77.4)
Modern market structure	2	(15.4)	2	(11.1)	4	(12.9)
Depot (warehouse, truck terminal)	2	(15.4)	2	(11.1)	4	(12.9)
Other	0	(0.0)	0	(0.0)	0	(0.0)
b. Provision of loan with favorable condition	10	(76.9)	11	(61.1)	21	(67.7)
c. Simplification of existing regulations	7	(53.8)	7	(38.9)	14	(45.2)
d. Reduction of tax rate	11	(84.6)	12	(66.7)	23	(74.2)
e. Other	0	(0.0)	0	(0.0)	0	(0.0)
Total number of companies	13	-	18	-	31	-

Note:
East: Tsangano, Angonia, Moatize, part of Tete city
West: Chifunde, Chiuta, Macanga, part of Tete city

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