

**REVOLUTIONARY GOVERNMENT
OF ZANZIBAR – TANZANIA**

AGRICULTURAL SECTOR POLICY

Prepared by

**The Ministry of Agriculture, Natural Resources, Environment and
Cooperatives**

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ABBREVIATIONS

| | |
|--------|--|
| A.I | Artificial Insemination |
| CBO | Community Based Organisation |
| ECF | East Coast Fever |
| GDP | Gross Domestic Product |
| ICPM | Integrated Crop and Pest Management |
| KARTS | Kizimbani Agricultural Research and Training Station |
| MANREC | Ministry of Agriculture, Natural Resources, Environment and Cooperatives |
| MSY | Maximum Sustainable Yield |
| MWCEL | Ministry of Water, Construction, Energy and Lands |
| NGOs | Non-Governmental Organisations |
| TRWs | Tractor Repair Workshops |
| US\$ | United States Dollars |
| ZARC | Zanzibar Agricultural Research Council |
| ZSTC | Zanzibar State Trading Corporation |

DEFINITIONS

The following definitions are designed to increase clarity in the meaning of the terms used in this policy document.

1. “Agriculture” is defined as that sector of human activity involving all aspects of crops, livestock and fisheries.
2. “Agricultural Services” or “Agricultural Support Services” are activities that support agricultural production. They include research, extension, training, input delivery system, transport, plant protection, irrigation, mechanisation, animal health services, credit, storage and processing.
3. “Agricultural Technology” implies knowledge, equipment, inputs and practices embodied in modern agricultural production practices.
4. “Cross-sector” is used to imply the issues that cut across sectors in the economy or across sub-sectors within the agricultural sector.
5. “Extension Service” is defined as the transfer of agricultural technology.
6. “Farmers Association” is used to imply an association of persons who have voluntarily joined together with an objective of promoting the economic and social welfare of its members. Principally Farmers Associations’ activities, such as production, marketing and processing, are operated democratically.
7. “Government” refers to the Revolutionary Government of Zanzibar.
8. “Industry” is used to depict components of the sub-sector such as fish industry or beef industry.
9. “Long-term” is used here to refer to a period of time covering more than five years.
10. “Medium-term” is used here to refer to a period of time covering three to five years.
11. “Policy” is defined as state intervention and includes a set of instruments aimed at reaching specific objectives.
12. “Policy Instruments” are unit actions taken by Government to implement a policy.
13. “Primary Processing” for export include activities such as handling, selection and packaging of fresh produce and on-farm drying and preparation.
14. “Secondary Processing” is used to imply the conversion of an agricultural product into another product. Good examples are coconut and clove oils.

15. “Sector” is used to describe “Agriculture”. Each of these terms can stand alone to adequately describe the activity but in most cases they will be used in combination form of “Agricultural Sector” to distinguish Agriculture from other sectors of the economy.
16. “Short-term” is used here to refer to a period of time covering two financial years.
17. “Sub-sector” is used here to describe the major components of the agricultural sector, namely, the “Crop sub-sector”, “Livestock sub-sector” and “Fisheries sub-sector”.

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1.0 SUMMARY

1.1 Summary Statement

Since the late 1980s, Zanzibar has adopted wide ranging structural reforms, to move away from an economy largely planned and controlled by the Government towards a market-based economy. With the exception of agriculture, most of the production and marketing functions are now left to the private sector. The Government is concentrating on public sector support functions. The main thrust of the reforms was to deregulate price and subsidy policies, to increase real interest rates, to improve the quality of public investment and to liberalise foreign trade. The main objective of the reforms was to increase the production of goods and services.

Moreover, the economic environment under which the agricultural sector operates has changed. Macroeconomic reforms have been undertaken since the mid 1980s. Structural reforms have also taken place in other sectors of the economy, particularly in trade, construction and tourism. The major thrust of the reforms is to promote private sector involvement in production, marketing and processing. Since the macro reforms and those of other sectors among other reasons, influence agricultural performance, it has been found necessary to formulate a new agricultural policy.

The process of formulating the new agricultural policy has involved detailed discussions and consultations with all the main stakeholders. These included the Government, farmers and fishers, civil society associations and the private sector. Their contribution in this exercise has been great.

1.2 The Mission of the Ministry of Agriculture, Natural Resources, Environment and Co-operatives (MANREC)

Under the new Agricultural Policy the role of the MANREC will be confined to public support functions, policy implementation and management and promotion of an enabling environment for private sector production, trade and investment. Farmers, fishers and entrepreneurs will carry out all commercial activities. Increased and sustainable growth of agricultural production will be based on structural changes, aiming at increasing productivity, developing new technology and producing new products.

1.3 The Overall Goal

The overall goal for Zanzibar Agriculture Sector Policy is to promote sustainable development of the agricultural sector for economic, social and environmental benefits for its people.

1.3.1 Specific Objectives

- To modernize and commercialize the agricultural sector so as to increase productivity and rural incomes while ensuring an ecologically sustainable environment.

- To attain household and national food security and improve nutritional status of the people particularly children and lactating mothers.
- To increase agricultural exports in order to increase foreign exchange earnings for the nation.
- To raise agricultural contribution to the national economy and hence improve living standards of the people and create employment opportunities.
- To improve the quantity and quality of agricultural products for which the country has comparative advantage.
- To promote gender equality in agricultural development and production in order to ensure that women have equitable access to and control over productive resources including land, water, credit and extension services.
- To promote integrated and sustainable use of natural resources.
- To enhance national capacity to manage and develop the agricultural sector in collaboration with other stakeholders.
- To promote primary processing and to provide agricultural raw materials for agro-processing and agro-based industries.

1.4 Policies to Achieve Objectives

Workable and appropriate policies are needed in order to meet the major sectoral objectives outlined above. The following are the major policies to achieve the sectoral objectives.

- Liberalise and rationalise production and processing of traditional and non-traditional export crops.
- Encourage private sector investment in agriculture through attractive incentives for production, processing and exportation of agricultural crops.
- Promote exports of non-traditional export crops.
- Encourage increased production of crops, livestock and fisheries by the private sector including smallholders and commercial farmers.
- Encourage rural agro-processing.
- Develop sustainable agricultural production.
- Improve the quality of production, grading and processing stages.
- Privatisise agricultural parastatals.
- Increase productivity in all agricultural sub-sectors.
- Embark on further reforms in agricultural marketing and pricing.
- Promote farmers' and fishers' associations.

- Adopt environmentally friendly agricultural technologies.

1.5 Policy Instruments

The policy instruments available to the MANREC determine to a certain extent the design of the development strategies to be deployed for reaching the objectives. In the new policy framework the proposed policy instruments of the MANREC are:

- Enhanced management of agricultural research, extension and training.
- Closer monitoring and evaluation of agricultural development.
- Identification of new products, technologies, and promotion of new production processes.
- Promotion of private sector participation in agricultural commercial activities.
- Regular reviews of the impact of agriculture policies.
- Quality control of agricultural inputs and products.
- Control of epidemic pests and diseases.
- Providing an adequate legal and regulatory framework.
- Promotion and monitoring of farmer's associations.
- Improved management of natural resources.
- Promotion of institutional structures in the agricultural sector.
- Promotion of small-scale irrigation.
- Policy management structures to articulate the sector's priorities, translating larger policy decisions into sector specific actions, and monitoring the impact of policy reforms on agriculture.

2.0 SUB-SECTOR ISSUES, POLICY STATEMENTS AND STRATEGIES

2.1 Cross-sectoral Issues

2.1.1 Vision 2020

Objective

To promote agricultural transformation from a predominantly rural-based subsistence to a modern economy.

Issue

The agricultural sector is by and large subsistence, using low technologies

Constraints

High dependency on rainfed crops and prevalence of agricultural and animal diseases are some of the major constraints to achieving higher agricultural productivity. Other constraints are high post-harvest losses, insufficient skilled manpower and inefficient marketing and credit systems.

Policy Statement

To transform agriculture from subsistence to a modern commercial sector.

Policy Strategies

- (i) Develop and promote the use of new and modern technologies to increase agricultural productivity.
- (ii) Expand and improve economic infrastructure in order to improve and open up markets.

2.1.2 Population Policy

Objective

To attain reasonable population growth rate and to improve the health and welfare of women and children.

Issue

Population growth, size, structure and distribution exert tremendous pressure on the natural resources and environment

Zanzibar's population is growing at an annual growth rate of 3 percent. As a result the population density, at about 350 per square kilometre (sq. km), is excessively high. Indeed, the negative growth of the agricultural sector of 4.5% cannot sustain the current population growth rate.

Constraints

Low adoption of family planning practices and lack of awareness and knowledge among the youth of fertility regulation and early marriages are some of the major constraints.

Policy Statements

- (i) To increase knowledge, enhance understanding and change behaviour related to population issues.
- (ii) To establish and strengthen mechanisms for coordinating the activities of agencies engaged in the area of population and development.
- (iii) To collaborate with other public and non-government institutions on providing family planning services as part of maternal and child health services.

Policy Strategies

- (i) Promote youth, male and female shared responsibilities and participation in their productive and reproductive life.
- (ii) Harmonize population needs with natural resources utilisation.
- (iii) Integrate population issues into development planning at all levels.
- (iv) Mobilize resources to support the implementation of population activities.
- (v) Promote diversified and integrated approaches to family planning advice and delivery systems.
- (vi) Increase access to family planning and reproductive health services.

2.1.3 Gender Issues

Objective

To promote gender equality in agricultural development in order to ensure that women have equitable access to and control over productive resources including land and water, as well as access to support services particularly credit and extension services.

Issue

Women use poor technologies in the process of agricultural production

Women provide 70 percent of the agricultural labour and produce about 70 percent of agricultural output in Zanzibar. However, they own very few of the means of production. Only 20% of women own land. Their conditions have remained generally poor.

Constraints

Women's efforts to increase productivity are hampered by illiteracy and lack of appropriate technology, lack of access to information, extension services and capital, as well as social and cultural factors that have compromised their rights to land.

Policy Statements

- (i) The Government will promote women's full and equal participation in the economy.

- (ii) To introduce and enforce gender sensitive policy programmes and projects in all matters related to agricultural development.
- (iii) To reorient extension and other support services to adequately address needs according to gender.
- (iv) To ensure both men and women have access to credit for agricultural development.

Policy Strategies

- (i) Develop programmes to sensitise the public on gender issues.
- (ii) Review and enact laws, which promote gender equality in the ownership of, and control over productive resources.
- (iii) Encourage Non-Governmental Organisations (NGOs) and Community Based Organisations (CBOs) to initiate programmes and projects that support women farmers.

2.1.4 Poverty Alleviation

Objective

To alleviate poverty mainly in the rural areas.

Issue

Most of the rural population lacks the command over productive resources essential for survival and development

Zanzibar is among the poorest countries in the world with Gross Domestic Product (GDP) per capita estimated at United States Dollars (US\$) 227 (1998). The poor constitute about 51 percent of the population with about 36 per cent living in absolute poverty. Most of the poor are located in the rural areas.

Constraints

Major constraints for poverty alleviation in Zanzibar are low investment in the agricultural sector, low agricultural output, and low education on the part of farmers. Other constraints are lack of off-farm income, poor infrastructure, unreliable marketing channels and low agricultural technology.

Policy Statements

- (i) The Government will promote investment in the agricultural sector.
- (ii) To promote higher agricultural productivity among poor farmers.
- (iii) To promote off-farm income generating activities.

Policy Strategies

- (i) Intensify agricultural production through improved technologies.
- (ii) Encourage more investment in smallholder irrigation systems.

- (iii) Initiate and promote poverty alleviation projects to be implemented by NGOs and CBOs.

2.1.5 Food Security and Nutrition

Objective

To ensure basic food security at national, local and household levels.

Issue

Inaccessibility to adequate and safe supply of food by all individuals according to nutritional needs

Zanzibar has no food security policy of its own. As to nutrition, about 50% of Zanzibar children under-five years of age suffer from malnutrition and one out of five children in rural areas are severely malnourished.

Constraints

Inadequate food supply and low incomes have led to inadequate food intake especially amongst pregnant mothers and children. Poor sanitation and presence of various communicable diseases have contributed to the intake of unsafe food.

Policy Statements

- (i) To formulate a food security policy.
- (ii) To formulate and implement a special food security programme.

Policy Strategies

- (i) Institute and promote water control management.
- (ii) Encourage intensification of rice and other crops, and increase the production of livestock and fish.
- (iii) Promote agricultural diversification towards high value products.
- (iv) Continuously assess food sector performance to identify constraints to food production and take remedial measures.
- (v) Improve sanitary conditions and promote preventive measures to reduce communicable diseases.
- (vi) Encourage different sources of income generation activities for increasing the smallholders' income.

2.1.6 Land Issues

Objective

To provide secure tenure for all Zanzibaris involved in agricultural production.

Issue

The population is unaware of the Land Act No. 12 of 1992 and this uncertainty of land tenure systems hampers agricultural development

Land tenure in Zanzibar is a mixture of various systems. Land Act No. 12 of 1992 recognises three types of land tenure systems. These are: public land designated as state land and owned solely by the Government; private land (including 3 acre plots) owned by individuals and; the right of occupancy given by the Government. While the Land Act provides the legal and appropriate basis for all three tenure systems, customary laws still play an important role.

Constraints

Registration of land parcels which is a pre-requisite for land ownership has not been completed. The public is not aware of the existing land legislation. Consequently little investment is made to improve the productive efficiency of land.

Policy Statements

- (i) The Government will implement land registration so as to ensure land ownership as established in the Land Tenure Act.
- (ii) To educate the population on the 1992 Land Tenure Act so that all land transactions are conducted in accordance with the laws governing land in Zanzibar.
- (iii) To form Land Transfer Committees and a Land Tribunal as provided for in the 1994 Land Transfer and Land Tribunal Acts.
- (iv) To ensure that all Zanzibaris have equitable access to land.
- (v) To protect customary rights of different groups to essential land resources.
- (vi) To streamline institutional arrangements for land administration and land dispute adjudication.

Policy Strategies

- (i) Collaborate with the Ministry of Water, Construction, Energy and Lands (MWCEL) to ensure efficient implementation of the land policy.
- (ii) Provide secure property rights for agricultural producers through land registration and titling.
- (iii) Charge costs for land registration and titling services demanded by individuals and use the money for registering lands of farmers who cannot pay for such services.

2.1.7 Agricultural Land Use Patterns

Objective

To promote optimal uses of lands and minimise conflicts among the various users of lands.

Issue

There are increasing conflicts between different land users

Current land use does not conform with allocated land use, thus leading to conflicts between livestock and crop production on the one hand, and farming and conservation of forestlands on the other. In addition, urbanisation, through horizontal expansion of buildings, has taken up some of the fertile land that was used or could have been used for agricultural production. As a result land for agricultural production has been declining.

Constraints

Implementation of land use planning at national and village levels is not adequately conducted. Lack of participation of rural communities in land use planning and improper use of productive land, are also major causes of conflicts among land users.

Policy Statements

- (i) To implement land use planning at village level.
- (ii) To promote participation of rural communities in land use planning in order to minimise conflicts.
- (iii) To promote the most productive uses of land.

Policy Strategy

The MANREC will collaborate with MWCEL to promote improved land use practices for production and conservation of resources.

2.1.8 Water Policy

Objective

To develop and manage efficient water supply systems in order to ensure reliable water supply for increasing agricultural output.

Issue

Agricultural production is largely rainfed, but a lot of rainwater is lost through surface runoff

The main sources of water in Zanzibar are boreholes, springs, caves, local wells and small rivers. The availability of and accessibility to water is highly affected by rainfall and evapotranspiration. There is need to harvest and store water for agricultural production.

Constraints

Efforts to contain rainwater losses have been constrained by lack of water harvesting and storage techniques. The absence of efficient water management systems is another major constraint.

Policy Statement

To promote the private sector to develop technologies for water harvesting and storage.

Policy Strategies

- (i) Encourage the private sector, through incentives, to develop and deploy water harvesting and storage technologies.
- (ii) Ensure water facilities are installed in all production areas and that such facilities are efficiently used and regularly maintained.
- (iii) Encourage the private sector to tap underground water.

2.1.9 Energy Policy

Objective

To develop a reliable, affordable, and environmentally sound alternative energy supplies in order to reduce the usage of wood for energy.

Issue

The increasing demand for fuel wood is destroying the environment

Fuel wood, charcoal and agricultural residues account for 90 percent of final energy consumption. Due to growing demand for fuel wood, which cannot be sustained by the diminishing sources, the environmental damage has resulted in severe soil erosion, watershed and ground water deterioration, as well as the ecological degradation of vulnerable areas. All of these have negative impacts on the agricultural sector.

Constraint

The Government does not have an energy policy.

Policy Statements

- (i) To formulate and adopt an energy policy whose main objective is to provide adequate energy.
- (ii) The Government will promote the use of commercial fuels in the rural areas.

Policy Strategies

- (i) Establish regulations and guidelines for energy utilisation.
- (ii) Educate the general public on the negative impacts of unregulated use of fuel wood and environmental friendly technologies.
- (iii) Undertake research to find cheaper alternative sources of energy and energy saving technologies.
- (iv) Promote policy changes, which will increase rural incomes and, therefore, the ability to buy fuel.

2.1.10 Education Policy

Objective

To provide vocational training for the youth, women and other farmers to better prepare them for self-employment.

Issue

There is no training institution that is providing vocational courses through formal or informal training related to agriculture, livestock and natural resources

Vocational training of agricultural related aspects such as production, processing and marketing offers more opportunities to school leavers. However, the education policy is silent when it comes to the structure and content of the proposed vocational education, and who is responsible for the preparation of the proposed special programme and curricula.

Constraints

Weak co-ordination between the MANREC and the Ministry of Education, absence of vocational training institutions and appropriate agricultural curricula, and lack of professional staff to train students in schools and in institutions of higher education.

Policy Statements

- (i) To establish proper training programmes and enhance the quality of agricultural staff.
- (ii) To promote vocational training on agricultural related aspects.

Policy Strategies

- (i) Prepare and implement primary, secondary and post-secondary curricula that emphasise relevant aspects of agriculture, livestock, fisheries, agricultural marketing and environment.
- (ii) Allocate sufficient professionals to participate in the development and implementation of vocational training programmes.
- (iii) Review and promote adult education programmes that promote agricultural activities.

2.1.11 Industrial Policy

Objectives

- (i) To promote the usage of agricultural products as raw materials for the industrial sector.
- (ii) To produce high quality inputs for the agricultural sector.

Issue

Agricultural outputs are not adequately used as raw materials in the industrial sector

The low level of development in the engineering industry has led to the existence of firms which depend heavily on imported raw materials, skills, equipment and spare parts. Agro-processing has great potential in Zanzibar because raw materials are available and could be increased.

Constraints

Weak co-ordination between the Ministries of Agriculture, Natural Resources, Environment and Cooperatives and Trade, Industries and Marketing, together with the inefficient utilisation of raw materials required by the industrial sector, are the major factors that inhibit the growth of agro-processing.

Policy Statements

- (i) The Government will strengthen the mutual interdependence between agriculture and industry.
- (ii) To promote the production of agricultural commodities for industrial processing.

Policy Strategies

- (i) Create a conducive environment for industrial investment and for promoting investment in agro-processing.
- (ii) Promote the expansion of markets for the purpose of stimulating and sustaining the processing of agricultural products.

2.1.12 Environmental Policy

Objective

To protect and manage the country's environmental assets for sustainable development.

Issue

Environmental degradation is an issue of major concern for agricultural development

The current state of the environment is a matter of concern. There are serious environmental problems. These include decline in soil fertility, deforestation for fuel wood, charcoal and poles and destruction caused by excessive use of fire. Other problems are degradation caused by careless quarrying and improper disposal of industrial and domestic wastes, and use of destructive fishing practices such as dynamiting.

Constraints

Lack of awareness on the part of the public as to the importance of protecting the environment, high population growth and concentration, and use of agro-chemicals in agricultural activities, are the major factors contributing to environmental degradation.

Policy Statements

- (i) To educate the public on the need for environmental protection and conservation.
- (ii) To promote agro-forestry practices.
- (iii) To intensify genetic resource conservation programmes.
- (iv) To discourage the use of agro-chemicals and promote the alternate use of organic farming.

- (v) The MANREC will promote conservation of soils and water.
- (vi) To encourage the intensification and diversification of agricultural production.
- (vii) To promote the ecologically sustainable development of fisheries.

Policy Strategies

- (i) Promote and protect the existing biodiversity programmes.
- (ii) Incorporate environmental impact assessment in agricultural activities.
- (iii) Enact laws and enforce legislation for environmental protection and preservation.

2.1.13 Linkage Issue

Objective

To strengthen the interdependence between the MANREC and other key Ministries.

Issue

Agriculture's contribution to the economy is not limited to its share in the total GDP. The linkages between it and other sectors of the economy are also important

Agro-processing industries, some agro-based manufacturing industries and sections of the transport, trade and financial sectors, depend largely on the volume and value of agricultural output. From the other side, the development of agro-based enterprises will promote agricultural production by increasing the demand for agricultural products and improving the supply of inputs and services to the agricultural sector.

Constraints

While the interdependence between the MANREC and other Ministries is known, the mechanism for strengthening such interdependence is absent.

Policy Statement

To develop stronger co-ordination between the MANREC and other key ministries that support agricultural development.

Policy Strategy

Establish an Inter-ministerial Policy Co-ordinating Committee.

2.1.14 Infrastructure

Objective

To develop reliable and cost effective infrastructure and transport systems for the purpose of increasing agricultural growth.

Issue

Infrastructural facilities for agricultural development are very poor

Despite the presence of good road network, some of the feeder roads are not all-weather roads. Although sea and air infrastructure has improved, their potential is yet to be exploited for agricultural development. Other infrastructure like storage facilities for agricultural produce, marketing and processing are inadequate.

Constraints

Some of the feeder roads are not all-weather roads, lack of investment in economic infrastructure (such as storage, marketing and processing) in rural areas, and lack of high value agricultural products required for utilising air transport, have inhibited agricultural development.

Policy Statements

- (i) To rehabilitate the existing rural roads in order to reduce transport costs and improve their accessibility throughout the year.
- (ii) To promote investment in other economic infrastructure for agricultural production, marketing and processing.
- (iii) To promote the production of high value agricultural commodities in order to efficiently use air transport.

Policy Strategies

- (i) Increase public investment in rural road networks and other economic infrastructure for agricultural production.
- (ii) Establish sustainable mechanisms for financing initial investment in roads and for regular maintenance of all roads and other economic infrastructure for agricultural production.
- (iii) Promote private sector and community initiatives and efforts to improve feeder roads, storage, processing and marketing facilities.

2.1.15 Agricultural Credit

Objective

To promote the availability of affordable credit to smallholders.

Issue

Most smallholder farmers and fishers have no access to credit facilities

Credit has been directly extended to farmers and fishers by various projects and institutions. These organizations created their own infrastructure for disbursing, supervising the utilisation of credit and for collecting repayments. Credit was usually restricted to the promotion of particular technologies such as tractor ploughing or to specific target groups such as rice farmers. General agricultural credit facilities were not offered. In addition, many smallholders consider credit from the Government as being synonymous with grants, which they do not have to repay.

Constraints

Credit facilities responsive to the needs of the agricultural sector are lacking and mechanisms for credit delivery and recovery are very inefficient. There are few savings and credit associations for rural smallholders, and there is a lack of proper advice on the proper utilisation of credit facilities.

Policy Statements

- (i) To promote the establishment of rural savings and credit associations.
- (ii) To encourage the use of improved farming technologies, new high value agricultural products and improve marketing systems in order to improve the productivity of credit.
- (iii) To provide a reliable and timely management information system for savings and credit associations in order to improve management capability.
- (iv) To provide an enabling environment for the operation of a sustainable credit system.
- (v) To encourage, through appropriate prudential guidelines and sound monetary policy, competition among banks and financial intermediaries in the provision of credit.
- (vi) To establish Rural Development Bank

Policy Strategies

- (i) Facilitate the process of establishing credit systems, which will be responsive to the needs of all farmers and fishers.
- (ii) Continue to search for the best approach to credit delivery and recovery.
- (iii) Design a framework to develop savings and credit associations for rural smallholders.
- (iv) Formulate sound financial policies and legal procedures in order to enable savings and credit associations to function efficiently and effectively as private commercial entities.
- (v) Guarantee loans provided to savings and credit associations.

2.1.16 Agricultural Subsidies

Objective

In view of the range of problems and side effects associated with agricultural subsidies, the objective is to eventually remove these subsidies in a phased manner, which does not disrupt agricultural production.

Issue

The intention to privatise the market for agricultural inputs requires that agricultural subsidies be removed. This will also reduce the Governments' financial burden

The Government has been subsidising various farm inputs and credit for the purpose of improving production and increasing rural incomes. Even after the liberalisation of the economy, the Government has continued to subsidise agricultural inputs. The rationale for continuing with the policy of subsidising farm inputs is that farmers are too poor to fully afford modern agricultural inputs. However, the envisaged policy objectives of improving agricultural production and increasing rural incomes have not been sufficiently realised. The subsidy programme has imposed a serious strain on the Government budget.

Constraints

In the absence of inputs subsidies, smallholders will not be able to afford modern inputs. Low agricultural productivity and lack of high value agricultural products also limit the growth of farmers' incomes. Improved traditional technologies, which require little financial inputs are also lacking.

Policy Statements

- (i) To gradually phase out subsidies on agricultural inputs.
- (ii) To promote the use of improved traditional resources or technologies that require limited financial inputs.

Policy Strategies

- (i) Promote the establishment of savings and credit associations in the rural areas.
- (ii) Develop and promote technologies and farming systems that use organic materials and employ animal traction in order to reduce the use of high cost inputs.
- (iii) Set yield (productivity) targets and compare the resulting input-output ratios in determining what proportion of subsidies to be phased out.
- (iv) Annually review production and yields to assess the profit margin of smallholders as the basis for reducing subsidies.
- (v) Promote the availability of affordable credit along with strategies for phasing out subsidies.
- (vi) Encourage the formation of farmers associations in the marketing of agricultural inputs and products in order to minimise costs of inputs and maximise profit margins.

2.1.17 Financing of Agriculture

Objective

To provide adequate funding in relation to the important role agriculture is playing in the economy.

Issue

Funds to support agricultural activities are inadequate and are not provided in a timely manner

Agriculture is still the most important sector of the Zanzibar economy. However, the sector has been allocated an average of 5% of the total government expenditure annually. This share of the total government budget does not reflect the sectors' importance. The sector has remained under-funded from both domestic and foreign sources. Relative to the other sectors, agriculture is currently placed in priority number three.

Policy Statements

- (i) To ensure that adequate funds are provided in a timely manner in order to support agricultural activities.
- (ii) To continue to work in close partnership with development partners to support the agricultural sector.
- (iii) To increase government budget allocation to the sector in order to reflect its important role in the economy.

Policy Strategies

- (i) Introduce cost sharing for certain services offered by the Government.
- (ii) Mobilize savings from the general public for investment in the agricultural sector.
- (iii) Solicit funds from external sources.
- (iv) Allocate budget to the MANREC in accordance with its core functions as reflected in the policy document.
- (v) Establish a revenue retention scheme and a transparent system for using such funds in the MANREC.
- (vi) Assign the Inter-ministerial Policy Coordinating Committee to prepare a budget that reflects the interdependence of the MANREC and other Ministries.

2.1.18 Cost Recovery Programmes

Objective

To reduce the Governments' financial burden in the provision of agricultural support services.

Issue

Decline in quality and relevance of agricultural services

In recent years the demand for agricultural services, particularly for research and extension, has grown substantially. This is a result of the increasing growth of the

farming population and the expansion of high value crops such as fruits, vegetables and livestock products.

The Governments' budget is limited and cannot meet the aspirations of all farmers and fishers in supplying relevant research and extension services of the requisite quality. Demand-driven research and extension services should be targeted for cost recovery.

Constraints

Lack of access to credit by agricultural producers, low rural incomes as a result of low agricultural productivity and lack of high value agricultural products limit the extent to which cost sharing can be instituted.

Policy Statement

To charge part of the cost for demand-driven research and extension services.

Policy Strategy

Institute gradual cost recovery and cost sharing mechanisms, which will target commercial producers.

2.1.19 Human Resources Development

Objective

To develop human resources for policy formulation and management.

Issue

The gap between the existing and the required human resources for policy formulation and implementation is substantial

The MANREC has a total of 3,158 employees assigned to its Commissions and the Planning Department. However, only 350 have at least certificate level qualifications. Additional trained manpower is needed across the sector in order to implement agricultural policy. The key areas for training include formulation of implementable programmes and projects.

Constraints

Shortage of funds for training is the most constraining factor. Other constraints include lack of institutional capacity to undertake policy reforms and absence of an efficient data bank.

Policy Statements

- (i) The MANREC will provide continuous in-service and external training of its staff to improve their capacity in policy formulation, implementation, monitoring and evaluation.
- (ii) To make periodic reviews of the sub-sector policies. Such reviews will focus on the performance of various partners including government agencies, NGOs and the private sector in policy implementation.
- (iii) To take steps to secure political and financial support, inside and outside the country, needed to implement the policy and carry out required reviews.

- (iv) To review the capabilities of its institutions in the different sub-sectors, including human resources, and good working environment for the purpose of building capacity.
- (v) To establish an efficient and accessible data bank system.

Policy Strategies

- (i) Build and improve institutional capacity within the MANREC.
- (ii) Take measures to improve the statistical and information data bank in the MANREC.
- (iii) Ensure that policy formulation and review is a participatory process, involving all stakeholders.
- (iv) Promote in-service training, seminars, workshops and seek funding for external scholarships.

2.1.20 Institutions in the MANREC

Objective

To review the institutional structure of the MANREC for the purpose of strengthening the MANREC's capability to perform its new functions.

Issue

The current institutional structure of the MANREC does not conform to the demands of the new agricultural policy

Since the role of the MANREC will be confined to public support functions, structural changes aiming at increasing productivity, developing new technology and producing new products will be required.

Policy Statement

To strengthen agricultural institutions to enable them to implement, monitor, review and evaluate sector performance in order to meet the objectives of the new agricultural sector policy.

Policy Strategy

Review and restructure the MANREC in order to conform to the institutional requirements of the new agricultural policy.

2.1.20.1 Kizimbani Agricultural Research and Training Station (KARTS)

Objective

To establish an institutional framework for conducting agricultural research activities and training programmes, which meet the diverse needs of the sector and cater for, specialised aspects of agriculture and related fields.

Issue 1

KARTS is not performing well

Currently research and training are under the management of the KARTS. This arrangement has reduced efficiency in both research and training. In view of the additional demands, which will be created by the new policy, there is a need to improve research activities and training of extension staff and farmers.

Issue 2

Lack of well trained farmers and extension agents

Technicians who are engaged in agricultural extension at village and district levels lack basic and technical agricultural education. There is also a need to provide specialised short-term training to farmers to upgrade their skills, particularly in agro-tourism.

Constraints

Inadequate financial, human and material resources, and management capacity at the station.

Policy Statements

- (i) To review the functions of KARTS.
- (ii) To provide adequate resources to strengthen KARTS.

Policy Strategies

- (i) Commission a study to assess the viability of splitting KARTS into Research and Training Institutions.
- (ii) Take appropriate measures to implement the recommendations of the study.

2.1.20.2 Agricultural Parastatals

2.1.20.2.1 Mahonda Sugar and Perfume Corporation

Objective

To privatise the Mahonda Sugar and Perfume Corporation in order to revive production and improve performance.

Issue

The performance of the Mahonda Sugar and Perfume Corporation is not impressive

The Mahonda Sugar and Perfume Corporation has an installed capacity of 6,000 tonnes of sugar, and 700 tonnes of spirit per annum. However, there is no production taking place at the moment. The Government is currently in the process of leasing the corporation to a private investor.

Constraint

The performance of the Mahonda Sugar and Perfume Corporation is constrained by lack of financial resources.

Policy Statement

To privatise the Mahonda Sugar and Perfume Corporation.

Policy Strategies

- (i) Promote joint venture with the private sector in the running of the Mahonda Sugar and Perfume Corporation.
- (ii) Eventually sell all government shares to the private sector and ordinary individuals.

2.1.20.2.2 Tractor Repair Workshops

Objective

To complete the commercialisation process of the Tractor Repair Workshops (TRWs) in order to improve performance.

Issue

The performance of the Tractor Repair Workshops is not impressive

The commercialisation policy of TRWs has not been fully implemented. Farmers are still obtaining tractor services at subsidised rates and the MANREC is supposed to cover the difference. The MANREC is not paying for the repair services, which make the management of the workshops difficult.

Constraints

The commercialisation policy of TRWs is constrained by non-payment for the repair services by customers, and some tractors which are under the responsibility of MANREC and being used for cultivation, are not under the management of TRWs.

Policy Statement

To commercialise the TRWs by taking into account the availability of adequate services to farmers.

Policy Strategies

- (i) Ensure prompt payment for the rendered services.
- (ii) Put all tractors, which are under the responsibility of MANREC and being used for cultivation under the management the Tractor Repair Workshops.
- (iii) Collaborate with Farmers' Association in order to ensure availability of tractor services to all farmers.

2.1.20.3 State Farms

Objective

To ensure that land currently used as state commercial farms is productively utilised.

Issue

Most of the state commercial farms operate very inefficiently

A large number of state farms remain under the direct operation of government. Much of the land under state farms is not used or is underutilised while neighbouring farmers do not have enough land to farm.

Constraints

Lack of operating funds (for buying fuel, replacing machinery, buying inputs, maintaining buildings), low working morale and embezzlement of produce by farm workers and managers are some of the main causes of these farms' poor performance.

Policy Statement

To privatise state commercial farms.

Policy Strategies

- (i) Break up the state commercial farms into economic plots for distribution to smallholders by taking into consideration their production capabilities.
- (ii) Create a committee to oversee the distribution of state commercial farms.

2.2 Crop Sub-Sector

2.2.1 Importance of Crops in the Economy

According to GDP figures, the sub-sector's contribution has been declining from 26 percent in 1993 to 23 percent in 1997. In the case of agricultural GDP (at current prices) the sub-sector's share steadily declined from 66 percent in 1993 to 60 percent in 1997. The crop sub-sector being the main farming activity in Zanzibar is the major employer, the main source of food security and the main foreign exchange earner.

2.2.2 Sub-sector Issues

2.2.2.1 Agricultural Extension Services

Objective

To develop more effective extension strategies for servicing smallholders who require innovative and low cost technologies.

Issue 1

Agricultural extension system is inadequate

The Unified Extension System whose main purpose is to co-ordinate the fragmented research and extension activities has not succeeded.

Constraints

Farmers are not benefiting because of limited resources given to extension services, weak communication between research-extension-farmers, lack of improved technical packages, shortage of qualified technical staff and inability of farmers to absorb high-cost technology.

Issue 2

Grassroot extension staff lack adequate basic and technical education

At present the majority of grassroot extension staff lack adequate basic and technical agricultural education and this has substantially reduced their effectiveness.

Constraints

The number of competent grassroot extension staff is inadequate and most of them are old and difficult to train.

Policy Statements

- (i) To promote the provision of information, communication and advisory services that will change farmers' attitudes towards adopting improved technologies.
- (ii) To mobilise and co-ordinate efforts of other stakeholders, both public and private, to provide advisory services.
- (iii) To co-ordinate extension and delivery systems in order to link production, credit and marketing aspects of crop farming.

- (iv) To build strong, efficient and responsive extension services so as to make them more effective in providing extension services.

Policy Strategies

- (i) Promote participatory farming systems research and extension in order to assist farmers in finding on-farm solutions to the constraints they face.
- (ii) Introduce technologies and farming practices appropriate to local resource endowments.
- (iii) Promote the use of existing technologies.
- (iv) Provide adequate performance based incentives, including transport to extension staff and ensure effective supervision of such staff.
- (v) Build a strong partnership with other stakeholders, particularly NGOs, farmers' associations and the private sector, in order to exploit fully the opportunities inherent in the existing extension services.
- (vi) Increase the number of skilled and technically competent staff, with emphasis on increasing the number of female extension workers.
- (vii) Identify and prepare an inventory of progressive farmers for different crops.

2.2.2.2. Agricultural Research

Objective

To produce appropriate agricultural technologies and services to improve agricultural production systems with minimum adverse effect on the environment and maximise wealth creation for farmers and also for the nation.

Issue 1

Ineffective co-ordination of Agricultural Research Masterplan

Agricultural research is largely carried out by the public sector, mainly through the Commission of Research and Extension. The design of the research programme is defined in the Research Masterplan for Agriculture and Natural Resources.

The Zanzibar Research Masterplan identified the need to have a research council to monitor research activities. This led to the formation of the Zanzibar Agricultural Research Council (ZARC) with the main objective of formulating, co-ordinating and evaluating research, ranking priorities and deploying professional personnel. However, despite a number of organisational changes, most of the research work remains uncoordinated and the agricultural research masterplan will need occasional review to meet the changing needs of stakeholders.

Issue 2

Poor linkage between research and extension

Research should be demand-driven and directed towards reversing/arresting environmental degradation and restoring soil fertility, developing technology to reduce

the risks caused by unpredictable weather conditions as well as solving pest and disease problems, and maximising water use. The inadequacy of the research system and the ineffective extension system has led to a lack of proper co-ordination between them in addressing the priority problems facing farmers.

Constraints

The major constraints are limited budget for research activities, lack of trained and committed research personnel, lack of motivation amongst research staff and lack of adequate infrastructure facilities for research.

Policy Statements

- (i) To strengthen ZARC so as to increase its capacity to guide and monitor agricultural research.
- (ii) To focus research activities on integrated nutrient management and pest control.
- (iii) To promote demand-driven research.
- (iv) To closely co-ordinate research, extension and training services.
- (v) To ensure adequate funds for research and encourage commodity agencies to contribute to such fund.
- (vi) The MANREC will develop infrastructure facilities at research institutes.
- (vii) To ensure that agricultural research integrates crops, livestock and agro-forestry as major farming systems.

Policy Strategies

- (i) Allocate more funds for seeds research in order to produce high yielding varieties.
- (ii) Focus on Integrated Crop and Pest Management (ICPM) technology in order to reduce the cost of pest control.
- (iii) Improve and strengthen research infrastructure particularly in Kizimbani and Matangatuani Research Stations.
- (iv) Promote participatory agricultural research activities so as to solve farmers' immediate problems.
- (v) Motivate researchers in terms of providing performance-based remuneration, improving working facilities and providing further training.
- (vi) Strengthen the linkage between crop producers, extension and other support services in order to ensure that farmers' constraints are identified and appropriate solutions are efficiently addressed.
- (vii) Provide the ZARC with adequate qualified staff and adequate legal status in order to make it more effective in guiding and monitoring research activities.

2.2.2.3 Regulatory Services

The MANREC has identified and retained under its jurisdiction all relevant regulatory functions and will establish a legal mechanism for their enforcement. The following regulatory functions fall under the MANREC.

2.2.2.3.1 Seeds and other Agricultural Inputs

Objectives

- (i) The objective of the seed policy is to facilitate the growth of the agricultural industry to allow greater production and availability of seed of all crops grown.
- (ii) To encourage measures that will promote the maintenance and improvement of soil fertility in order to achieve sustainable agricultural production.
- (iii) To ensure that farmers have access to agricultural chemicals appropriate to their needs.

Issue 1

Low quality of seed

There is inadequate control of seed quality as well as ineffective enforcement of official regulations. Farmers are still using low yielding mixed variety seeds of which more than 95 percent are traditional. So far the MANREC has not been able to produce enough certified seeds to meet farmers' needs.

Issue 2

Increasing the use of organic fertilisers

Crop and animal residues are a major source of organic matter, which can give much more nutrients.

Constraints

The constraints are inadequate control of seed quality, ineffective enforcement of regulations and low input purchasing power on the part of the farmers

Policy Statements

- (i) To create an enabling environment for the private sector to participate in the production, marketing and distribution of high yielding seed varieties.
- (ii) To establish a seed certification agency and strengthen regulatory functions associated with seed production, importation and marketing.
- (iii) To promote the use of organic fertilisers such as farmyard manure, compost and others so as to improve soil fertility.

Policy Strategies

- (i) Encourage liberalisation in the production and delivery of agricultural inputs through the removal of seed subsidies.

- (ii) Establish an adequate legal and regulatory framework in areas of phytosanitary requirements, plant quarantine, variety registration and certification.
- (iii) Encourage the private sector and farmers' associations to invest in the multiplication of seeds and seedlings.
- (iv) Provide training to farmers, schools and other institutions in the preparation and use of organic fertilisers

2.2.2.3.2 Plant Protection Services

Objective

To improve pest and disease management in crops.

Issue

Non-adherence to plant protection rules

The public and law enforcing agents do not adhere to the plant protection rules and regulations.

Constraints

The major constraints are lack of facilities in quarantine and produce inspection units, inadequate specialised staff, and lack of awareness on rules and regulations of plant protection.

Policy Statements

- (i) To publicise the plant protection legislation through the mass media in order to create public awareness on the importance of enforcing plant quarantine rules and regulations.
- (ii) To develop and modernise facilities required to enforce plant quarantine and produce inspection.

Policy Strategies

- (i) Strengthen research and extension on ICPM to control pests and diseases.
- (ii) Reinforce produce inspection to restrict the spread of pests and diseases through imposition and maintenance of quarantine.
- (iii) Enforce the crop protection legislation.
- (iv) Equip the surveillance section of plant quarantine.
- (v) Register, license and regulate the use of pesticides.

2.2.2.4 Technical Services

The technical aspects of the crop sub-sector include irrigation, agricultural mechanisation and soil and water conservation. Each of these aspects is elaborated below.

2.2.2.4.1 Irrigation Development

Objective

The objective is to provide the overall framework and strategies to enhance the development of irrigation in a cost-effective, efficient and sustainable manner.

Issue

Lack of hydrological surveys on streams

There are numerous streams in Zanzibar, some of which could be utilised if proper structures for diversion/storage are constructed and maintained. Ground water irrigation can also be developed if proper infrastructure for the same is provided. However, necessary pre-investment hydrological surveys have not been conducted on these streams. Such surveys are important prerequisites for the implementation of an irrigation development strategy.

Constraints

Irrigation development is hampered by inadequate maintenance of the existing irrigation structures, lack of funds and technical skills, shortage of qualified staff in the field of water management, lack of effective Water Users Associations, and lack of water harvesting and storage technologies.

Policy Statements

- (i) To promote active farmers' participation in the development of irrigation plots, water management, as well as in the running and maintenance of irrigation structures.
- (ii) To explore all avenues for initiating, improving and maintaining irrigation and water management practices.
- (iii) To evolve an efficient mechanism for the collection of water fees from water users.

Policy Strategies

- (i) Promote the rehabilitation of the existing irrigation schemes.
- (ii) Promote and strengthen Water Users Associations to ensure proper use of irrigation water.
- (iii) Develop and promote water-harvesting techniques.
- (iv) Encourage the private sector to invest in irrigation farming.
- (v) Create an efficient mechanism for the collection of water fees from water users in order to cover the running and maintenance costs of providing water.

2.2.2.4.2 Agricultural Mechanisation

Objective

To promote the improvement of farm labour productivity through the use of appropriate agricultural machinery, implements and tools.

Issue 1

Land preparation in heavy soils

The MANREC has established a mechanisation unit in order to provide timely and good quality services. Around 4000 ha of rice fields are yearly prepared using tractors supplied by the unit at subsidised prices. Mechanical land preparation is, at present, the only way to prepare the major areas of heavy soils in time. Experience has shown that in the absence of tractor services the total area of rainfed rice decreases considerably.

Issue 2

Inadequate use of animal traction

The introduction and expansion of animal traction is very important to contribute towards increasing labour and land productivity, decreasing transport costs and stimulating the use of farm manure on the fields.

Constraints

The actual cost of tractor services is expensive for most smallholders and the use of animal traction is not common partly due to the high cost of oxen and implements and partly due to lack of appropriate designs of animal-drawn farm implements.

Policy Statements

- (i) To promote the participation of the private sector in the supply of farm machinery, equipment and tools to the farming sector.
- (ii) The Government will continue to promote and encourage agricultural mechanisation.
- (iii) To support the development and adaptation of appropriate farm equipment.
- (iv) To encourage the private sector, NGOs and local communities to own and manage ox-training centres.
- (v) To encourage the use of animal traction both for farm work and transport purposes.

Policy Strategies

- (i) Strengthen extension services for animal traction.
- (ii) Establish ox-training centres.
- (iii) Support the development and adaptation of appropriate farm equipment, in particular animal-drawn equipment.
- (iv) Totally privatise TRWs and testing centres.

2.2.2.4.3 Soil Conservation and Water Management

Objective

To manage the land and water resources for sustainable agricultural production which avoids or minimises negative externalities.

Issue

Threat of increasing rate of soil erosion

Sheet erosion is common and is very destructive especially in Pemba. For many years, farmers have prevented sheet erosion by practising intercropping of food crops with tree crops on steep slopes, by terracing, and by mulching and bunding. However, under the clove based farming system in Pemba, clove trees are cut in order to expand food crops farming, for fire wood, charcoal and for building materials.

Constraint

Absence of alternative sources of fuel wood and building materials is the main constraint.

Policy Statements

- (i) To promote crop and livestock husbandry practices that conserve natural resources, enhance soil fertility and sustain production.
- (ii) To encourage the use of organic fertilisers and mulching practices in order to reduce pressure on land.
- (iii) The Government will assess land capability and carrying capacity in various areas in order to prevent land degradation, soil erosion, depletion of water resources, and deforestation.
- (iv) To formulate and implement natural resources management and environmental action plans.
- (v) To take measures to discourage the cutting down of productive clove trees.

Policy Strategies

- (i) Promote crop and livestock husbandry practices that conserve natural resources, enhance soil fertility, and sustain productivity.
- ii) Co-ordinate with other public and private institutions to promote integrated strategies for resource use.
- iii) Promote agro-forestry and the use of other sources of fuel and building materials in order to save clove trees.

2.2.3 Specific Sub-sector Issues

2.2.3.1 Traditional Export Crops

A. Cloves

Objective

The objective for cloves is to stabilise and increase the yield of clove trees in order to earn more foreign exchange.

Issue

Fluctuating output of cloves

Clove is the major foreign exchange earner in Zanzibar. The production of cloves has been varying between 1700 and 16000 tonnes/year. At present the production is around 5000 tonnes/year.

Constraints

The production of cloves has been hampered by climatic variations particularly rainfall, insecurity of the 1.2 ha (three acre) land tenure system which has discouraged investment in the crop, poor management practices on the part of farmers, high incidence of pests and diseases, and ageing of trees which has led to low yields.

Policy Statement

To take measures to optimise the output and quality of cloves.

Policy Strategies

- (i) Prepare a clove development programme.
- (ii) Put more emphasis on clove development research in collaboration with clove growers.
- (iii) Promote the production and planting of clove seedlings through supportive incentive structures to the private sector
- (iv) Provide technical support to clove growers in order to increase clove yields and quality.

B. Coconut

Objective

The objective for coconut development is to expand production of coconuts in order to increase foreign exchange income and to satisfy domestic demand for coconuts, both for cooking and refreshment purposes.

Issue

Decreasing output of coconut palms

Coconut is an important cash crop and occupies a predominant place in the food habits of the people. Coconuts, which are intercropped with other crops, have been producing low yields. Moreover, replanting has not occurred to cater for increased demand and indigenous refreshment coconut varieties are disappearing.

Constraints

The main constraints contributing towards low production of coconut are pest infestation, poor management practices, and insecurity of the 1.2 ha (three acre) land tenure system. Most of the palms are also old and have reached an uneconomic productive stage.

Policy Statements

- (i) To promote replacement of old poor yielding palms.
- (ii) To encourage farmers to grow indigenous dwarf varieties for refreshment purposes, in view of the expanding tourist industry.
- (iii) To support more research on the local East African Tall variety.

Policy Strategies

- (i) Provide technical support to private growers to produce good quality coconut seedlings.
- (ii) Facilitate the development of farm level processing technology.
- (iii) Encourage and promote demand-driven research and extension on coconut production, processing and marketing.

C. Chillis

Objective

To revamp the production of chillis in order to boost foreign exchange earnings.

Issue 1

Declining yields of chillis and low quality of planting material

Chillis production has been declining from 250 tonnes in 1905 to 1.3 tonnes in 1997. Throughout the years, the declining output of chillis has been contributed by a combination of factors namely, declining prices, lack of labour saving technologies during harvesting and expansion of seaweed farming which has attracted some of the chilli farmers. Research for variety selection adapted to coral rag areas is most important for obtaining good size, shape and colour with high capsicum content.

Issue 2

Deterioration of quality

Farmers should be trained to produce good quality chillis together with improvement in post-harvest technology as lack of suitable storage facilities has led to deterioration in quality of the dry chillis.

Constraints

The main constraints are low producer prices, high labour requirements, low comparative advantage in relation to seaweed, poor quality of seed, and poor storage facilities.

Policy Statements

- (i) To fund research on varieties and labour saving technologies.
- (ii) To provide market information to producers and exporters of chillis.
- (iii) To make efforts to upgrade storage facilities.

Policy Strategies

- (i) Strengthen demand-driven research and extension on chillis.
- (ii) Improve storage facilities for chillis.

2.2.3.2 Non-traditional Export Crops

Objectives

To promote the production and export of fruits, spices and essential oil crops and reduce the dependency on cloves as the main source of foreign exchange as well as to satisfy the domestic demand of raw materials for agro-processing industries.

Issue

Low production and poor marketing infrastructure

Fruits, spices and essential oil crops have been included in the crop diversification programme as they have shown a high potential for exports provided the quality of the products is improved. So far, these crops have limited scope to contribute to foreign exchange earnings.

Constraints

The major constraints include poor production organisation, lack of appropriate technological packages, disorganised/under developed marketing systems, lack of improved planting material, and poor post-harvest technology.

Policy Statements

- (i) The Government will facilitate the development of efficient marketing infrastructure that is conducive to these perishable commodities.
- (ii) To promote the exportation of non-traditional exports crops.
- (iii) To promote research on germplasm and biotechnology in order to increase production.

Policy Strategies

- (i) Introduce high yielding and good quality planting materials.

- (ii) Strengthen plant protection services and quality control to minimise crop losses due to insect pest damage and poor post-harvest handling.
- (iii) Promote demand-driven research and extension for these crops.

2.2.3.3 Food crops

The production of food crops has declined from 60 percent in terms of its contribution to domestic food supply in 1970 to 42 percent in 1980 and to less than 35 percent in the 1990s. Import liberalisation has drastically affected production trends of these crops, especially rice.

A. Rice

Objective

The main objective in rice production is to ensure food security and self-reliance through affordable domestic production.

Issue

Low yielding varieties and high incidence of pests and diseases

At present 15,600 tonnes of rice are produced and 80,000 tonnes of rice are imported yearly to meet the deficit. Research is needed to develop new high yielding varieties that respond to high fertiliser inputs and improved agronomic practices.

Constraints

There is lack of seasonal credit and an inefficient input delivery systems, which have made the production of rice both difficult and costly. Other factors, which constrain the production of rice, are pest and disease infestations and poor post-harvest technology.

Policy Statements

- (i) To give priority to paddy production through irrigation and water harvesting systems.
- (ii) To promote research for improving post-harvest technologies in order to reduce crop losses from harvesting, processing and storage.
- (iii) To promote and strengthen Water Users' Associations in order to make them more effective in ensuring efficient use of water for rice production.
- (iv) To encourage the private sector to participate in providing functions related to credit, mechanisation, and input delivery systems.

Policy Strategies

- (i) Intensify production through ICPM and organic farming technology.
- (ii) Promote irrigation and water harvesting technologies.
- (iii) Legalise and strengthen Water Users' Associations.

- (iv) Introduce short-term high yielding varieties to allow for more than one cropping season.
- (v) Promote savings and credit associations among rice producers.
- (vi) Gradually increase tariffs on imported rice.

B. Cassava

Objective

To increase output in smallholder farms in order to satisfy local demand and surplus for export.

Issue

Low yield and pest and disease infestations

Yields are still very low; smallholder farmers obtain 4-6 tonnes/ha. More research is needed to make this crop economical, profitable and acceptable for marketing. The major pests are green spider mite, cassava mealy bug and major diseases are brown streak virus, mosaic and cassava blight.

Constraints

Poor agronomic practices, and pest and disease infestations hinder the growth of cassava production.

Policy Statements

- (i) To take measures to control pests and diseases affecting cassava.
- (ii) To develop and release new planting materials.
- (iii) To strengthen research and extension services in order to develop improved storage and processing technologies for cassava.

Policy Strategies

- (i) Focus on research and extension, which will increase productivity.
- (ii) Promote effective private sector involvement in production, processing, and marketing of cassava.

C. Maize

Objective

To encourage smallholders to expand production and increase output of maize.

Issue

Low yielding varieties and poor management practices

Traditional methods of cultivation are still followed. Production is still low with local varieties producing 1.2 tonnes/ha. Research in variety development, pest and disease control and good cultural husbandry practices is needed to improve production.

Constraints

Pest and disease infestations hinder maize production. Pesticides are relatively expensive and unaffordable to the majority of the farmers.

Policy Statements

- (i) To control pests and diseases that affect maize.
- (ii) To promote the use of improved seed varieties.

Policy Strategies

- (i) Strengthen research and extension services on maize.
- (ii) Monitor and control epidemic pests and diseases.
- (iii) Facilitate the development and release of improved seed varieties.

D. Sorghum and millet

Objectives

- (i) To encourage farmers to produce sorghum and millet for domestic consumption as a food security strategy.
- (ii) To develop market demand so as to encourage expansion for commercial supplies.

Issue 1

Low yielding varieties and poor management practices

Yields are low, ranging between 2-5 tonnes/ha, due to the use of local poor yielding varieties, low plant population per hectare, pest and disease infestations and bird attacks. Research in variety development, pest and disease control and good cultural husbandry practices is needed to improve production.

Issue 2

High post-harvest losses

Most of the grains are lost due to the poor handling and storage practices. Farmers, therefore, need to be trained in post-harvest techniques.

Constraints

Pest and disease infestations hinder production particularly in times of outbreaks. Pesticides are relatively expensive and unaffordable to the majority of the farmers.

Policy Statements

- (i) To research, identify and release improved seed varieties adaptable to coral rag areas.
- (ii) To take measures to monitor and control stem borers and major diseases like leaf spot and mildew.

Policy Strategies

- (i) Strengthen research and extension on these crops.
- (ii) Control pests and diseases.
- (iii) Promote the use of improved seed varieties.
- (iv) Minimise post-harvest losses.

E. Sweet Potato, Yam and Cocoyam

Objective

To encourage production of these crops, so as to attain food security at the household level, and to boost internal and external markets.

Issue

Low yields and poor crop husbandry practices

Yields of these crops are still low due to poor crop husbandry practices, and in case of cocoyam, lack of early maturing high yielding varieties. More research on yield improvement and post-harvest technology is needed.

Constraints

The main constraints are shortage of planting material, poor storage and processing techniques, as well as attacks from pests and diseases.

Policy Statements

- (i) To introduce and screen improved varieties.
- (ii) To fund research on yield improvement and post-harvest techniques.

Policy Strategies

- (i) Introduce improved varieties.
- (ii) Improve crop husbandry practices.
- (iii) Conserve local germplasm.

F. Banana and Plantain

Objective

To encourage production of banana and plantain, so as to sustain a level of output, which meets total national requirements and viable export markets.

Issue

Low yield due to occurrence of pests and diseases

Particularly due to black sigatoka disease, production has been reduced drastically. More research on determining resistant varieties is essential.

Constraints

Most of the local cultivated varieties are susceptible to the black sigatoka disease.

Policy Statements

- (i) To continue research on resistant varieties adaptable to local conditions as well as screening local tolerant varieties.
- (ii) To promote the application of ICPM techniques in order to reduce the impact of plant pests.

Policy Strategies

- (i) Introduce resistant varieties through bio-techniques.
- (ii) Reduce the impact of plant pests through ICPM practices.
- (iii) Conserve local germplasm.

G. Cowpea, Pigeon Pea, and Green Gram

Objective

To expand the production of these crops for household consumption as part of a food security strategy, as an important source of protein, and to reduce the workload on women in the preparation of nutritious food for families.

Issue

Low yielding varieties and poor crop husbandry practices

Whereas cowpea and green gram play an important role in rainfed rice cultivation as the second crop to rice, pigeon pea is mainly cultivated in the coral rag. However, yields of these crops are generally low due to poor crop husbandry practices, and lack of early maturing, high yielding varieties. More research on yield improvement and post-harvest technology is needed.

Constraints

These legumes are susceptible to insect pests and diseases both in the field and in storage. Pesticides are expensive and unaffordable to the majority of the farmers.

Policy Statement

The MANREC will collaborate with national, regional and international institutions in undertaking research on short-term, adaptable, high yielding and drought resistant varieties.

Policy Strategies

- (i) Introduce resistant varieties through bio-techniques.
- (ii) Promote crop-livestock integration as well as ICPM farming practices in order to conserve soil fertility, regulate pest infestation, and sustain productivity.

H. Vegetables

Objective

To expand local production, so as to meet both domestic and external market demands for vegetables.

Issue

Seasonal availability of vegetables

Vegetables are mostly grown during the June-August period. Due to growing demand for vegetables, both by the tourists and for domestic use, efforts are needed to increase both quantity and quality throughout the year through smallholder and inter/mixed cropping systems. Efforts are also needed to increase research on improved varieties attractive to the tourist industry.

Constraints

Lack of irrigation facilities to the smallholders to enable them to cultivate vegetables throughout the year and pest and disease infestations are the major constraints affecting the production of vegetables.

Policy Statement

To facilitate the production of vegetable varieties that are demanded by the tourist hotels, households and foreign markets.

Policy Strategies

- (i) Strengthen research on production, processing and marketing of vegetables.
- (ii) Control pests and diseases through appropriate crop husbandry practices.

2.3 Livestock Sub-Sector

2.3.1 Importance of Livestock in the Economy

Livestock remains an important economic sub-sector in Zanzibar. The GDP estimates for livestock between 1993 and 1997 show an increasing trend. Livestock GDP steadily rose from 27 to 34 percent of the agricultural GDP. As the share of total GDP, livestock's GDP steadily rose from 11 to 13 percent during the same period. This is a remarkable improvement in the sector's contribution to the economy. Livestock generates income and employment for both men and women. It provides food, hides and skins, manure and draught power.

2.3.2 Sub-sector Issues

2.3.2.1 Consumption of Livestock Products

Objectives

- (i) To increase the supply and consumption of livestock products in order to meet nutritional standards.
- (ii) To provide safe livestock products to the public.

Issue

Per capita consumption of livestock products is low

The annual per capita consumption of red meat and milk is estimated at 3-4 kg and 11 litres respectively. These do not meet nutritional standards.

Constraints

Low purchasing power of the people and inadequate market outlets hamper increased production and consumption of livestock products.

Policy Statement

To increase rural and urban incomes.

Policy Strategy

Provide an enabling environment for the rural and urban communities to engage in more income generating activities.

2.3.2.2 Yield Improvement from Traditional Livestock System

Objective

To increase livestock productivity in order to achieve self-sufficiency in livestock products and export the surplus.

Issue

Low yields in the traditional livestock production system

The extensive system is practised in the traditional sector where feed supplementation is not provided, consequently yields are low.

Constraints

Low genetic potential of indigenous stock, inadequate feeding practices, and disease scourge are the main constraints affecting the livestock sub-sector.

Policy Statement

To strengthen research and extension services in order to improve production technology.

Policy Strategy

Generate more technological packages based on farmers' needs.

2.3.2.3 Commercial Meat Production

Objective

To reduce the high price of meat so as to encourage more per capita consumption of meat.

Issue

There is potential for commercial production of beef, goat and sheep, which has not been explored

The intensive system is mainly based on commercial dairy and poultry keeping. This system justifies efficient utilisation of land, which remains a scarce resource in Zanzibar. Application of this system in beef, goat and sheep fattening could improve the local supply of meat.

Constraints

Lack of appropriate technology together with scarce financial resources for developing on-farm infrastructure facilities constrain commercial production.

Policy Statements

- (i) To develop appropriate technological packages for fattening indigenous stock and dairy beef cattle.
- (ii) To encourage the formation of lending institutions, which will target commercial beef, goat and sheep producers.

Policy Strategies

- (i) Encourage farmers and unemployed youth to develop specialised fattening units so as to increase their income.
- (ii) Import semen of appropriate breeds for Artificial Insemination (A.I) with local stock.

2.3.2.4 Draught Power

Objective

To maximise the use of draught power.

Issue

Shortage of appropriate oxen for traction.

The use of animal traction in Zanzibar is well known for cart pulling but the use of animals in cultivation is very limited. Trials on the use of oxen in ploughing have successfully shown that they could be used in difficult and wet areas. The small size of Zanzibar East African Zebu needs to be improved to be efficient for work.

Constraints

Small size of Zanzibar East African Zebu and lack of proper training constrain the development of animal traction.

Policy Statements

- (i) To conduct research on appropriate use of oxen for traction through breeding and selection.
- (ii) To train farmers on animal traction.

Policy Strategies

- (i) Import appropriate bull semen for crossing with local cattle.
- (ii) Strengthen extension services on animal traction.

2.3.2.5 Breeding

Objective

To develop a coherent breeding programme that will preserve local germplasm, and increase productivity of the existing livestock population.

Issue

Indiscriminate cross breeding poses a great danger in the protection and conservation of livestock and fodder germplasm

The demand for grade animals and better feeds including forages is growing. The use of exotic breeds for crossing with local animals and the introduction of foreign grasses should be encouraged and monitored, otherwise the local germplasm may be lost.

Constraints

Lack of coherent breeding programme and low expertise in breeding are the main problems inhibiting the upgrading, protection and conservation of livestock and fodder germplasm.

Policy Statement

The MANREC will promote appropriate breeding programmes.

Policy Strategies

- (i) Regulate and enforce appropriate breeding programmes.
- (ii) Recruit experts and train specialised staff in the area.

- (iii) Encourage private sector participation in the provision of breeding materials.

2.3.3 Dairy Development

Objective

To achieve self-sufficiency in the production of milk and dairy products.

Issue 1

Scarcity of improved in-calf heifers and breeding stock

Currently dairy farming is strictly a smallholder business since state dairy farms have been leased or they are in the process of being leased. Before their lease, the state farms were a reliable source of improved in-calf heifers to the farmers and a source of practical skills to them.

Constraints

The constraints are diseases, fodder shortages and limited A.I facilities.

Policy Statements

- (i) To encourage NGOs, and private dairy producers to disseminate technological packages and to control East Coast Fever (ECF) in young calves and other diseases.
- (ii) To promote A.I services.

Policy Strategies

- (i) Make available improved technological packages so as to increase yields.
- (ii) Ensure, in collaboration with the private sector and NGOs, availability of pure/cross bred in-calf heifers, dairy goats as well as A.I services.

Issue 2

Fewer livestock keepers have adopted improved technological packages to raise yields

Different feeding trials were conducted to find means of assisting the smallholders. Demonstration and trials to determine suitable and proper methods of pasture production and improvement under coconut and clove plantations as well as on the marginal areas were made. Also trials on improving traditional fodder crops such as by-products of sugar-cane, cassava, leucaena and glyricidia were made. Methods of utilising agricultural and agro-industrial by-products such as coconut cake, rice bran and molasses were successfully demonstrated. As a result, some farmers adopted integrated crop/livestock production systems. More trials are now conducted on fodder production by intercropping elephant grass and glyricidia.

Constraints

The major constraints are traditional livestock husbandry practised by the majority of livestock keepers, land limitation, animal diseases, low investment and unavailability of improved breeds of dairy cow and milk goat. Others are weak extension services, disorganised marketing outlets coupled with unregulated importation of milk and dairy products from abroad, and fodder shortages.

Policy Statement

To prepare/organise improved technological packages so as to increase livestock yields.

Policy Strategies

- (i) Promote crop/livestock integration.
- (ii) Promote cottage industries to enhance market outlets.
- (iii) Provide better extension services.

2.3.4 Beef Production

Objectives

- (i) To reduce dependency of slaughter animals from the mainland.
- (ii) To reduce high cost of meat so as to allow more per capita consumption of meat.
- (iii) To maximise the use of by-products from slaughterhouses.

Issue

Beef production is hampered by shortage of grazing land and stock theft

The domestic source of beef is being supplemented from mainland Tanzania. The trend is increasing, as few local cattle are available due to reduced communal grazing land. Stock theft has also been a major concern.

Constraints

Feed shortages, low carcass weight and diseases are the major constraints. Also animals take long to mature.

Policy Statements

To address the problem of shortage of grazing land.

Policy Strategies

- (i) Promote the use of agro-industrial by-products.
- (ii) Import bull semen of appropriate beef breeds for A.I with local cattle.
- (iii) Educate livestock importers so as to minimise the incidence of disease.
- (iv) Address stock theft by enforcing legal measures.

2.3.5 Goats and Sheep

Objectives

- (i) To encourage rural people to rear goats and sheep so as to increase their income.

- (ii) To upgrade local goats and sheep in order to produce more meat and milk.

Issue 1

Lack of research and development programmes for goats and sheep

Small ruminants (goats and sheep) have high potentials to meet the national meat requirements and income generation especially for the rural communities. Rearing of these animals has not been given the attention it deserves.

Constraints

The major constraints are poor husbandry and nutrition together with high mortality due to diseases.

Policy Statement

To develop and disseminate new technological packages on feeding and husbandry.

Policy Strategy

Train livestock keepers on small ruminant related issues so as to improve production.

Issue 2

Goats and sheep potential for meat and milk production has not been explored

Goats and sheep are able to have three kidding/lambing every two years under improved management and breeding. Twinning is also a characteristic. Some breeds of goats are also good producers of milk that is cherished by some people.

Constraint

Low genetic potential of local goats and sheep.

Policy Statements

- (i) To initiate and develop cross breeding of local stock to raise genetic potentials for meat and milk production.
- (ii) To promote introduction of improved breeds adaptable to local conditions.

Policy Strategies

- (i) Import milk goat semen to be used for A.I.
- (ii) Introduce improved bucks for crossing with local breeds.

2.3.6 Poultry Production

Objectives

- (i) To achieve self-sufficiency in meat and egg production.
- (ii) To assist smallholder poultry keepers enter commercial production in order to increase their incomes.
- (iii) To increase income of women and youth, by promoting the production of these species.

Issue 1

Backyard poultry rearing is widely practised but yields are very low

The traditional poultry keeping system is found in almost every household in Zanzibar. Efforts to improve the birds could positively affect production.

Constraints

Slow growth rate, low fertility and hatchability are the main problems encountered in poultry production.

Policy Statement

To conduct research to identify suitable local breeds to upgrade backyard poultry keeping and expedite marketing.

Policy Strategies

- (i) Promote cockerel exchange programmes in rural areas.
- (ii) Increase the supply of improved cockerels.

Issue 2

Lack of modernised commercial poultry production for eggs and meat

The commercial sector comprises various selected hybrids and pure breeds. This sector is very productive when provided with the right inputs. However, the country is still dependent on low yielding indigenous poultry birds.

Constraints

The major constraints are unreliable supply of day-old-chicks and diseases.

Policy Statement

To establish an enabling environment for commercial production of poultry.

Policy Strategies

- (i) Develop hatcheries so as to increase the number of day-old-chicks.
- (ii) Promote the establishment of savings and credit associations through joint ventures with the private sector.
- (iii) Develop measures for quality control of poultry products.
- (iv) Advertise the use of poultry products through mass media and posters.

Issue 3

Production of meat from ducks, guinea fowls, doves and rabbits is low

Little attention has been given to the production of meat from other poultry species like ducks, guinea fowls, doves and rabbits. Investment required for this business is usually low and it is a good means of generating income.

Constraints

Poor technology is used in the rearing of these species.

Policy Statement

To encourage farmers, particularly women and youth, to develop production of other poultry species (ducks, guinea fowls, doves and rabbits).

Policy Strategy

Develop technological packages for ducks, guinea fowls, doves and rabbits.

2.3.7 Livestock Services

Objectives

- (i) To improve and sustain livestock services delivered to rural livestock keepers.
- (ii) To establish a formal livestock research institution.

Issue 1

Deterioration of livestock services

Adequate infrastructure and high quality services should promote livestock production. Experienced field staff, highly motivated at the village level, play an important role in enhancing productivity. Research is also important in the development of technological packages so as to improve productivity. In recent years livestock services have not been adequately financed.

Constraints

The main problems are shortages of funds, inadequate motivation to working staff and misallocation of trained staff.

Policy Statement

To increase the financing of livestock services.

Policy Strategies

- (i) Allocate adequate budget to liberalised livestock services in order to attain expected productivity and output.
- (ii) Provide performance-based incentives to livestock staff.
- (iii) Liberalise the provision of livestock services.

Issue 2

Lack of a formal research institution to foster research activities and demonstration in livestock

Research is important in developing new technologies to improve productivity. The increasing demand for livestock products requires new technological packages to foster yields and increase income. Currently few technologies are being developed in livestock due to lack of formal research institutions.

Constraints

The main constraints are inadequate trained and experienced staff to carry out research work and, a suitable location for the establishment of a specialised research institution has not been selected.

Policy Statement

To convert one of the state-owned farms into a formal institution to foster research activities and demonstrations in livestock.

Policy Strategies

- (i) Train staff in livestock research disciplines.
- (ii) Allocate adequate budget to develop research infrastructure.

2.3.8 Animal Health

Objectives

- (i) To prevent the introduction and spread of livestock diseases in the country.
- (ii) To strengthen legislation on sanitary conditions.
- (iii) To enable livestock keepers purchase more drugs and vaccines to treat their animals.

Issue 1

Inadequate quarantine facilities and abattoirs

Most of the diseases are introduced from mainland Tanzania due to weak sanitary legislation. Poor landing facilities, unreliable electricity, and lack of drugs at the quarantine sites make disease surveillance difficult. There are also no modern abattoirs to facilitate pre-mortem/ post-mortem inspection, and cold storage of meat is lacking. The current facilities also do not allow for the use of by-products from slaughterhouses.

Constraints

Shortages of operating funds and deterioration of quarantine infrastructure and abattoirs are the main factors contributing to inadequate quarantine facilities and abattoirs.

Policy Statements

- (i) To strengthen regulatory mechanisms in order to monitor and prevent livestock pests and diseases.
- (ii) To take measures to promote private sector involvement in building modern abattoirs.

Policy Strategies

- (i) Rehabilitate facilities for quarantine areas, veterinary clinics, animal health/production centres, and dips.
- (ii) Enforce quality control and standards for drugs and vaccines.
- (iii) Encourage the private sector to build modern abattoirs.
- (iv) Develop more quarantine stations.

Issue 2

Control and surveillance of livestock diseases have deteriorated

The livestock disease spectrum is large and causes severe economic losses.

Constraints

Low enforcement of sanitary legislation and outdated rules and regulations are the main constraints.

Policy Statement

To review and effectively enforce existing sanitary legislation.

Policy Strategies

- (i) Revise Animal Health and Production Laws.
- (ii) Strengthen surveillance of animal diseases.
- (iii) Increase awareness of disease through mass education for farmers.

Issue 3

High cost of drugs and vaccines have a negative impact on prevention and treatment of livestock diseases

The most important livestock diseases are tick borne diseases especially ECF, as well as bacterial, viral and parasitic diseases. As the cost of drugs and vaccines are now fully paid for by livestock keepers, there is a growing concern that farmers are failing to treat their animals and are experiencing heavy losses of animals.

Constraints

Low income among livestock keepers and lack of credit to purchase drugs and vaccines are the main problems.

Policy Statement

To conduct research on locally available drugs from traditional plants.

Policy Strategies

- (i) Promote the use of traditional drugs in the treatment of animal pests and diseases in order to reduce the cost of drugs.
- (ii) Conduct research on the effects of traditional drugs and certify their applicability in the treatment of livestock.
- (iii) Reduce taxes on imported vaccines and drugs so farmers can afford them.

2.4 Fisheries Sub-sector

2.4.1 Importance of Fisheries in the Economy

Fishing is an important economic activity of the people of Zanzibar. According to the overall GDP figures (at current prices) between 1993 and 1997 the fisheries contribution stagnated at around 2.5 percent. In terms of its contribution to the agricultural GDP the sub-sector's share fell from 5.2 percent in 1993 to 3.7 percent in 1997. It is possible that the fisheries component of agricultural GDP is undervalued because of under pricing. The sub-sector is also employing about 25 percent of the population either as fishers or as providers of supportive fisheries services. Fisheries products are a major source of animal protein to the majority of Zanzibaris. It also has a great potential for export, and increase in its percentage contribution to the GDP.

2.4.2 Sub-Sector Issues

2.4.2.1 Fish Catch

Objective

To increase fish catches in artisanal fisheries in a sustainable manner.

Issue

There is a general decline of fish catch in artisanal fisheries

Fish is the principal cheap source of animal protein for low-income families in Zanzibar in comparison to other sources such as beef, chicken and eggs. Zanzibar's total catch has remained steady over the last 10 years even though there has been a large increase of landing areas (75%), fishing vessels (35%), and fishers (235%). Consequently each fisher has experienced a large decrease in the fish catch. The increased use of destructive fishing practices such as dynamiting is destroying the marine ecosystem and seriously threatening the capacity to obtain sufficient marine products to feed the growing population.

Constraints

Over-fishing in inshore waters and inadequate law enforcement in preventing the use of destructive fishing gear and techniques has reduced fish catch.

Policy Statement

To develop artisanal fisheries in a sustainable manner in order to increase fish catch.

Policy Strategies

- (i) Impart research knowledge to the commission responsible for fisheries.
- (ii) Increase community awareness on the need for sustainable fishing and conservation practices.
- (iii) Publicise the fisheries policy and legislation.
- (iv) Revive and encourage, through community participation, traditional fisheries management practices.

- (v) Encourage fishers to operate in offshore fishing grounds by providing credit.
- (vi) Fund research and surveys for carrying out fish stock assessment in collaboration with internal and external institutions.

2.4.2.2 Fishing Vessels

Objective

To promote the artisanal fishers to use larger seaworthy vessels to enable them to fish offshore grounds.

Issue

There is a need for larger seaworthy vessels to fish offshore grounds

Zanzibar fishers, to a large extent, are seen to be very poor. Their daily fishing practices are supported by the use of very small vessels that can operate only within inshore territorial waters catching small fish for their own use and income.

The fishing industry is operating below its potential. The use of only small vessels has constrained the wider possibilities for fishery development and employment within the industry. This situation has also depleted inshore stocks and left the offshore grounds with relatively untapped resources.

Constraint

Artisanal fishers lack capital to purchase larger vessels to move to offshore grounds.

Policy Statement

The Government will promote the use of larger vessels to fish offshore.

Policy Strategies

- (i) Encourage credit institutions to provide loans for the purpose of building bigger fishing vessels.
- (ii) Encourage artisanal fishers to form their own associations in order to pool capital and accumulate resources necessary for investment in offshore fishing.

2.4.2.3 Acquisition of Raw Materials

Objective

To ensure the availability of affordable fishing materials for fishers.

Issue

The cost of fishing equipment is very high compared to fishers economic capability

The cost of fishing equipment is comparatively high and fishers are confronting problems beyond their control. As they are operating in inshore grounds, where the potential yield of fish is low, their financial returns are low to the extent that the purchase of appropriate gear that would raise their living standard is practically impossible.

Constraint

Many fishers earn little income and cannot invest in advanced technologies for fishing.

Policy Statement

The Government will promote the sustainable development of artisanal fisheries.

Policy Strategies

- (i) Encourage offshore fishing.
- (ii) Promote the establishment of fisher's associations for easy provision of extension services, building awareness and for pooling resources for investment.
- (iii) Promote the private sector, NGOs and financial institutions to provide affordable credit to fishers.

2.4.2.4 Industrial Fisheries

Objective

To exploit offshore resources in order to raise the economic well being of fishers, raise the nutritional status and contribute to foreign exchange earnings.

Issue

Industrial fisheries have not been developed

Since inshore territorial waters are depleted because of over-fishing, there is a need to exploit offshore waters in order to develop the fisheries sector in general.

Constraint

Lack of capital and expertise on the local fishers has prevented the exploitation of deep-sea resources.

Policy Statement

The Government will promote offshore fisheries.

Policy Strategies

- (i) Issue licences to local and foreign vessels in deep sea fishing through appropriate authorities.
- (ii) Collect information on the catch and fishing operations of licensed vessels, and disseminate such information for assessing the performance of the sub-sector.
- (iii) Monitor and regulate offshore fishing by taking into consideration stock migratory grounds.

2.4.2.5 Misallocated Credit Facilities

Objective

To ensure that credit facilities promote Maximum Sustainable Yield (MSY).

Issue

Credit facilities are not sufficiently directed to reducing over-fishing, and assisting fishers increase their livelihood

In attempting to raise fish catches, a balance between resource potential and fishing effort is necessary. These are important considerations that should determine the nature of credit given. To reduce or prevent over exploitation of fishing grounds, prior information on the potential of fish stock and level of fishing efforts are crucial in order to ensure sustainable management.

Constraint

MSY is yet to be determined particularly for offshore fisheries. This is usually a costly exercise but the information can be very important for a rational development of fisheries.

Policy Statement

To consider the MSY of the resource or fishing ground before licensing new vessels or fishing gear. A precautionary principle will be used.

Policy Strategies

- (i) Undertake a survey to establish MSY.
- (ii) Ensure availability of credit for fishing gear.
- (iii) Take cautious decisions on licensing when information on MSY is absent or inadequate.

2.4.2.6 Fishing Gear

Objective

To stop the use of destructive fishing gear and techniques in artisanal fisheries.

Issue

Use of destructive fishing gear and techniques in artisanal fisheries

The fisheries sector in Zanzibar has been affected by over exploitation and abuse of marine resources. A serious decline of coral reefs from dynamiting, and the use of dragging gear has led to an alarming deterioration in the fishing industry such that fish stocks have become scarce in the inshore grounds. The use of poisonous substances for fishing has also aggravated the destruction of marine habitats.

Constraint

There are no surveillance facilities to monitor the destruction of the marine ecosystem and no efforts to enforce the fisheries laws.

Policy Statement

To eliminate the use of destructive fishing gear and techniques.

Policy Strategies

- (i) Build community awareness on the harmful unsustainable impact of using destructive fishing gear and techniques in the aquatic environment.
- (ii) Identify and prohibit the possession and use of all destructive fishing gear and techniques.
- (iii) Monitor and inspect all imported fishing gear in order to enforce the ban on prohibited equipment.
- (iv) Involve fishers' associations in the monitoring and reporting on the use of destructive fishing gear.
- (v) Enforce fisheries legislation through undertaking surveillance and ensuring regular patrols of fishing grounds.

2.4.2.7 Conflicts

Objective

To ensure the fishing communities live in harmony.

Issue

There is an increasing trend of fisheries conflicts among the villages

The growing trend of conflicts between villages is caused by social, environmental and even political factors. The depletion of marine resources in certain areas influence fishers to move to other potential areas, while differences in the use of fishing gear and methods are other major causes of conflicts between villages. Measures to suppress the situation through local authorities have been taken. However, they have had very little impact. There is a need to educate the community on the consequences of using unauthorised fishing gear and methods.

Constraints

The increasing number of resource users with differing interests and their inherently competitive behaviour in tandem with laxity of law enforcement are engendering destructive conflicts.

Policy Statement

The Government will take measures to address, resolve, and reduce fisheries conflicts.

Policy Strategies

- (i) Promote greater awareness among fishers on the issues that cause conflicts and make use of traditional methods of solving problems.
- (ii) Involve community groups and/or fishers associations to enforce relevant laws and regulations.

- (iii) Promote the establishment of by-laws to guide local fishing.

2.4.2.8 Export of Fisheries Resources

Objective

To increase exports of marine resources.

Issue

There is little export of marine resources other than seaweed. Previously, seashells and sea cucumbers were important but they are no longer abundant and export volumes have fallen

Growth in marine exports greatly depend on exploiting the resources from the relatively untouched offshore fishing grounds.

Constraints

There is little attention given to the promotion of marine export products apart from seaweed.

Policy Statement

The Government will encourage the export of fisheries resources while ensuring that the marine protein consumption of Zanzibar people is not reduced.

Policy Strategies

- (i) Increase the range and diversity of marine products and by-products through raising research and awareness of fishers.
- (ii) Encourage offshore fishing by large fishing vessels.
- (iii) Ensure quality control in order to meet standards in the external market in an administratively efficient manner.
- (iv) Facilitate the establishment of privately owned export companies.

2.4.2.9 Aquaculture

Objective

To increase the production of seaweed, cultured finfish, crustacean and mollusc species to complement the declining production from capture fisheries.

Issue

There are few aquaculture activities apart from seaweed farming, whose marketing system is inefficient

Promotion of fisheries through aquaculture has been concentrated on seaweed while little attention is given to other products. The production of other aquaculture products is inhibited by lack of expertise and financial resources.

Constraints

There are no surveys made to identify good fish farming sites. Special expertise for fish farming is crucial to embark on the exercise.

Policy Statement

To promote and diversify output and marketing of aquaculture products while ensuring environmental conservation.

Policy Strategies

- (i) Conduct surveys and research in order to identify farming sites for different aquatic species to be cultured.
- (ii) Educate local communities and assist them to enter mixed aquatic farming.
- (iii) Encourage the local communities to establish small ponds for fish farming.
- (iv) Encourage the farming of oysters and cockles.
- (v) Continue to promote seaweed farming by putting emphasis on improved farming practices.
- (vi) Ensure the existence of a transparent free marketing system for seaweed.
- (vii) Conducting research for seaweed culture species.
- (viii) Impart basic aquaculture skills throughout the rural communities in collaboration with seaweed companies.
- (ix) Ensure that there are regular studies on environmental impacts of aquaculture activities.
- (x) Introduce reliable methods for acquiring information on price, size of markets and their potentials for seaweed.

2.4.2.10 Storage Facilities

Objective

To establish adequate cold storage facilities.

Issue

Cold storage facilities are lacking

Presently, there are no established storage facilities for marine products. Fishers are obliged to use their own cooling plants or refrigeration, which are costly, inefficient and do not guarantee that fish are frozen under the proper conditions. This restricts the distribution, preservation and price of marine products. The establishment of storage infrastructure is crucial in order to develop the fishing industry to its full potential.

Constraint

There are no investments made in the fisheries sector to expand cold storage facilities.

Policy Statement

To encourage the establishment of storage facilities for marine products.

Policy Strategy

Provide incentives to attract investors interested in establishing cold storage facilities for marine products.

2.4.2.11 Economic Status of Fishers

Objective

To improve the economic conditions of fishers.

Issue

Most artisanal fishers are entangled in a vicious cycle of poverty

Many Zanzibar citizens depend on fisheries for part of their daily income. The fishing equipment used are outdated and they do not produce sufficient output to satisfy their basic needs and they are left in a permanent state of under-development.

Constraint

Local fishers do not have enough capital to buy necessary equipment to fish offshore grounds.

Policy Statement

The Government will seek to uplift the status and living conditions of artisanal fishers.

Policy Strategies

- (i) Provide training and extension services in the use of different fishing techniques for offshore fishing ground.
- (ii) Establish Fish Aggregate Devices (FAD) and artificial reefs.

2.4.2.12 Conservation

Objective

To promote the conservation of the marine environment.

Issue

Degradation of marine and fresh-water environmental quality

Zanzibar people's lives and economy depend heavily on seashores, as well as marine resources. The beauty and productivity of these natural resources must be sustained. It is necessary to take measures now to conserve the marine environment.

Constraints

There is no collaborative management in enforcing fisheries laws and sufficient environmental conservation education to the community.

Policy Statement

The Government will seek to arrest degradation, and conserve the quality of the marine and fresh water environment.

Policy Strategies

- (i) Provide an effective environmental conservation education programme.
- (ii) Promote community participation in managing and conserving aquatic resources.
- (iii) Establish strong collaboration among the institutions involved in law enforcement.
- (iv) Ensure effective enforcement of fisheries legislation.
- (v) Legislate against all activities leading to degradation of the quality of the aquatic environment and develop effective programmes to monitor, control and provide surveillance of the same.

2.4.2.13 Integrated Coastal Zone Management

Objective

To establish harmony between institutions involved in using coastal zone areas.

Issue

There is no holistic approach in managing coastal zone areas to avoid user conflicts

The new agricultural policy would allow for a holistic approach to resource management. Coastal resources cannot be managed in isolation. Institutional linkages are important to the diversity and ecological interdependencies of coastal resources. The most promising way to contain social and environmental impacts is to adopt an integrated approach to coastal resource management.

Constraint

There is a lack of integration of cultural values in management, knowledge sharing and sense of ownership.

Policy Statement

The Government will facilitate co-management of coastal zone areas to ensure sound management practices and sustainable coastal environment.

Policy Strategies

- (i) Impart environmental knowledge to the local communities.
- (ii) Adopt practical linkages and co-ordination in an integrated approach to coastal management by institutions involved in coastal zone areas.
- (iii) Institute management plans, which will cater for the multiple use of the coastal zone ecosystems.

- (iv) Adopt contingency planning to arrest disastrous incidences.
- (v) Respect zoning on co-existing disciplines operating on the coastal zone areas.
- (vi) Ensure proper treatment of sewage systems.

2.5 Trade, Marketing and Prices

Objective

To improve market efficiency through expanding marketing infrastructure and appropriate regulations in order to encourage private sector involvement in production, processing and provision of market services.

Issue 1

Marketing systems for agricultural commodities are disorganised and market infrastructure and facilities are inadequate

Marketing systems for agricultural commodities are not properly organised. Although wholesaling takes place at central markets and landing sites, farmers and fishers are not always assured of a market for their produce. Market infrastructure and facilities for storage are not well developed.

Issue 2

There are complex export procedures, which are time consuming and involve financial costs

Export procedures for agricultural products include a number of steps, which involve different authorities. These procedures cannot be conducted in parallel, as approved documentation from each authority is needed before the next authority can be approached.

Issue 3

The operations of wholesale and retail markets for agricultural commodities are not properly regulated

The distribution system has created room for intermediate traders to buy products at cheaper prices from agricultural producers and sell at exorbitant prices.

Constraints

There are no guidelines regulating the local markets. Market information is lacking. There is currently no institution with the mandate to control the marketing of agricultural commodities. Facilities for storage and packaging for perishable agricultural products are inadequate and tools for checking quality of agricultural products are lacking.

Policy Statements

- (i) To provide an enabling environment for private sector participation in the trade and marketing of all agricultural commodities.
- (ii) To improve market infrastructure for both internal and external markets.
- (iii) To streamline export procedures that will encourage and promote increased exports of agricultural commodities.
- (iv) To formulate regulations and guidelines that will govern wholesale and retail markets for agricultural commodities.

Policy Strategies

- (i) Improve market infrastructure such as roads, transport, markets and communication systems to ensure smooth movement of agricultural products from production areas to the final markets, both internally and externally.
- (ii) Create and enforce regulations, marketing procedures and guidelines for the operation of wholesale and retail markets for agricultural commodities in order to ensure improved and fair competition.
- (iii) Promote private sector participation in the production and provision of market services.

2.5.1 Input Markets

Objectives

- i) To liberalise the markets for agricultural inputs and services.
- ii) To ensure availability, timely distribution, and delivery of agricultural inputs and services.

Issue

Inadequate availability of inputs and services

Increased agricultural output requires adequate and timely delivery of agricultural inputs and services. Inadequate availability of these inputs and services have contributed much to low productivity in agriculture.

Constraints

There is inadequate supply of agricultural inputs and services. These inputs and services are expensive and unaffordable to smallholders. The Government is currently not capable of providing these inputs adequately and in time due to budget limitations, and subsidisation of inputs and services inhibit participation of the private sector in the input markets.

Policy Statement

To create a conducive environment for the private sector to trade in agricultural inputs and services.

Policy Strategies

- (i) Regularly review the required inputs and farm implements for tax reduction in order to improve availability and timely distribution.
- (ii) Gradually reduce subsidies on fertilisers, chemicals and seeds to encourage private sector participation.
- (iii) Liberalise markets for inputs and agricultural services.

2.5.2 Quality Control and Standardisation

Objectives

- (i) To improve the quantity and quality of agricultural products for which the country has comparative advantage.
- (ii) To establish mechanisms for quality control and inspection for both export and imported products in order to maintain product quality and safety.

Issue

Poor enforcement of quality for both exports and imported products

The quality of the produce is, among other factors, very important in influencing the price of agricultural commodities. At present, few marketed commodities are checked for quality. There are also few quality controls on imported agricultural products due to inadequate capacity for checking of goods particularly canned and all agro-industrial processed products.

Constraints

There is no market capacity to handle large volumes of perishable products during peak seasons. Facilities for produce inspection, storage, packaging and transport are inadequate. There is lack of knowledge of post-harvest techniques, preservation and processing of agricultural commodities.

Policy Statements

- (i) To strengthen and improve institutional capacity and procedures for quality control and produce inspection.
- (ii) To promote private sector investment in post-harvest handling and storage for agricultural commodities.
- (iii) To improve post-harvest techniques, preservation and processing of agricultural commodities.
- (iv) To establish and enforce appropriate handling procedures in order to safeguard the quality of products and safety of food.

Policy Strategies

- (i) Strengthen institutional capacity to establish and enforce quality control.
- (ii) Ensure produce inspection for both local and export markets.
- (iii) Encourage private sector investment to provide facilities for storage, handling and packaging.
- (iv) Establish and enforce regulations for handling agricultural, livestock and marine products.

- (v) Improve technology in areas of inspection, handling and packaging through appropriate research and staff training.

2.5.3 Agro-processing

Objective

To promote primary (farm level), and secondary processing.

Issue

There is limited agro-processing and agro-industrial development

Zanzibar has little experience in agro-processing. On the other hand there are increasing volumes of imported processed products into the Zanzibar markets signifying increased local demand. The potential agricultural products for processing are fruits, spices, cereals, livestock and marine resources.

Constraints

Lack of appropriate agro-processing technologies and inadequate knowledge of primary processing on the part of farmers.

Policy Statement

To promote and strengthen private sector investment in agro-processing.

Policy Strategies

- (i) Promote both foreign and local investment in agro-processing and agro-based industries for the potential agricultural products.
- (ii) Establish an institution to research on on-farm level (primary) processing technologies for agricultural commodities with emphasis on major export crops.
- (iii) Provide incentives to encourage small scale and medium-scale enterprises to engage in agro-processing.
- (iv) Promote community based associations to participate in primary processing such as grading, and packaging of agricultural products.
- (v) Encourage the private sector to develop and market post-harvest technologies, which will reduce crop losses.

2.5.4 Market Information and Statistics

Objective

To improve data collection, analysis and dissemination of information to all stakeholders.

Issue

There is lack of market information

The collection, processing and analysis of data are currently not well organised. Consequently, there is inadequate market information for use by various market participants.

Constraint

There is lack of institutional arrangements and capacity for collecting and processing data as well as distribution of market information.

Policy Statement

To strengthen and improve capability for the collection and analysis as well as dissemination of market information.

Policy Strategies

- (i) Establish an efficient mechanism for data collection and processing.
- (ii) Strengthen market research.
- (iii) Build capacity of staff responsible for data collection, analysis and dissemination of information.
- (iv) Promote participation of the private sector in trade fares for product promotion.
- (v) Join global networking for world market information.

2.5.5 Clove Marketing

Objectives

- (i) To improve the performance and increase efficiency in clove trade and marketing.
- (ii) To increase the contribution of cloves to the national economy by improving exports of quality cloves.

Issue

Government should retain its monopoly in clove trade so as to counteract the effects of price fluctuations and uncertainties in the world market for agricultural commodities

Since clove is the major export crop of Zanzibar and contributes the largest share in the foreign exchange earnings, the government should exercise its monopoly in the clove trade and marketing to minimise the negative effects of risks and uncertainties of a free market system characterised by profit maximisation motives.

Under such circumstances, complete privatisation of clove trade and marketing will not be conducive to the development of the clove industry, as prices of agricultural commodities in the world market tend to fluctuate. Marketing system driven by profit maximisation motives will not be beneficial to the economy, farmers and other stakeholders in the event of a slump in the world market prices.

If the need arise, the confinement of clove trade and marketing to the government should not deter limited liberalisation. Under regulated monopoly mechanism Zanzibar State Trading Corporation (ZSTC) could maintain its position as a major buyer of cloves and private traders allowed to join in under set regulations and stipulated quantities.

Constraint

Price fluctuations for agricultural commodities in the world market and a free market system driven by profit maximisation motives.

Policy Statement

To maintain governments' monopoly in clove trade and marketing with increased efficiency so as to ensure comprehensive development of the clove industry.

Policy Strategies

- (i) Commission a detailed study on clove marketing and trading in order to clearly identify constraints, opportunities and options for production, marketing, other uses of cloves, and servicing of the clove industry.
- (ii) Adopt measures to gradually liberalise clove marketing in line with recommendations of the study.

2.5.6 Livestock Marketing

Objective

To provide safe livestock products to the public.

Issue

The marketing system for livestock and livestock products is weak

The marketing channel of livestock products from producers to consumers is not developed. Commodities are often not hygienically handled and selling points are not modern.

Constraints

Low enforcement of sanitary legislation, and ignorance in handling livestock products for sale, make the marketing system weak.

Policy Statement

To upgrade and modernise the marketing of livestock products.

Policy Strategies

- (i) Enforce sanitary laws.
- (ii) Train people in handling livestock products.
- (iii) Enforce use of proper transport for distribution of livestock products to markets.

2.5.7 Fisheries Marketing

Objective

To promote efficient marketing and distribution channels.

Issue

There are no properly organised market distribution channels

Fish is the principal cheap source of protein for low-income earners in Zanzibar. There is a need to ensure that fish is distributed to the consumer in a fresh and hygienic condition.

Constraints

The marketing system does not give the fishers an equitable benefit for their product and instead it greatly benefits the middlemen. Also there are no sanitation facilities in the markets.

Policy Statement

To promote modern, efficient and hygienic methods of marketing fish products.

Policy Strategies

- (i) Formulate and implement marketing and distribution plans in collaboration with all stakeholders involved in the fish trade.
- (ii) Encourage the private sector to invest in fish processing and distribution.
- (iii) Reorganise the auction procedures.
- (iv) Promote the use of modern fish containers.
- (v) Establish and improve fish landing sites, marketing and sanitary facilities.
- (vi) Take measures to ensure that fish distributors operate under hygienic conditions.

2.5.7.1 Seaweed Marketing

Objective

To promote the production and marketing of seaweed in order to increase income of farmers.

Issue

The seaweed farmer is getting less than 10 percent of the Free on Board (FOB) price

Constraints

Information on the nature of the export market for seaweed is lacking and a few foreign companies control the seaweed market, each with a monopoly in one geographical location.

Policy Statement

To improve, upgrade and expand the marketing of seaweed in an equitable manner to ensure a transparent free marketing system.

Policy Strategies

- (i) Study the world market for seaweed in order to acquire relevant information for policy intervention.
- (ii) Assist seaweed farmers to culture seaweed species with a higher value and a larger world market.

3.0 GOVERNMENT SUPPORT TO PROMOTE EFFECTIVE PARTICIPATION OF DIFFERENT STAKEHOLDERS

Without the co-operation and participation of the farming community and the private sector as a whole, the Government's agricultural sector policy goals and objectives cannot be achieved. In recent years the contribution of community-based organisations and non-government organisations to development activities has increased.

The Government is fully committed to a consultative and participatory approach in search for, and in the implementation of policies. The complexity of agricultural development requires inter-disciplinary and cross-sectoral approaches, which will be fostered through partnership between all stakeholders involved in the agricultural sector.

3.1 The Role of Government

The main role of the Government in agricultural development is to create a favourable macro-economic policy environment, to facilitate the process of policy formulation and its management, and to provide agricultural support services required for increasing and sustaining agricultural productivity, real farm incomes, and food security. The Government will respond to the challenge of making agriculture a profitable and competitive economic activity, capable of providing food security, higher incomes and employment opportunities to a large proportion of the population.

The Government will ensure that agricultural policy goal and objectives are effectively integrated within an overall conducive macro-economic policy environment. Government development efforts will, therefore, be limited to the provision of public services such as research and extension, which cannot be provided by the private sector. On the other hand, the Government will promote and support initiatives of other stakeholders, such as the private sector, NGOs, and farmer's associations to provide essential agricultural development services, particularly those involving the supply of farm inputs and marketing of farm produce.

3.2 Support to the Private Sector

The private sector consists not only of various entrepreneurs and traders but also farmers, fishers and livestock keepers. The Government recognises the essential role of the private sector in achieving agricultural growth and prosperity through investment in production, marketing and processing. Effective private sector participation will be stimulated through provision of a favourable economic environment, promotion of agricultural technology and collection and dissemination of information to reduce the risks inherent in agricultural investment. If well coordinated and stimulated the private sector could provide opportunities for employment creation in both rural and urban areas.

3.3 Support to Farmers' Associations

Farmers' Associations are important grass-root organisations. They bring economies of scale to credit institutions, some extension services, input suppliers and buyers of agricultural produce, since these do not have to deal with each individual farmer. On the other hand, the smallholders can combine their forces in order to have more bargaining power when dealing with input suppliers and buyers of their produce. Because of these vital functions of the farmers associations, they should be given the opportunity to realise their potentials in production, processing, marketing and credit mobilisation.

In this regard, the Governments' main strategies for promoting farmers' associations will include adoption of measures to:

- facilitate the formation and growth of democratic producer and marketing associations through creating awareness on the benefits of such associations;
- ensure that farmers' associations are registered and governed by law;
- put in place conducive legislation on credit, investment, marketing and employment;
- develop a curriculum for training programmes for youth members in collaboration with other stakeholders;
- encourage and facilitate the active participation of women in farmers' associations on the basis of their needs and voluntary decision;
- encourage commercial associations to maintain financial discipline, particularly the need to have their accounts audited regularly;
- train and advise association members on the need for activism to safeguard their interests, particularly the need for regular accounts, audits and elections;
- encourage associations to set aside funds for demand-driven research and extension to improve the quality of commodities and production techniques;
- support the associations in their efforts to preserve the environment;
- establish and strengthen a Department for Farmers' Association within the MANREC, and;
- train association members and employees in order to improve their managerial capacity.

The MANREC, through the proposed Farmers' Associations Department, will perform the following functions:

- assist in the formation of farmers' associations;
- assist in the registration of such associations;
- assist with record keeping, inspection and auditing of accounts;
- foster and facilitate training;
- assist in project identification, feasibility studies, research, market surveys and other technical assistance;
- facilitate information sharing among farmers' associations; and,
- assist in conflict resolution.

3.4 Support to Women and the Youth

Women play an important role in the Zanzibar agricultural sector. They provide about 70 percent of the agricultural labour and produce about 70 percent of agricultural output. Despite this large contribution to the agricultural sector, women's access to productive resources, marketing services and credit is severely lacking. In order to tap their potential, the Government will adopt measures to: expand and improve women's education; ensure equitable access to production inputs, marketing services and credit; and, target its extension, research, training and technology to rural women farmers.

The youth are playing an insignificant role in agriculture. This is because agricultural incomes are not only low but also seasonal. On the other hand urban life is considered to be more attractive. The youth have high expectations of employment opportunities and the resulting incomes in the urban areas.

The real situation, however, is that employment generation by non-agricultural sectors has not met the aspirations of the youth. This situation is likely to remain so for many years. Agriculture and agro-based industries will remain the main source of employment for the youth. The Government, in collaboration with other stakeholders, will create a conducive environment for attracting the youth into agriculture and agricultural related activities.

The strategies for involving the youth in agriculture will consist of the following:

- improving standards of living in the rural areas through increased income generation from agricultural production, marketing and processing;
- promoting and facilitating active participation of NGOs in establishing agriculture related projects for the youth, and;

- preparing and implementing primary, secondary and post-secondary curricula that emphasises relevant aspects of agriculture, livestock, fisheries, agricultural, marketing and environmental conservation.

3.5 Support to NGOs

The Government has recognized NGOs as potential partners for their significant role in the provision of knowledge and mobilisation of resources at the grass roots level. It is because of this recognition that in 1995 the Government enacted a law for the registration of NGOs. It was for the same reason that a special department, dealing with NGOs matters, has been established and put under the Chief Ministers' Office.

The Government has taken measures to provide an enabling environment for NGOs intervention. NGOs are now represented at national consultations and are playing their role as intermediaries between the Government and grass root organisations.

NGOs in Zanzibar have a huge task in playing an effective role to supplement the Government's efforts for development. The best strategy is for agriculture-related NGOs to direct their efforts to facilitating and supporting community-based groups that are working to bring development to their respective localities. The Government will encourage NGOs to make serious efforts to solicit funds from local sources for the purpose of achieving sustainable human development.

The roles of NGOs can be made more effective if there is a strong partnerships, in bringing about agricultural development, between the Government and Civil Society Organizations. The linkage between the Government and NGOs could offer significant opportunities for transferring government lessons to a broad range of NGOs. The transfer process could also generate important resource mobilisation. Government support is also needed in providing practical training in project formulation, participatory rural appraisals, market analysis and other areas in which NGOs are traditionally weak.

3.6 Relationship with the International Community

One of the stakeholders in the Zanzibar agricultural sector is the international community, particularly multilateral and bilateral donors and international agricultural institutions. These have played an important role in providing financial and technical assistance to support Zanzibar's agricultural development. The relationship between the Government and the international institutions that have supported and/or continue to support the agricultural sector provide an opportunity for strengthening future partnerships.

The Government will take measures to expand and strengthen partnership with donors and international agricultural institutions. The main areas of donor's and international agricultural institution's support that the Government will seek are institutional strengthening and transfer of technology and skills. The strategies for attracting international community into supporting agricultural development will include: effectively and efficiently using international assistance in line with the goal and objectives of agricultural development; ensuring transparency in the use of international assistance, and; implementing sound sectoral and macro-economic policies that conform to broader characteristics of a free market economy.

4.0 RECOMMENDED PROGRAMMES AND PROJECTS FOR FUTURE AGRICULTURAL INVESTMENT

4.1 Background

It is necessary that the outlined sector objectives be linked to the policies and resource allocation in order of priority. This is to ensure that the meagre resources at hand are directed to those projects and programmes, which are consistent with macro and sectoral objectives and policies.

Priority areas should address the foreseen core functions of the MANREC, which are:

- Research and management activities
- Extension services
- Crop and plant protection services
- Policy management
- Data and information services
- Human resource development
- Regulatory services
- Development of irrigation services
- Natural resources conservation

Based on the above core functions, the priority areas can be listed as:

- Rehabilitation of extension services
- Improvement of foundation seed farms
- Rehabilitation of research services
- Improvement of input supply services and delivery systems
- Reduction of post-harvest losses
- Improvement of irrigation systems
- Strengthening soil, fresh water, and marine resources conservation measures
- Strengthening planning and policy analysis
- Rehabilitation of Kizimbani Agricultural Research and Training Station
- Improvement of agricultural statistics
- Rehabilitation of quarantine facilities
- Rehabilitation of animal health and production centres and dips
- Improvement of A.I services

4.2 Project Screening

Projects, which are to be implemented directly by the MANREC, should be categorised as service projects.

The core functions of the MANREC are to be used as the fundamental criteria for screening projects. Based on the detailed functional review of the MANREC, the summarised core functions of the MANREC can be identified as follows:

- Policy management

- Policy implementation and regulatory function
- Support services
- Agricultural information system/services
- Sector monitoring and reviewing.

Other criteria also considered in this process include the need for consistency with current sector policies and strategies, availability of project write up, and availability of counterpart local funds for projects that will require donor funding.

On the basis of the above criteria, the projects/activities can be rated as high, medium and low priority activities.

High Priority Activities

High priority will be given to activities in the following areas:

- Extension services
- Research
- Crop-livestock integration
- Crop and plant protection
- Food Security
- Seed production
- Policy analysis and management
- Small-scale irrigation
- Data and information
- Environmental protection
- Disease control
- Monitoring, control and surveillance
- Rearing of new poultry species
- Nursery for pasture and legume fodder crops
- Improvement of dairy through Artificial Insemination
- Dairy goat introduction and improvement
- Animal health and nutrition management
- Agricultural sector management
- Early warning and crop monitoring
- Water harvesting
- Aquaculture
- Investment in deep sea fishing

Medium Priority Activities

- Training
- Rehabilitation of livestock quarantine area in Unguja and establishment of quarantine facilities in Pemba
- Rehabilitation or establishment of quarantine facilities

Low Priority Activities

- All commercial activities executed by the MANREC and/or by the parastatals under the MANREC. Subsequently these activities should be given zero priority in view of the Government's commitment to pull out of commercial activities.

4.3 First Priority Projects/Programmes

The following projects/programmes are recommended to be given first priority (short-term, during 2000/2001 - 2002/2003).

4.3.1 Planning and Administration

- Agricultural Sector Management Project (ASMP)

4.3.2 Research and Extension services

- Pemba Small Scale Irrigation Project (**ongoing**)
- Zanzibar Smallholder Support Project (**ongoing**)
- Smallholder Rice Irrigation Project (**ongoing**)
- Increasing Food Security in Zanzibar (Livestock) (**ongoing**)
- Strengthening the Plant Protection Division (**ongoing**)
- Menai Bay Conservation Project (**ongoing**)
- Coconut Research Project (**ongoing**)
- Jozani - Chwaka Bay Conservation Project (**ongoing**)
- Post Tse-tse Fly Eradication Livestock Development (**ongoing**)
- Bio-fertiliser for Increasing Crop Production (**ongoing**)
- Establishment of Early Warning and Crop Monitoring Unit
- Seed Multiplication Farm
- Crop-livestock Integration
- Food Security Programme (Rice Irrigation)
- Formulation of Clove Development Programme
- Development of Non-traditional Export Crops
- Ox-training Centres
- Animal Health
- Cassava Mealybug Control
- Integrated Crop and Pest Management
- Development of the Fisheries Sector through Offshore Fishing
- Dairy Development
- Livestock Investigation Centre
- Soil and Water Conservation
- Nursery for Pasture Crops
- Assessment of Fish Resources in Offshore Fishing Grounds
- Participatory Extension Framework
- Extension Support for Seaweed Farmers

4.4 Medium Priority Projects/Programmes

- Kizimbani Agricultural Research and Training Station
- Farming Systems Research
- Quality Control and Standardisation
- Development of Appropriate and Sustainable Water Harvesting Techniques
- Human Resources Development
- Marine Conservation Project
- Infrastructure Development of Fish Landing Sites

4.5 Future Investments

New projects are proposed in the following areas:

- Livestock research centre
- Research and management to establish fishing effort at maximum economic yield
- Identification of suitable sites for fish, shellfish, crab and prawn farming
- The feasibility of fish farming at domestic level
- The potential for bivalve farming (oysters, cockles, mussels)
- Dairy goat introduction and improvement
- Animal health and nutrition management
- Rodent management

5.0 RECOMMENDATIONS FOR INSTITUTIONAL AND LEGISLATIVE REFORMS

5.1 Introduction

When the Government phases out its role in production and marketing and when the private sector assumes these functions, a new institutional structure may have to be developed. Development of such an institutional structure might increase the quality, quantity and efficiency of production in the various sub-sectors and could be one of the sources of agricultural growth. The task of developing a new institutional structure for the agriculture sector will be undertaken after the Government adopts the new proposed policy.

The effective implementation of the new proposed agricultural policy would depend greatly on strong and appropriate institutional and legal framework. On the basis of this linkage between policy implementation on the one hand, and institutional and legal framework on the other, the following are some of the recommendations for institutional and legal reforms.

5.2 Cross-sectoral Reforms

5.2.1 Institutional Reforms

5.2.1.1 Savings and Credit Institutions

The Government will eventually pull out of providing credit to farmers. It is therefore imperative for the Government to design a strategy for the promotion of credit institutions. The intervention by government will aim at

- increasing lending by the formal sector and facilitate access by agricultural producers and traders in the formal banking institutions.
- promoting the establishment of non-bank rural financial institutions, rural savings and credit schemes based on mutual/joint guarantees of credit groups.

Initiatives for the promotion of the above credit institutions can be taken by various institutions such as the People's Bank of Zanzibar (PBZ), NGOs, Ministry of State-Women and Children and the MANREC. In order to promote financing mechanisms for the agricultural sector, the MANREC will establish an information source on credit flows from the banking sector to the agricultural sector and the establishment and volume of new credit mechanisms.

Lending to smallholders is costly due to high transaction costs associated with the small amount of individual loans and lack of collateral. Using credit groups, as intermediaries between the smallholders and the financial institutions, will lower the transaction costs for the latter and promote the availability of credit funds to the smallholders.

5.2.1.2 Agricultural Environment Monitoring Unit

Environmental protection is a prerequisite for sustainable agricultural production. In view of this linkage it is recommended that the MANREC establishes a unit to co-ordinate with other responsible institution for ensuring the protection of the environment.

5.2.1.3 Inter-ministerial Policy Co-ordinating Unit

This will be an important institution to promote co-ordination between agriculture and other sectors with close linkages. The objective is to ensure agriculture receives adequate support from other sectors in terms of policy strategies.

5.2.1.4 Department of Farmers' Associations

Create an effective department of farmers' associations that will promote the formation and registration of such associations and assist in project identification, feasibility studies, research, market surveys and other technical assistance.

5.2.2 Legislative Reforms

- Appropriate legislation should be put in place to establish the institutions proposed above.
- Review the legislation for Kizimbani Agricultural Research and Training Station.

5.3 Crop Sub-sector Reforms

In order to improve crop production and crop diversification, the following institutional and legislative changes are proposed.

5.3.1 Institutional Reforms

5.3.1.1 Clove Monitoring Unit

Due to the relative importance of cloves to the Zanzibar economy and the mandate of MANREC in the development of clove cultivation, there is a need to establish a specific and effective unit to monitor the comprehensive development of the crop.

5.3.1.2 Zanzibar Agricultural Research Council

ZARC should function as an apex autonomous body with adequate statutory powers.

5.3.1.3 Rice Production Unit

Rainfed rice and rice irrigation units should be merged to bring about a breakthrough in rice production.

5.3.1.4 Commission for Cash Crops and Fruits

The Commission for Cash Crops and Fruits should be dissolved and its functions should be transferred to the respective Commissions of the MANREC.

5.3.2 Legislative Reforms

- Appropriate legislation should be put in place to facilitate the institutional reforms proposed above.

5.4 Livestock Sub-sector Reforms

5.4.1 Institutional Reforms

5.4.1.1 Livestock Research Institute

Establish a specific institute to conduct livestock research.

5.4.1.2 Veterinary and Livestock Extension Services

Liberalise veterinary and livestock extension services.

5.4.2 Legislative Reforms

- Appropriate legislation should be put in place to facilitate the institutional reforms proposed above.
- The major areas requiring legislative reforms are sanitary conditions. These include:
 - quality control of livestock products and by-products.
 - trade of livestock and livestock products in the country.

5.5 Fisheries Sub-sector Reforms

5.5.1 Institutional Reforms

It is proposed to establish the Commission of Fisheries as currently the fisheries section is overshadowed by other sub-sectors.

5.5.2 Legislative Reforms

The current fisheries legislation for Zanzibar is inadequate to address the proposed policies. It is proposed to have a complete review of fisheries legislation.

5.6 Marketing and Trade Reforms

5.6.1 Institutional Reforms

5.6.1.1 Marketing and Economic Research Department

Establish a strong Marketing and Economic Research Department in the MANREC in order to strengthen data collection, analysis, interpretation and dissemination.

5.6.2 Legislative Reforms

- privatise markets for agricultural inputs.
- regulate imports of pesticides and agro-chemicals.

6.0 PROPOSALS FOR MONITORING AND REVIEWING POLICY

An effective policy monitoring and review system requires performance indicators, data and information, and capacity to monitor and review policy with the objective of identifying constraints and the adoption of remedial measures to remove the constraints.

Some of the performance indicators, which will be employed, are

- Agricultural GDP linkage with overall growth
- Tracking and monitoring the growth of GDP per capita
- Agricultural productivity of food crops, cash crops, livestock and fisheries products
- The quality of agricultural products
- Performance of traditional exports (cloves, copra etc)
- Share of per capita income earned from agriculture
- Use of organic and inorganic fertilisers
- Gender equity ratio
- Quality of the environment
- Investment in agriculture
- Self-sufficiency in food
- Trade
- Non-farm incomes

The current situation regarding data and information availability is extremely weak. The collection of data on production and marketing is unclear. As a result, there is hardly any information on output productivity of the major agricultural products, market prices for inputs and outputs etc. Such information is crucial for monitoring and improving upon the sectors' performance.

The MANREC will improve data collection at all levels (national, regional and district) co-ordinate information services within the MANREC and with other relevant sectors and will analyse, interpret and widely disseminate such information. The MANREC will use the available data and information for continuous policy analysis and development. All the relevant data and information on production, prices, supply, demand and regulatory constraints will be timely published, in order to promote efficient production and marketing.

The MANREC will make use of the information, obtained through monitoring and evaluation, to develop and update agricultural sector policies and strategies. In so doing, the MANREC will articulate the sector's priorities within the national policy formulation process and translate macro-policy reforms on agriculture.

The MANREC will continuously examine the major growth prospects for the agricultural sector and include the findings in the development of new policies and strategies. A specific strategy will be developed for capacity building in the area of policy monitoring and review.

The MANREC will progressively take the necessary measures to bring its human and material resources into optimal balance. Staff performance will be improved through training, better equipment and a more attractive remuneration.

Hence the main elements of the strategy regarding strengthening the MANREC include, rationalisation of tasks and functions of the MANREC, review of functions, structure and staffing levels of the MANREC, and improvement of motivation and performance of the staff.