

AFRICAN DEVELOPMENT FUND

UNITED REPUBLIC OF TANZANIA

TANZANIA AGRICULTURAL SECTOR REVIEW

**Agriculture and Rural Development Department, ONAR.1
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Executive Summary

Sector Review Objective:

This review of the agricultural sector in Tanzania was undertaken to provide sector specific information on development conditions and the constraints and prospects for Bank assistance in the sector. It is an input to the 2002-04 CSP for Tanzania and a base for agricultural programme formulation and assistance in the country.

The Socio-economic Environment:

The population of Tanzania is estimated at 33 million people with an annual growth rate of 2.8%. Poverty is pervasive and results in seasonal food insecurity for about 25% of households. Tanzania is ranked 156 from 174 countries in the UNDP development index. Since poverty in Tanzania is predominantly a rural phenomenon and since more than 85% of the rural labour force are engaged in agriculture and agriculture-related activities, sustainable and broad-based growth in agriculture holds the key to the success of the Poverty Reduction efforts of the GOT.

Agriculture and the Economy:

The agricultural sector is composed of the Crops, Livestock, Fisheries and the Forestry and Wildlife sub-sectors. Agriculture contributes about 50% of GDP and more than 50% of export earnings. It is of vital importance to the national economy. Crop production accounts for close to 75% of agricultural GDP, livestock 13%, and forestry, hunting and fishing 6% each. Small-scale hoe-based farming is by far the most important production system, undertaken by about 4 million farm households. Over 90% of the cropped area is under this system. The main food crops are maize, rice, sorghum/millet, bananas, cassava, wheat and beans. Maize is by far the most important crop covering about 57% of the area, grown by 82% of farmers and sold as a cash crop by 26% of farmers. Coffee and cotton are the most important export products, but cashew, tea, tobacco and cloves (Zanzibar) are also important. In recent years, so called 'non-traditional exports', including horticultural crops, cut flowers and seaweed (Zanzibar) have rapidly increased in importance. Fish products, especially perch filets from inland waters have also become an important part of the export economy

Broad Sector Development Constraints:

The development constraints to the Tanzanian economy as a whole have been identified as the prevalence of weak infrastructure; high incidence of poverty; the lack of export commodity diversification; inadequate private sector development that was accentuated by central government dominated policies involving economic controls and direct state investments in all sectors of the economy from the mid-1960s to the mid-1980s; and weak institutional capacity for policy and project implementation, especially at the district level. The lead ministries in the agricultural sector suffer from a number of constraints, including inadequate manpower and skills for policy formulation and analysis, monitoring and enforcing policies, standards and regulations. Labour is an important constraint and a constraint that is becoming more stringent with the impact of HIV/AIDS. Strategies and programmes to accelerate growth are urgently needed to improve human welfare, assure social and environmental stability.

Sector Institutions:

Tanzania has undertaken a reform of the main public institutions in the agriculture sector with the creation of a Ministry of Marketing and Co-operatives (MCM), Ministry of Water and livestock Development (MWLD) and the parent Ministry of Agriculture and Food Security (MAFS). Fisheries, Forestry and Wildlife Departments are located in the Ministry of Natural Resources and Tourism (MNRT). An on-going process of decentralisation has placed implementation of all activities in the Zonal and District Offices of the Regional administration and local Government in the President's Office (PO-RALG), which is where the entire sector comes together. Agriculture is

not a Union issue, the mainland and Zanzibar have separate administrations. This review examines the mainland and overall issues in the main text and has Zanzibar specific details in annex 1. The lead ministries on the mainland, together with donors and with broad based participation, have produced the Agricultural Sector Development Strategy (ASDS) which is the key document used in this review.

Agricultural Sector Development Strategy:

The Government has moved from the goal of promoting agricultural *development* to facilitating agricultural *growth* based on private investment. This is not just a change of wording, but a conceptual shift from attempting to move all farmers forward in a more or less egalitarian way to creating an environment which will stimulate growth of private farming. In the context of Tanzania with only about 500 medium scale private farms and about 4 million small holders, of which about half are considered to be living below the poverty line, there is the risk that in pursuing this strategy the poorest of the poor may be left behind. The balance between fair treatment of all sections of the population and economic returns of national importance needs to be found and enshrined in policy. The Government of Tanzania (GOT) has placed agriculture as one of the priority sectors for its poverty reduction efforts. A Poverty Reduction Strategy Paper (PRSP) has been prepared and is being implemented according to the Highly Indebted Poor Countries Initiative. The strategy contained in the ASDS was found to be consistent with the Bank Vision. This document reflects the change in ethos from a socialist system based on government control to that of limiting government intervention to five broad priority areas:

- 1 Strengthening the institutional framework;
- 2 Creation of a favourable climate for commercial activities;
- 3 Clarifying public and private roles in support services;
- 4 Improving net farm returns through marketing inputs and outputs; and
- 5 Mainstreaming planning for agricultural development in other sectors

Crops Sub-sector Production Constraints:

Farm models show that current profitability is low and that the use of inputs is only economic for a minority of farmers. Marketing inefficiency is considered to be an important factor contributing to low farm gate prices. Farmers lack support in terms of information on different technologies: in some cases this is due to poor extension coverage, in others the profitability of the possible options has not been researched adequately. Lack of timely availability of improved seed, a relatively low cost input, is another important constraint. The lack of appropriate support for extensive pastoral systems is particularly acute. Large areas are climatically marginal for farming, an increase in drought prone soils due to degradation, and a possible increase in extreme weather patterns in recent years has exacerbated this. Development of irrigation and water harvesting schemes are considered essential for improving crop reliability and food security. Post-harvest losses are high, estimated in the region of 50-60% for fruits and vegetables, 30% for maize and 12% for rice. These high levels of losses severely limit the ability of poor households to secure a stable income from production. Financially, lack of access to production credit and capital and heavy taxation continues to be a disincentive in the agricultural sector. Currently farmers and traders have to meet a plethora of taxes and fees and levies at village, district, regional and national levels. These include crop cess, education fund, development levy, national social service fund, advertising tax, to name a few. The ministries are actively engaged in dialogue to rationalise tax collection at all levels.

Livestock Development Challenges.

Traditionally, cattle keeping was based on an extensive pastoral system. Herders migrated over wide areas following the availability of grazing. A variety of factors such as increasing livestock numbers, population growth and the expansion of the arable area into grazing areas has led to the collapse of this system and it is now estimated that only 14,000 households or 0.004% of

households depend on livestock keeping alone. The pastoralists have adapted to the change by adopting mixed farming. Gender studies indicate that women may shoulder a disproportionate amount of the extra work involved. The data from MWLD suggest that cattle numbers are increasing steadily at 2% per annum. There is movement of pastoralists from the overgrazed North towards the South and West. There are conflicts of interest between farmers mainly dependent on pastoralism and the expansion of arable farming and other forms of land use. Tanzania is thought to have a comparative advantage in cattle production, but endemic diseases mean that live animals cannot be legally exported. The main cross border trade is to Kenya, but this market has been closed from time to time due to non-adherence of traders to legal requirements. Internal trade is said to be constrained by high taxation and cumbersome bureaucratic procedures. The traditional dairy sector accounts for about 80% of milk production, this is characterised by low yields per cow and per hectare but low production costs (only about 25% that of intensive production). Production appears to be keeping pace with population growth. However, the remoteness of production areas means that little of the production can be marketed. Intensive dairy farming accounts for only 2% of cows but nearly 20% of milk output, most of these are small private farms of 10-50 cows, but about a dozen large scale farms exist with about 10,000 cattle in total. Most of these are state farms in the process of privatisation. Growth of this sector has been buoyant at about 6% per annum and milk imports have dropped from 20 million to 10 million litres. Despite the success of the sector milk consumption is below that of neighbouring countries. About 33% of farm households keep small ruminants, mainly goats. These are increasing rapidly (3.7% per annum), now estimated at 13 million head. They are mainly kept with hardly any external inputs, thus investment costs are minimal. Back yard poultry are also kept by at least 30% of farm households and this system accounts for about 60% of the national poultry stock and provides 100% of the eggs and poultry meat consumed in rural areas and about 20% of poultry meat consumed in urban areas. Intensive and semi-intensive systems in urban areas provide the rest. Projects over the years have introduced large numbers of improved multi-purpose breeds to rural areas and the resulting local races are considered to be productive birds. Marketing improvements may make it worthwhile controlling epidemic diseases to increase output and incomes, especially of rural women. Bank support programmes should be made to address animal health problems and marketing.

Fisheries Development Concerns:

Fisheries contribute about 6% of agricultural GDP or 2.3% of total GDP. Inland fisheries have been much more important than marine. The structure of exports has changed rapidly since ecological change in Lake Victoria resulted in a boom in the Nile perch fishery during the second half of the 1980s. Previously inland fisheries only contributed 4% by value but this is now more than 80%, the remainder being mainly commercial marine shrimp fishing by 16 licensed boats. Together they constitute 8% of total exports. Controversy over the Nile perch fishery, with its negative socio-economic effects on poorer sections of the community and doubts about the sustainability of the current harvest continues despite its export contribution. However, local artisanal fishing still makes up 80% of the national fish catch and 85% of the total catch is consumed locally. It is estimated that 33% of national protein intake is from fish. The conservation of wetlands and the mitigation of adverse environmental effects affecting fisheries are of major importance in the sustainability of production.

Forestry and Wildlife Management:

Forest conservation and management contribute significantly to GDP, food security and rural employment. Thus, the sustainable management of forests that is the base of renewable natural resources production will remain vital to poverty reduction. The current problems of forest conservation and management include the lack of infrastructure such as access roads and housing in parks; the lack of financial resources to control illegal exploitation; the acute shortage of resource management specialists; political instabilities in neighbouring countries that cause influx of refugees in protected forests; the poor participation of the private sector in the development of the

resource base and the related industries that can relieve the burden of the public sector. Future support to the Agricultural sector of Tanzania needs to provide adequate resources for the forestry and the wildlife management sub-sectors. The on-going Selous Game Reserve Management Project financed by the Bank is proving to be a success story. There is thus a need to replicate a project of this nature to strengthen the sub-sector infrastructure, management capability and promote the participation of communities in forest reserve and parks management.

Development of Irrigated Agriculture:

Virtually all areas of Tanzania are subject to a dry season between May-June and October-November when rainfed production is not possible. The incidence of pests and diseases is lower during the dry season, labour availability is higher and rural roads are in better condition at this time. It is thus wise to take advantage of the potentials of irrigated farms in the dry season. It must be noted also that increasing population pressures have begun to constrain water availability in most traditional irrigation areas. The usual response of the communities affected has been to increase irrigation intervals or reduce areas under command to the detriment of crop production. The main constraints facing the irrigation sub-sector include the lack of relevant, location-specific hydrological data for irrigation planning, a continued emphasis on sophisticated, expensive and uneconomically viable irrigation projects, poor project planning including lack of beneficiary consultation and response during project preparation, under-resourcing of irrigation services at national, zonal and regional levels, and inadequate support to farmer organisations in operation and maintenance. Irrigation can serve two purposes: crop production during the dry season under irrigation allows for cash crops to be grown where the provision of water is controlled, allowing for best responses to inputs, better quality and quantities of produce and use of family, and other labour at a time when most farmers cannot utilise the land they occupy. Irrigation also reduces the risk of crop failure in the rainy season - mid-season droughts are becoming increasingly common and the provision of water supplies for supplementary irrigation of food crops will result in higher yields and better quality production thus increasing household food security and making better use of land and water resources. It is thus important for Bank strategic planning for the sector to take account of the potentials of irrigation development in the agricultural sector of Tanzania. TAF grants for preliminary studies are recommended.

Environmental Impact of Agricultural Production:

It is often assumed that Tanzania has an abundant natural resource base which can be readily developed. Whilst this is true nationally, it must also be said that in many areas there is evidence of land scarcity and intense competition for access to resources. Environmental degradation is also reducing available land and forests. Rapid deforestation is the greatest threat to sustained production in the renewable natural resources sub-sectors (forestry, wildlife and fisheries). The current rate of deforestation, 130,000 ha. per annum is associated with agricultural land expansion to meet the food requirement of a fast growing population, urbanization, livestock grazing, forest fires, industrial timber harvesting and the reliance of about 98% of Tanzanians on wood energy for cooking. Deforestation impinges on agricultural land productivity through erosion, flooding and land degradation that lead to loss of soil fertility, destruction of watersheds, siltation of dams and irrigation systems and destruction of hydrological balance. For fish production, deforestation is a threat to natural ecosystems including the mangrove that support freshwater fish production. About 80% of Tanzania's fish production comes from freshwater fisheries. For wildlife production, luxuriant ecosystems that are rich in plant species will remain critical to the protection of many endemic and rare wildlife species in Tanzania. Wildlife is the base of the growing tourism in Tanzania. Apart from the foreign exchange that accrues from Tourism, it is a sector that promotes country image. In addition to the direct benefits from the outputs of the natural resources sub-sectors, some of the sub-sectors enhance the profitability of the enterprises in the transport and construction, and art and crafts sectors. The need to protect the Tanzanian environment is thus imperative for the sustenance of agricultural production.

Gender Issues:

Integration of women into the sub-sector has been slow due to customary practices, land tenure acts and sector development policies. Despite providing most of the farm labour, women receive a discouragingly small share of the proceeds. The gender focal points in ministries responsible for the promotion of the integration of women into the sector are currently weak. Future Bank support to the sector needs to provide for Government's effort at mainstreaming gender into the sector, particularly through building of the capacity of gender focal points both in central and local government levels. The serious lack of female agricultural extension staff and female trainees in agricultural colleges should also be urgently addressed. Encouraging full participation of all sections of the community in economic activities, particularly women and youth, is an important goal that needs to be pursued for the motivation needed for enhanced food production. It was observed during the review that Government has started addressing some critical gender issues. For example, the GOT has recently adopted a new land policy that has improved the access of women to land. The new land act is also to spur private sector investment in agricultural production by making land titles useable as collateral in agricultural finance. The government has also embraced quotas for women in political decision-making, particularly at lower local government structures. In District Councils for example, at least 15% of appointed members must be women. The seats allocated to women at the village government level is a minimum of 30%.

Bank Experience in the Sector:

The main strength of the Bank Group is in the provision of capital sums for discrete investments aimed at poverty reduction. However, due to the inability of the Bank to effectively follow-up on training of project management teams on Bank disbursement and procurement procedures, earlier Bank projects in the agricultural sector were characterised with slow disbursement and unimpressive implementation results due to country technical capacity to implement. To-date, the Bank lacks a permanent presence in Tanzania and relies upon Government for follow-up actions even under situations where resources are lacking in the Ministries to provide adequate follow-up. Project management problems are made worse by the rapid mobility of competent staff. However, in recent times, increases in Bank supervision missions and in country training in project management including procurement and disbursement have improved in the past two years. It must be emphasised that capacity building for the implementation of Bank projects in country will remain important for Bank success. In spite of earlier failures, on-going ADB intervention in the management of the Selous Game Reserve and its buffer zones is proving to be a success.

Proposals for Bank Strategic Planning:

Consideration of Bank Vision, the agriculture and rural development policy and strategies and the ASDS leads to the following areas of convergence being identified:

Raising farm level profitability by improving marketing through rural roads and other capital investments in synergetic partnership with GoT and other donors providing long term extension and other follow-up services.

Raising farm level profitability by investments in measures to ensure the reliability of cropping, such as irrigation, water harvesting and conservation measures. However, only if on-going support to farmers is assured by either partnership with other donors or establishment of a competitive grant system to provide such services for a minimum of 5 years after construction work is finished. In the case of irrigation investment decisions should await the completion of the National Irrigation Master Plan.

Supporting research and extension aimed at raising farm level profitability through competitive grant systems through which service providers, governmental and private sector, can be funded.

Raising household income by improving natural resource management including forestry for wood and non-wood products, building on the Selous Game experience and moving into non-protected areas.

Capacity building, directed at measurable, discrete goals at household level. Key areas are developing capacity at farmer and LGA levels, and at national level for monitoring of policy formulation and programme implementation.

Raising household incomes by measures aimed at ensuring fair participation of all sectors and both sexes of society in both production and consumption is an important goal of policy development, to which the Bank should contribute by participation in discussion fora. The focus should be on the design and implementation of programmes aimed at improving agricultural productivity. More attention for crop specific strategies should be considered especially in identifying and providing the right fiscal environment for a range of profitable technologies for differing farm types. Research is required on the profitability of various technologies and enterprises at the farm level.

Implementation of agricultural development through District Agricultural Development Plans (DADP) is hampered by the fact that capacity to produce participatory DADP is practically non-existent. It is at this level that all the elements essential for improving the lot of the rural poor including women come together. This is an area requiring large investment in capacity building at local and farmer level.

The importance of off-farm incomes, mainly based on exploitation of local natural resources, indicates that developments in more efficient and sustainable use of these resources could be as important as developing agricultural productivity to improving rural livelihoods. Wildlife reserve buffer zone management is an example of this. Extension of a sustainable rural livelihoods approach to natural resource conservation throughout the country is essential in the long term.

On the basis of the above analysis and GOT's sector priorities as enunciated in the ASDS, the Bank Group support to the agricultural sector in Tanzania in the near future should be focused on the following areas:

- (i) Institutional strengthening and capacity building, aimed at productivity increases at the farm level, improving planning capacity at the local level and supporting monitoring and policy formulation capacity at the national level;
- (ii) agricultural marketing and agro-processing, aimed at adding value to production and enhancing household returns, facilitating off-take and regional and international trade; and
- (iii) natural resource management for sustainable development, with active participation of the local communities.

In pursuing the above strategies, over and above developing capacity at the local level, more sector specialists would also need to be trained to develop the needed skills for project planning, monitoring and management. Bank financed projects/programmes would also promote women integration into national extension system and senior cadres of agricultural sector management. Agricultural Research Institutes especially in the Zanzibar and urgently need rehabilitation for effectiveness. Improvement of rural roads is important to marketing and profitability of family investment. Bank investment in other complementary sectors of the economy that have direct impact in rural welfare such as the health, education and energy sectors will remain important in

ensuring the availability of skills in rural areas to manage growth technologies and agricultural sector development as a whole.

The guiding principles of these strategies are summarised below:

- A sector-wide approach (in contrast to the programme/project approach), based on full national ownership of the process, aimed at food security and improvement in beneficiary incomes;
- Forging strategic partnership with the GOT and other development partners to articulate and implement well defined sector programmes and projects with clearly defined targets and measurable performance indicators;
- Continuous policy dialogue with GOT to deepen macro-economic adjustment and structural reforms to create a conducive environment for private sector participation in upstream and downstream agricultural activities;
- Capacity development towards empowering local beneficiaries by giving them the voice and the means to set their own priorities and manage their own development in line with the Country's PRSP.
- Promoting decentralised management, and effective MIS development;
- Mainstreaming gender and environmental protection in agricultural development;
- Promoting new initiatives, such as private sector lending window, and the micro-finance program under AMINA; and
- Supporting interventions that increase agricultural productivity per unit of resource used and halt practices that "mine" the resource base beyond its regenerative capacity.

TABLE OF CONTENTS¹

1.	INTRODUCTION AND BACKGROUND	1
1.0	Background and Rationale	
2.0	Specific Objectives of the Sector Review	1
3.0	Methodology of Review and Report Organisation	2
2.	THE AGRICULTURAL SECTOR	3
2.1	Sector Composition	3
2.2	Physical and Socio-economic setting of the sector	4
2.3	Economic Assessment of the Sector	7
3.	PUBLIC SECTOR INVESTMENT AND SUPPORT SERVICES	19
3.1	Scope and Magnitude of Investment	19
3.2	Research	20
3.3	Extension Services	21
3.4	Rural Finance	22
3.5	Rural Roads	23
3.6	Water Supply	24
3.7	Health	24
3.8	Education	25
3.9	Energy	25
3.10	Role of the Private Sector	26
4.	SOURCES OF GROWTH IN THE SECTOR	27
4.1	Increasing crop productivity	27
4.2	Irrigation	28
4.3	Expanding Market Opportunities	28
4.4	Growth of Agribusiness	28
4.5	Increasing Livestock Productivity	28
4.6	Forestry	29
4.7	Fisheries	29
4.8	Increasing off-farm incomes	29
4.9	Increasing the Productivity of labour	29
5.	DONOR SUPPORT AND EXPERIENCE IN THE SECTOR	30
5.1	Scope of Donor Support	30
5.2	Observations on Trend of Donor Involvement	31
5.3	The experience of the Bank in the Sector	32
6.	PROPOSED BANK STRATEGY FOR THE SECTOR	34
6.1	Review of GOT's Agriculture Sector Priorities	34
6.2	Focal Areas for Bank Group Assistance	37
6.3	Strategic Options for Bank Group Interventions	38

¹ This Report is based on the findings of the Sector Review Mission that visited Tanzania in November, 2001. The mission was led by Mr. Chiji Ojukwu (Chief Agricultural Economist) and comprised of Messrs. Charles Omoluabi (Senior Forestry Officer), Abiodun Falusi (Policy Analyst/Consultant), and Peter Bisset (Agriculturist/Consultant); Mmes Aminata N'janko N'jie (Poverty Expert) and Gisela Giesler (Gender Expert). Contributions were received from Mr. Peter Mwanakatwe (Principal Country Economist). All enquiries should be directed to Mr. L.I. Umeh, Manager, Agriculture and Rural Development Division.1, North, East and South.

7.	CONCLUSIONS AND RECOMMENDATIONS	40
7.1	Conclusions	40
7.2	Recommendations	41

FOLLOW-UP ACTION	42
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BIBLIOGRAPHY	43
---------------------	----

Tables

1. Recent Policy Planning Process for Poverty Reduction in Tanzania	2
2. Tanzania Agriculture Sector Comparative Advantage Indicators	27
3. Resource Requirement for Critical Agricultural Services	38
4. Resource Allocation, Resource Requirement and Resource Gap	38

Boxes

1. Selected Indicators of Agricultural Sector Performance	9
2. Policy Environment for Water and Sanitation	24
3. Policy Environment for Health	24
4. Policy Environment for Education	25

Annex 1:	Map of Tanzania
Annex 2:	Zanzibar – Agriculture Status
Annex 3:	Roles and Responsibilities of Public Institutions serving Agriculture in Mainland Tanzania
Annex 4:	Trends in Selected Macroeconomic Indicators
Annex 5:	Natural Resource Base
Annex 6:	Wildlife, Forestry and Environmental protection
Annex 7:	Foreign trade, Production and Export statistics
Annex 8:	Bank Group Interventions in the Agriculture Sector in Tanzania
Annex 9:	Tanzania socio-Economic Indicators
Annex 10:	Mission’s Terms of Reference

Acronyms

ADB	African Development Bank
ADF	African Development Fund
AEWA	African-Eurasian Water Bird Agreement
AMINA	ADF Micro-finance Initiative for Africa
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASDS	Agricultural Sector Development Strategy
ASDP	Agricultural Sector Development Programme
ASMP	Agriculture Sector Management Programme (WB funded)
ASPS	Agricultural Sector Programme Support (DANIDA funded)
CBD	Convention on Biological Diversity
CBO	Community based Organization
CFSP	Comprehensive Food Security Programme (Zanzibar)
CITES	Convention for International Trade on Endangered Species of Fauna and Flora
CMS	Convention on Migratory Wild Animal Species
COSTECH	Committee on Science and Technology
CSRP	Civil Service Reform Programme
DAC	Development Assistance Committee (OECD)
DADP	District Agricultural Development Plan
DALDO	District Agriculture and Livestock Development Officer
DANIDA	Danish International Development Agency
DFI	Direct Foreign Investment
DFID	Department for International Development (UK)
DMT	District Management Team

DPMC	District Programme Management Committee
DPSSD	District Private Sector Capacity Development
DRC	Domestic Resource Coefficients
DRDP	District Rural Development Programme
EAC	East African Community
ESAP	Economic and Social Adjustment Programme
EU	European Union
EZCORE	Eastern Zone Client Oriented Research and Extension
FAO	Food and Agriculture Organization
FASWOG	Food and Agricultural Sector Working Group
FAIDA	Financial and Advisory Institutions for Development Assistance (SNV)
FINNIDA	Finnish International Development Agency
FSR	Farming Systems Research
GNP	Gross National Product
GDP	Gross Domestic Product
GoT	Government of Tanzania
GTZ	German Agency for Technical Co-operation
HIPC	Highly-Indebted Poor Countries
ICZM	Integrated Coastal Zone Management (Zanzibar)
IMC	Inter-ministerial Committee
IFAD	International Fund for Agricultural Development
IFPRI	International Foundation for Policy Research Institute
IPM	Integrated Pest Management
JICA	Japan International Co-operation Agency
LGA	Local Government Authority
LGRP	Local Government Reform Programme
LITI	Livestock Training Institute
LMNRP	Local Management of Natural Resources Programme
LSU	Livestock Unit
MAC	Ministry of Agriculture and Co-operatives
MAFS	Ministry of Agriculture and Food Security
MATI	Ministry of Agriculture Training Institute
MCDWAC	Ministry of Community Development, Women Affairs and Children
MCM	Ministry of Co-operatives and Marketing
MFI	Micro Finance Institution
MHAS	Ministry of Home Affairs
MIS	Management Information System
MLP	Market Linkage Promotion and Support
MoF	Ministry of Finance
MNRT	Ministry of Natural Resources and Tourism
MTEF	Medium Term Economic Framework
MTER	Mid-term economic review
MWLD	Ministry of Water and Livestock Development
NAEP	National Agricultural Extension Programme, Phase
NALERP	National Agricultural and Livestock Extension Rehabilitation Programme
NAPCD	National Action Plan on Combating Desertification
NARS	National Agricultural Research System
NEMC	National Environmental Management Council
NCU	National Co-ordination Unit
NGO	Non-Government Organization
NORAD	Norwegian Agency for Development
NRM	Natural Resources Management
PASS	Private Agricultural Sector Support
PC	Primary Cooperative
PCG	Participatory Farmer Group
PIDP	Participatory Irrigation Development Project
PMO	Prime Ministers' Office
PMU	Project Management Unit
PO-RALG	President's Office-Regional Administration and Local Government
PRA	Participatory Rural Appraisal
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper

RDP	Rural Development Programme
RDS	Rural Development Strategy
RELO	Research-Extension Liaison Officer
RFSP	Rural Financial Services Programme
SACA	Saving and Credit Association
SACCO	Savings and Credit Co-operative Organisation
SADCC	Southern Africa Development Countries Corporation
SAPU	Strategic Analysis and Planning Unit
SCAPA	Soil Conservation and Agro-forestry Programme in Arusha
SDPMA	Smallholder Development Programme In Marginal Areas
SDSP	Smallholder Dairy Support Programme
SFI	Soil Fertility Initiative
SG2000	Sasakawa Global 2000
SHERFSP	Southern Highlands Extension and Rural Financial Services Project
SIDA	Swedish International Development Authority
SIDO	Smallholder Irrigation Development Organisation
SME	Small and Medium Enterprises
SMS	Subject Matter Specialists
SNV	Netherlands Development Organisation
SOFRAIP	Soil Fertility Recapitalisation and Agricultural Intensification Project
SPFS	Special Programme for Food Security (FAO)
SSDDP	Private Sector Dairy Development Programme
STABEX	Stability of Export Earnings Facility of the EDF
SUA	Sokoine University of Agriculture, Morogoro
T&V	Training and Visit
TA	Technical Assistance
TADC	Tanzania Agribusiness Development Centre
TAMSDEP	Tanzania Agricultural Marketing Systems Development
TARP-II	Tanzanian Agricultural Research Programme, Phase II
TAS	Tanzanian Assistance Strategy
TCCIA	Tanzania Chamber of Commerce, Industry and Agriculture
TFC	Tanzania Federation of Co-operatives
TIC	Tanzanian Investment Centre
TIMC	Technical Inter-ministerial Committee
TLMP	Tanzania Livestock Marketing Project
TNEMC	Tanzania National Environmental Management Council
TPSF	Tanzania Private Sector Foundation
UA	Unit of Account
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNOPS	United Nations Office for Project/Programme Support
URT	United Republic of Tanzania
USAID	United States Agency for International Development
USD	United States Dollars
UNSO	United Nations Sudano Sahelian Office
VFO	Voluntary Farmer Organizations
WB	World Bank
WFP	World Food Programme
WTO	World Trade Organisation
WUA	Water User Association(s)
ZIPA	Zanzibar Investment Promotion Agency
ZTC	Zonal Technical Committee

1. INTRODUCTION AND BACKGROUND

1.1 Background and Sector Overview

1.1.1 The agricultural sector in Tanzania is composed of the Crops, Livestock, Fisheries and the Forestry and Wildlife sub-sectors. The sector is of vital importance to the national economy and contributes about 50% of GDP and more than 50% of export earnings. Crop production accounts for close to 75% of agricultural GDP, livestock 13%, and forestry, hunting and fishing 6% each. The Government of Tanzania (GOT) has identified agriculture, health (primary health), education (basic education), water, roads (rural roads) as the priority sectors for poverty reduction as well as the cross-cutting themes of governance, gender and HIV/AIDS. Poverty is predominantly a rural phenomenon and more than 85% of the rural labour force are engaged in agriculture and agriculture related activities. Major sector development constraints include weak institutional capacity and inadequate manpower for policy and project implementation, especially at the district level. Strategies and programmes to accelerate growth are urgently needed to improve human welfare, assure social and environmental stability.

1.1.2 Tanzania's main development goal, since independence in 1961, has been to improve the welfare of its population and promote equity. Its initial human development efforts were indeed impressive with a dramatic improvement in access to social services. However, towards the end of the 1970s and early 1980s the financial crisis resulting from inappropriate macro economic policies and external oil shocks weakened these efforts. As the economy declined, Tanzania was unable to sustain the impact of its investments in human capital and physical infrastructure. In 1986, Tanzania embarked on macroeconomic, structural and institutional reforms to promote growth and poverty reduction. The initial focus of the reform was on price liberalization including exchange rate depreciation and interest rate deregulation. Though these reforms drastically improved production incentives and led to a revival in economic growth, the impact on poverty reduction was small. The limited progress in poverty reduction is largely correlated with slow growth in the agriculture sector, despite the many years of donor support. About 50% of Tanzanians are considered to be poor, and more than 30% live in abject poverty (NHBS Survey, 2000).

1.1.3 Current reform efforts of the Government to develop policies, strategies and programmes are aimed at tackling the problem of poverty. Recent efforts pursued under relatively more participatory approaches and using complementary policy planning initiatives include the Vision 2025; the National Poverty Eradication Study (NPES); the Technical Assistance Strategy (TAS); the Poverty Reduction Strategy Paper (PRSP); the Rural development Policy (RDP) and the Rural Development Strategy (under preparation). Tanzania's PRSP is a three-year strategic plan, which is based on the National Poverty Eradication Framework and which focuses on three overarching objectives, namely to: (i) reduce poverty; (ii) improve human capabilities, survival and social well-being; and (iii) contain extreme vulnerability among the poor.

1.2 Rationale and Objectives of the Agriculture Sector Review

1.2.1 Economic and Sector Work (ESW) provides analytically-based information about the development conditions, constraints and prospects for poverty reduction in Bank's member countries. The agriculture sector review (ASR) is being undertaken as part of the ESW aimed at identifying specific issues for sector policy dialogue and advice to the Government, as well as assisting to underpin the Bank's intervention in the sector. The review is also aimed at helping Government improve the design of projects and programmes in the sector, and thus ensure that the Bank Group interventions are effective in promoting growth in the agriculture and rural

development sector. This ASR has been based on current sector and analytical work already undertaken in Tanzania (see Bibliography). Based on the review of the existing information and discussions with stakeholders, the report is focused on the agriculture sector constraints, incidence of poverty, sector growth potentials, and priorities for Bank assistance in the country. The ASR is also intended to serve as an input to the 2002-2004 CSP for Tanzania. The decision to include the agriculture sector review for Tanzania in the 2002 work programme stemmed from the relative importance of the sector for poverty reduction which is the overarching goal of the Bank Group assistance to regional member countries; and also the sector's relative importance to the Bank portfolio in the country.

1.2.2 The main objectives of the sector review therefore are to:

- analyse the effects, general as well as sector-specific policies, on the agricultural sector;
- identify the major constraints to growth in the sector;
- investigate the output and employment potential, investment and recurrent expenditure requirements to achieve a growth rate of 5 percent over the medium term and beyond;
- analyse GOT priorities for the sector development and situate Bank Group assistance within this framework;
- provide a strategic framework for strengthening Bank's dialogue with GOT and other donors on agricultural development policy issues and country development programming; and
- contribute to an improved operational framework to support more effective investments for agricultural development.

1.3 Methodology of Review and Report Organisation

1.3.1 This review has depended mainly on existing Government and other donors' publications on the sector. The information in the publications which included policy and strategy papers were updated through direct interviews held with relevant institutions and agencies. Extensive consultations were held with the various government agencies in the lead ministries of Agriculture and Food Security; Co-operatives and Marketing; Water and Livestock Development; as well as the Ministry of Natural Resources and Environment. Consultations were also held with the Regional Administration and Local Government (Office of the President) and Co-ordination and Government Business (Prime Minister's Office), Ministry of Community Development, Women Affairs and Children, as well as with the donor community in Tanzania (namely, JICA, EU, DANIDA, FAO, USAID, UNDP, the Royal Embassy of the Netherlands and the Irish Aid). The NGOs and the civil society as well farmers groups, and the organised private sector were also consulted. Discussions were also held with relevant line ministries, financial institutions and the organised private sector in Zanzibar. A final stakeholders' workshop is being planned in May, 2002 as part of the consultative process.

1.3.2 The report is presented in seven chapters. In chapter one, the objective of the review and methodology employed is highlighted. Chapter two defines the components of the agricultural sector of Tanzania. The chapter also describes the socio-economic environment in which the sector operates and the importance of the sector in the overall economy. This chapter was concluded with the analysis of the trend of sector development policies since the mid 1980s when Government shifted from direct involvement in production to regulatory and facilitative functions. In chapter three, the extent of Government investment in supportive services is presented. The section also summarises the role being played by the private sector. Chapter four discusses the potentials and sources of growth in the sector. Chapter five is devoted to the analysis of the scope of donor support to the sector and the experience gained by donors in general. This chapter was concluded with the experiences gained through the intervention of the Bank in the sector. Chapter six proposes

areas of Bank Group interventions in the sector and the complementing strategies to be followed, while Chapter seven presents the conclusions and recommendations of the review.

2. THE AGRICULTURAL SECTOR

2.1 Sector Composition:

The agricultural sector in Tanzania is composed of the Crops, Livestock, Fisheries and the Forestry and Wildlife sub-sectors. Support to the sector in is undertaken through a number of line ministries: Agriculture and Food Security; Water and Livestock Development; Cooperatives and Marketing; Natural Resources and Tourism; and President's Office-Regional administration and Local Government. The roles and responsibilities of these ministries have been given in Annexes 3 and 6. The national agricultural research system includes zonal and specific commodity research stations and the Universities. A client-oriented approach has been established aimed at solving specific problems. Research/extension linkages are being implemented, together with the zonal management of the research agenda via COSTECH – a committees bringing together research, extension, local government and the private sector.

2.2 Physical and Socio-economic setting of the Sector

Natural Environment

2.2.1 The United Republic of Tanzania comprising the Mainland and Zanzibar lies on the east coast of Africa between 1° and 11°S latitude and between 29° and 40° E longitude. The land area is about 1 million km², including the offshore islands of Zanzibar, Pemba, and Mafia. Tanzania is bordered by Kenya in the north and shares Lake Victoria with Kenya and Uganda in the west. Tanzania has frontiers with Rwanda, Burundi, and Zaire in the southwest, and with Zambia, Malawi, and Mozambique in the south (see Annex 1 for Map of Tanzania)

2.2.2 The country is endowed with abundant natural resources including; large areas with suitable soils, relief and climate for agricultural production; inland lakes and rivers with high potential for fisheries, coastal fisheries; and wildlife and forest resources. In broad terms the following ecological zones can be delimited:

- Afro-alpine: This is about 1% of total area. It includes moorland and grassland, or barren land, above the forest line and has limited use and potential, except as water catchment and for tourism.
- The Humid to dry sub-Humid zone contains about 9% of the area. It is made up of forest-derived grasslands and bush. It is suitable for intensive agriculture, including pyrethrum, coffee and tea and livestock production
- 30% of the land area is made up of the Dry sub-humid to semi-arid zone. It contains variable cover of moist woodland, bush or savannah. The agricultural potential is high and large areas are under cropping and extensive grazing.
- The Semi-arid zone has 30% of area. The land has marginal crop potential limited to sisal or quick maturing cereals, carrying natural vegetation of *Acacia-Themeda* association but including dry *Brachystegia* woodland. This is a potentially productive but ecologically fragile environment that can support very extensive livestock production. Soil degradation is a serious risk.

- Arid: 30% of area: Unsuitable for cropping, except for limited areas with fertile soils and water-harvesting rainfall. It is typically used for grazing (over 4 ha is required per stock unit). Wild life is an important resource.
- Water features: 8% of area is covered by lakes and rivers and the country also has access to extensive marine resources.

2.2.3 Soils: drought prone sandy loams cover much of the country. Well-drained fertile soils of volcanic origin are found in the northern rift and in both southern and northern highlands. Black vertisols are widespread in river valleys and provide valuable dry season grazing or can be developed for irrigation. The soils on moderate to steep gradients on mountains and hills are highly susceptible to erosion.

2.2.4 Climate: Although low temperatures due to altitude may limit production of some crops or result in very slow growth rates (e.g. rice), the main climatic determinant for agricultural production is rainfall. The southern part of the country has a single rainy season called '*musimu*' (November to April) and the north-eastern highlands, Lake Victoria basin and coastal belt a bimodal rainfall divided into short rains '*vuli*' (October to December) and the long rains '*masika*' (March to June). The area under *musimu* has total annual rainfall ranging from over 1000mm to 600mm and rainfall is sufficient in the wetter areas for reliable cropping except during periodic droughts. The *vuli* season is generally suitable only for quick maturing crops. Areas with reliable bimodal rainfall and good soils are the high potential agricultural areas.

2.2.5 Zanzibar: comprises two sister islands Unguja and Pemba and a number of smaller islands. The total area of both islands is 2,643 km² (Unguja 1,658 km² and Pemba 985 km²) with a population of about 1 million. Dense natural forests once covered Zanzibar but only small remnants remain. The climate is equatorial with temperatures ranging from 20 –35°C. Rainfall, totalling 1500-1900mm is bi-modal and there is the possibility of dry periods in July/August and January/February. Much of the islands are covered by deep fertile soils suitable for plantation and food crops. Areas with shallow soils 'coral rag' support only temporary shifting cultivation and grazing lands. Hydromorphic soils in valleys are suitable for rice production.

Population and Poverty Profile

2.2.6 The population of Tanzania has been estimated at 33 million people in 2000 of which 49% are males and 51% females. The estimated growth rate is 2.8%. About 47% of the total population comprised children of less than 15 years of age. There are about 4 million farm households comprising a labour force of 16 million economically active persons. The population involved in agriculture has traditionally settled in areas suitable for crop production and mixed farming. Indigenous knowledge of trees and grasses was used as an indicator of land suitability. Today, rainfall and soil fertility are still decisive factors governing population distribution and density. About 10% of the country receives adequate rain (over 1000 mm per annum) and carries 60% of the population; 8% is fairly well watered and carries 18% of the population; 20% is poorly watered and carries 18% of the population; and 62% is poorly watered and carries 1% of the population. Thus, about four fifths of Tanzania's population today is concentrated on only one fifth of its land.

2.2.7 Tanzania is one of the poorest countries in the world. Its poverty is reflected in its low human development indicators. The 2001 Human Development Report (UNDP), ranked Tanzania 140 from 162 countries. Tanzania's ranking in terms of human development achievements has, in fact, been slipping in recent years, which is worrying. The most recent poverty assessment puts

43.1% of all Tanzanians (mainlanders) below the basic needs poverty line.² Poverty in the rural areas is much higher, 47% of the rural population cannot afford basic needs. In addition, about 23% of all Tanzanians are food poor, up from 16.4% in 1991/92, meaning that more people are now unable to secure their basic food requirements. In the rural areas, the proportion of the food poor has increased from 18.5% (1991/92) to 25.4% in 2000. Thus poverty in Tanzania remains overwhelmingly a rural phenomenon.

2.2.8 The gross secondary enrolment ratio is only 5.3%, among the lowest in Sub-Saharan Africa, while the adult illiteracy level, which was among the lowest in Sub-Saharan Africa has increased from 9.6% in 1986 to 27.2% in 1997. The majority of the poor lack the necessary skills to exploit economic opportunities and earn a decent living. Access to social services is also limited, particularly for the rural poor. It is estimated that only 49% of the population has access to safe water. Owing to poor living conditions, the majority of Tanzanians continue to suffer from preventable diseases such as malaria, tuberculosis, diarrhoea, water borne diseases and anaemia. The maternal mortality rate is over 530 per 100,000 births and the infant mortality rate is 77 per 1000 births respectively. Although these rates are lower than the average for Sub-Saharan Africa, reflecting past achievements, they are still high. The high morbidity rate in Tanzania has, in recent years been compounded by the AIDS epidemic. It is estimated that more than 2 million people have been infected over the last 20 years³. Reports from blood donors show a twofold increase from 5 to 10% from 1991 to 1999. The infection among pregnant women ranges from 20 – 24% in some urban areas and about 7 – 10% in many rural areas giving an average of about 12%. FAO⁴ has projected that about 13% of the agricultural labour force could be lost through AIDS between 1985 and 2000

Socio-political and Institutional Environment

2.2.9 Tanzania has embraced and practices multi-party participatory democracy. Officials are elected right from the President to the Village Councillor. At the centre is the Legislature (which passes Bills, which becomes Acts (when the President assents), the Executive and the Judiciary with clearly defined roles and powers. The Country is divided into 21 administrative regions and 113 districts of which 109 are rural.

2.2.10 There is a well-established public administration, an expanding private sector, and a substantial number of informal associations, community groups and non-governmental bodies.

2.2.11 From the late 1990s GOT began implementing a decentralisation policy for Government structures.⁵ District Councils are now making decisions on a wide range of issues, and planning and managing their own budgets and staff. Special committees have been established for social services, infrastructure, finance and administration, education and economic development (including agriculture). The District Councils receive support from: (i) technical officers assigned from line ministries; (ii) budget officers; and (iii) regional planning teams. Funds raised through local taxation are supplemented by a common fund financed through the national budget. The Regional Administration now holds responsibility for co-ordination, monitoring and evaluating district operations rather than the execution role they had before the local government reform. There

² Preliminary results of the 2000 Tanzania Household Budget Survey (HBS). As reported in the final Draft of the **Tanzanian Rural Development Strategy Document** (October 30, 2001).

³ URT *Status on HIV/AIDS in Tanzania* Consultative Group Meeting Dar-Es-Salaam September 2001.

⁴ FAO *HIV/AIDS a Rural Issue* Rome Italy 2001

⁵ The Local Government Reform Programme (LGRP) is one of the initiatives being undertaken by the GOT to reform the public sector.

is the need to include environmental management and women's affairs representatives among the committees to be established at the local council level

2.2.12 Though agriculture is basically a private sector activity, there are some key public institutions whose functions/activities impact on the sector. The key ones are the Ministries of Agriculture and Food Security (MAFS), Cooperatives and Marketing (MCM) and Water and Livestock Development (MWLD); the President's Office-Regional Administration and Local Government (PO-RALG) (and its regional secretariats).

2.2.13 The new administrative structure has led to changes in the roles and responsibilities to be undertaken by the sectoral ministries. While the sectoral ministries are now responsible for policy formulation, setting regulatory framework, issuing technical guidelines, determining minimum standards for service delivery, monitoring and evaluation, training and demand-driven research and dissemination of such research results to target groups; the local governments are expected to take a leading role in the provision of various services.

2.2.14 Agriculture is not a Union issue. Both Mainland and Zanzibar have separate ministries and independent authorities dealing with agriculture. Zanzibar has its own structures and development issues which are discussed in detail in Annex 2. Annex 3 gives roles and responsibilities of institutions in the sector.

Cooperatives

2.2.15 The history of cooperatives in Tanzania dates back to 1925 with the formation of Kilimanjaro Native Planters Association and the first Act in 1932 when the Cooperative Ordinance was issued. Following the Arusha declaration of 1967, the Cooperatives were seen as vehicle for socialist policies of the government. Since then there have been a number of reforms culminating in the 1997 Cooperative Development Policy in which the role of the government changed from active participant to being a facilitator and playing regulatory roles⁶. Agricultural cooperatives account for about 55% of all cooperative societies in Tanzania, with a membership of 382,500 and paid up capital of Tsh. 587.3 million. The overall co-operative structure recognises four tiers – primary societies, secondary societies (co-operative unions), apex societies and federation of societies. However in many areas such as coffee, cotton, tobacco and cashew, the apex level has never been formed. The Tanzania Federation of Co-operatives (TFC) was formed in 1994 in order to promote its affiliated societies, disseminate information, initiate education and training programmes and conduct research. The implementation of co-operative reforms under the 1991 Co-operative Act led to a reduction by almost half in the number of primary societies to just 4,919 in 1996 and a further drop to 4,538 in 1999. However at least 25% of the PCs are effectively dormant, and as much as 80% of the remainder operate only as agents for private sector traders. In contrast to the reduction in the number of PCs, the number of co-operative unions (CUs) has increased from just 27 in 1991 to 48 in 1999. They account for 94% of the total secondary co-operatives, with 97% of secondary society shares. The performance of the cooperatives has not been particularly positive, with its structures weakened under a liberalised economy, thus leaving the individual small farmer in a weak position. While the need for a collective organisation of small farmers is recognised as obvious, a doubt has been expressed as to whether formal cooperatives are the most appropriate mechanism to achieve this goal. A bottom-up approach to farmers organisation is seen as the one that is most sustainable.

⁶ For more details on evolution of Cooperatives, see Tanzania Agriculture Performance and Strategies for sustainable Growth, 2002.

Voluntary Farmer Organisations

2.2.16 There are beginning to emerge a number of Voluntary Farmer Organizations (VFOs) in many different forms and for different purposes, with the NGOs as the main driving force behind their creation. This recognizes the fact that farmers can benefit from grouping together for various types of collective action. Most of them are said to be driven by availability of credit often provided as a result of externally-funded project support. The FAO-supported Special Programme for Food Security (SPFS) has been instrumental in facilitating the creation of Participatory Farmer Groups (PFGs) in a number of villages in Morogoro and Dodoma Regions for the purpose of demonstrating technology and securing inputs. Seventy-three PFGs have been formed, with a membership of over 1,000 farmers (including 388 women). The groups' members are self-selected and the groups generally have a single purpose (for either maize or rice production), and consist predominantly of friends, neighbours or relatives. They have been registered with the Ministry of Home Affairs as Savings and Credit Associations (SACAs). Registration gives the groups legal entity and they have opened bank accounts and have been able to obtain credit on group guarantee for the purchase of inputs. Voluntary Organizations in general are registered with Ministry of Home Affairs (MHAS). As of 1999 there are 101 of such groups. Most of the groups are of farmers who are engaged in general agriculture, but some have specific commodity focus objectives such as for rice, maize dairy and irrigation. A number of women's groups have been registered, as well as some specialist activities such as seed production, tea, horticulture, pyrethrum, fish farming and wheat production. While these are important for enhancing food security in the short term, their sustainability remain an issue.

2.3 Economic Assessment of the Sector

Macro-economic Aspects

2.3.1 Tanzania has been pursuing macro-economic reforms since 1986 when the Economic Recovery Program was launched. The program was initiated against the background of severe market distortions associated with a command economy. The initial focus of the reforms was on restructuring the economy through price liberalization, including exchange rate depreciation, and interest rate deregulation. These reforms drastically improved producer incentives, and led to a revival in economic growth. Real GDP growth averaged 4.6% between 1987 and 1991 compared to 0.1% during the five year period preceding the reforms. After this period of recovery, macro-economic stabilization program suffered a set back from 1992 to 1994 because of problems in revenue collection, and weak expenditure control. Budget deficits (before grants) increased from 1.9% in FY91 to 6.6% in FY94, which was financed largely through the banking system. Consequently, inflation which had fallen to 22% in 1991, increased to 33% in 1994. Annex 4 gives trends in selected macro-economic indicators.

2.3.2 In 1996 the macro-economic stabilization program was put back on track, and since then, Tanzania has achieved major gains in macro-economic management. For the past five years, the Government has been managing its budget through the cash budget system. The adoption of the cash budget system has helped to restore fiscal discipline by ensuring that expenditures match revenues and external grants. On the revenue side, measures have been taken to improve tax administration, broaden the tax base, and rationalize the tax structure. Alongside fiscal restraint, the Government has been pursuing prudent monetary policies geared to price stability. The combination of sound fiscal and monetary policies has led to a sharp decline in Government borrowing from the banking system, resulting in a deceleration in inflation. CPI Inflation end June, 2001 fell to 5.5% from 19% end June 1996. Furthermore, the nominal exchange rate has remained relatively stable, except for 19% depreciation in 1999. In parallel with macro-economic stabilization, Tanzania has embarked on structural and institutional reforms to promote growth and

poverty reduction. The key reforms include privatization, financial sector reform, civil service and public expenditure reform.

2.3.3 Overall, there have been slight increases in the agriculture sector growth in spite of the decline in domestic agricultural terms of trade. Devaluation and removal of input subsidies increased the real price of fertilizer by a factor of 2.5 to 3.9 over 1991-1997⁷. When combined with fall in producer prices (40-60% since 1992), there has been a decline in the profitability of fertilizer use, particularly for food crops. On impact of reforms on marketing costs, marketing margins for maize, rice and wheat between Dar and other cities have fallen, reflecting increased efficiency of private sector market compared to the previous government regulated markets, with the size of the margins reflecting availability of marketing infrastructure. A high transfer cost on the order of US\$0.16/ton/km suggests the need for investments in infrastructure in order to bring down the costs.

Overall Importance of the Sector

2.3.4 Agriculture is the key sector in the Tanzanian economy. The sector contributes about 50% of the GDP and accounts for almost 60% of the total export earnings. (see Box 1). Between 1990 and 1993, annual agricultural growth rate in real terms was 3.3%, which compared favourably with the overall growth rate of 2.8%. However, between 1994 and 2000, though growth in the sector was faster than the previous period, its growth rate of 3.6% was slower than the overall growth rate of 4.1%. The higher overall growth rate was led by the impressive growth rates of the mining and construction sectors. Disappointing growth rates of 1.5% and 2.3% were recorded in 1997 and 1998 in the agricultural sector as a result of weather factors, and sharp decline in the export and produce prices of traditional export crops (cotton, coffee and cashew nuts), incidence of pests and diseases and weak inter and intra-sectoral linkages. This demonstrates the vulnerability of the sector's performance to external shocks.

2.3.5 Crop production account for close to 75% of real agricultural GDP since the mid-90s. The share of livestock was 13%, whilst forestry and hunting and fishing accounted for an average of 6% each. Food crops including cereals (such as maize, rice, wheat, millet and sorghum), root crops, oil seeds, pulses and vegetables take up close to two-third (65.1%) of real crop GDP. The remaining one-third constitutes the traditional cash crops (coffee, tobacco, cashew nuts, cotton, tea and sisal)) that form the bulk of Tanzania's exports.

2.3.6 Agricultural exports constitute well over half of Tanzania's exports (Box 1). In 1999 for instance, of a total export of US\$676 million, about US\$346 million (or 51.1% was accounted for by Tanzania's six traditional exports products (coffee, cotton, sisal, tea, tobacco, and cashew nuts.) Yet the share of the traditional agricultural exports has declined since 1994 when it was as high as 65 per cent.⁸

2.3.7 The non-traditional agricultural exports are fast becoming the dynamic sectors in terms of growth and contribution to exports. In 1995, the contribution of the non-traditional agricultural exports, combining such products as live animals, fresh cut flower, fish and fish products, and

⁷ Agriculture in Tanzania Since 1986 – Follower or Leader of Growth, URT, WB and IFPRI, September, 2001

⁸ Four reasons adduced for the declining share of traditional export crops to total export earnings since the mid-90s include (i) revival of the mining industry, (ii) periodic production dips due to unfavourable weather condition, (iii) adverse terms of trade shocks (TOT) s and (iv) increasing share of non-traditional exports including those of agricultural sector (such as horticultural products, fruits, live animals, fish). (URT/World Bank 2000).

seaweeds, amounted to US\$25.5 million. The amount more than quadrupled in two years, and by 1997, it reached US\$104.6 million. In 1998, this amount had reached US\$149 million.

2.3.8 Tanzania is for most part a food self-sufficient country. Food crops grown include maize, rice, wheat, cassava and various types of pulses and oil seeds. The fish catch along Tanzania's Indian Ocean coastline and inland lakes provides much of the protein. Tanzania's average calorie intake of slightly over 2200 calories is close to par with the FAO benchmark.⁹ However food poverty still persists for over a quarter of the rural population.

Box 1

Selected Indicators of Agricultural Sector Performance

	1990-1993	1994-2000
Total Real GDP Growth (per cent p.a.)	2.8	4.1
Real Agricultural Growth (per cent p.a.)	3.3	3.6
Real Growth in Agricultural Exports (per cent p.a.)	7.5	4.2
Share of Agriculture in GDP (per cent)	48.4	49.6
Share of Agricultural Exports in Total Exports (per cent)	56.0	56.7

Sources: URT/WB. *Tanzania Agriculture: Performance and Strategies for Sustainable Growth, February 2000*
URT *Economic Survey 2000* The Planning Commission Dar-Es-Salaam.

Production Systems, Productivity and Sustainability¹⁰

Crops:

2.3.9 Crop production is of overwhelming importance to the agricultural economy of Tanzania. Crop production as stated earlier contributes 75% of agricultural GDP. The estimated area of cultivated land varies largely due to differing definitions of fallow land, but about 10 million ha of the land area is under more or less continuous cultivation. Including short fallow and permanent crops, 35% of this land is utilised in any one year. The increase in the cultivated area is estimated at 2% per year whereas crop production is growing at 3.3%. This would suggest that yields per unit area are increasing. However, some studies report a negative effect on yields due to the reduction in fertilizer use, so the data have to be interpreted with caution. Another possibility would be that fallow periods are reducing in response to increased pressure on the land since the 'cropped' area includes short fallow (up to 5 years), i.e. a higher proportion of the 'cropped' area is actually cultivated each year than in the past.

2.3.10 Small-scale hoe-based farming is by far the most important production system, with an estimated 4 million farm households and over 90% of the cropped area under this system. Average areas cropped by region range from 1.2-5ha per household, the larger areas are where annual cash crops such as tobacco and cotton are important and ox ploughing is well established.

2.3.11 The main food crops are maize, rice, wheat, sorghum/millet, cassava and beans, and agricultural statistics concentrate on these. Maize is by far the most important crop covering about

⁹ The FAO benchmark is 2240 calories per caput per day and a protein intake of 65grams per caput per day (FAO 1996).

¹⁰ Data on land use in Tanzania is difficult to compile and reconcile between various sources, partially due to discrepancies in the definition of various categories such as 'permanent' and 'temporary/annual' and 'food' and 'cash' crops; but broad patterns are clear. Data uncertainties in the livestock sector are especially acute. Estimates of cattle numbers vary from 12 million with numbers static since the mid 1980s to nearly 16 million, rising at 2% per annum. In addition, the number of households depending principally on pastoralism is considered by some to be underestimated in the statistics used by the Ministries. This analysis uses the data preferred by the ministries, with added comments where data from other sources differs significantly.

57% of the area, grown by 82% of farmers and sold as a cash crop by 26% of farmers. Growth in production of about 2.8% mirrors population growth. Sorghum/millet is the second with 16%, paddy 10%, and grain legumes 8% of the cropped area. Cassava is increasing in importance, often grown as a safety net in case of grain crop failure. Bananas are grown mainly in the Kagera and Kilimanjoro area, and like cassava, have a low value-to-bulk ration and are generally retained for home consumption. Wheat is an important commercial crop, but on a national scale is less important than many minor crops such as onions or sweet potato. Wheat and paddy production are rising faster than population growth. Farm models¹¹ indicate that these are the most profitable crops to grow. All of the 'food' crops are also the most important cash crops for most households. The farm models available indicate that crops can be grown profitably but that profit margins are very thin and can easily become negative because of taxation, unfavourable weather or markets. Statistics on food crop production is given in Annex 7.

2.3.12 Export crops account for 12% of the value of crop production. Marketing reforms resulting in increasing the proportion of the market price paid to producers have stabilised production even though world prices may have fallen. Since agriculture is still to a large extent dependent on unpaid family labour, particularly of women and children, who perform at least 70 percent of all labour in the agricultural sector, the fall in traditional export crops is affecting the food crop sector in particular and is now males are being attracted to commercial food crops such as maize, beans, horticulture and dairy products which were traditionally controlled by women.

2.3.13 Coffee is the most important export crop. Production levels have responded to producer prices and are generally increasing. However, liberalisation of marketing has created a problem of access to credit for purchase of fertilizer and other inputs, because issuing credit has become risky for buyers who are not sure that farmers will sell to them. A system of part payment in credit vouchers under the EU STABEX is being tried to overcome this problem. STABEX funds are also being used to establish a client oriented research programme aimed at quality improvement of this crop. Cotton is the second most important export crop. Production is volatile and related to the world price and the profitability of maize since the two crops are to some extent interchangeable to farmers.

2.3.14 Cashew production grew rapidly in the 1990s in response to high world prices and reform of the marketing system passing a higher proportion of this to producers. The price is now stagnating and this may result in a relative decline in the crop. The inability of Tanzania to compete with India in processing the crop due to relatively high labour costs is a serious constraint to increasing the export value of the crop.

2.3.15 Tobacco production has also increased markedly following reform of the marketing system, it now accounts for a large part of fertilizer usage. Tea is grown mainly by large estates (55% of production), liberalisation of the marketing system was complicated by the need to rehabilitate the tea estates and so proceeded more slowly than the other crops, it is anticipated that producers will respond to the recent market liberalisation.

2.3.16 Sugar has faced serious problems of smuggling. According to the Sugar Industry Act 2001 which established a Sugar Board, only registered cane farmers will be able to grow and sell cane, and mills will buy cane only from registered farmers. Tanzania has five sugar factories listed with a total processing capacity of 11,500 tonnes of cane per day. Production is estimated at 130,000 tonnes for 2000/2001, while consumption stands at 285,000 tonnes. Statistics on cash crop production is given in Annex 7.

¹¹ Developed for the WB study; Agriculture, Performance and Strategies for Sustainable Growth, February 2000,

2.3.17 Input levels are very low, less than 15% of farmers use inorganic fertilizer and only in very small quantities (total use estimated at 65,000t or about 15kg/ farm household). The use of organic manure is being promoted but recommended levels are far above what is available and can be transported to fields. Other inputs, such as pesticides are mainly used on cotton, coffee and maize storage. They are an additional cost for hybrid maize producers as these varieties are notoriously susceptible to post harvest losses. Low productivity is regarded as the most important constraints towards increased agricultural growth among small farmers. Thus targeting land and labour productivity through focusing on technology generation and dissemination on least-cost methods of increasing returns to these factors is imperative. Emphasis on soil conservation practices, as well as efficient water use and targeting high value crops are some of the suggested options.

2.3.18 Large farms (over 150ha) make only a minor contribution to overall production. The contribution to aggregate production is less than 10%. Many are still State-owned but in the process of dis-investiture. They cover about 700,000ha, 7% of the national area under crops. Maize, wheat, cotton, sugarcane, tea and tobacco are the main crops. Medium scale farms (20-150ha) are even less important. About 500 holdings mostly in the private sector cover about 0.2% of the area. However, the GOT aims to attract more farmers into this type of commercial farming.

2.3.19 Peri-urban agriculture was found to be poorly developed. On the other hand, 'urban' agriculture within city limits is little documented since these areas are not covered by Ministry statistics but is apparently flourishing. Some of the farmers are from low-income groups who engage in this for survival, but horticulture, small scale dairy farming etc. are largely the preserve of the better off who have capital to invest. In the urban environment, there is ready access to inputs and a lucrative market.

Irrigation

2.3.20 The dependency on crop production on the weather has led to serious food shortages in poor years and it is considered a national priority to reduce the dependency on rain-fed crop production. Of an estimated 1 million ha suitable for irrigation only about 150,000 ha (or 15%) are under irrigation. Irrigated areas are usually small-scale schemes with rice and sugar cane as the predominant crops. The development potential for irrigation is large especially in the Rufiji River Basin. The problems are management and cost recovery. In the case of rice schemes, they were planned in the 1980s when rice prices were double those prevailing now. A national Irrigation development plan prepared in 1994 supported by UNDP identified 3 priority areas:

- Improvement of existing traditional schemes
- Development of medium and large scale farms
- Development of water harvesting technology in Central Region

Irrigation schemes have had disappointing impact due to environmental and social factors. A new irrigation masterplan is being prepared which will include an analysis and possible solutions to these constraints. Research has shown that water harvesting techniques are economically viable in some environments.

Livestock:

2.3.21 From 1998 figures, the sub-sector contributes about 13% of agricultural GDP of which 40% originates from beef production and 30% each from milk products and poultry/small stock. Tanzania has one of the largest cattle populations in Africa estimated at more than 15 million head.

2.3.22 Traditionally, cattle keeping were based on an extensive pastoral system. Herders migrated over wide areas following the availability of grazing. A variety of factors such as increasing livestock numbers, population growth and the expansion of the arable area into grazing areas has led to the collapse of this system and it is now estimated by MAFS/MWLD that only 14,000 households or 0.004% of households depend on livestock keeping alone¹². The pastoralists have adapted to the change by adopting mixed farming. The corollary of this is that the number of households engaging in both crop production and keeping cattle has shown a rapid increase from 14% in 1984 to 29% in 1995 contributing about 80% of beef production. There is no information on how many of these households depend mainly on livestock production. Gender studies indicate that women may also shoulder a disproportionate amount of the extra work involving mixed farming. The data from MWLD suggest that cattle numbers are increasing steadily at 2% per annum¹³. There is movement of pastoralists from the overgrazed North towards the South and West. There are conflicts of interest between farmers mainly dependent on pastoralism and the expansion of arable farming and other forms of land use. This has led to confrontation. Pressure on land has also meant that many male pastoralists move into urban centres in search of work, leaving women and children behind to fend for themselves. Since women traditionally do not handle cattle many of such “de facto female-headed pastoralist household” have become destitute

2.3.23 Tanzania is thought to have a comparative advantage in cattle production, but endemic diseases mean that live animals cannot be legally exported. The main cross border trade is to Kenya, but this market has been closed from time to time due to non-adherence of traders to legal requirements. Internal trade is said to be constrained by high taxation and cumbersome bureaucratic procedures. Improvement in livestock infrastructure, disease control and trade will enhance not only agricultural performance but the economy in general.

2.3.24 The traditional dairy sector accounts for about 80% of milk production, this is characterised by low yields per cow and per hectare but low production costs (only about 25% that of intensive production). Production appears to be keeping pace with population growth. However, the remoteness of production areas means that little of the production can be marketed. Intensive dairy farming accounts for only 2% of cows but nearly 20% of milk output, most of these are small private farms of 10-50 cows, but about a dozen large scale farms exist with about 10,000 cattle in total. Most of these are state farms in the process of privatisation. Growth of this sector has been buoyant at about 6% per annum and milk imports have dropped from 20 million to 10 million litres. Despite the success of the sector milk consumption is below that of neighbouring countries.

2.3.25 *Small ruminants*: About 1/3 of farm households keep small ruminants and numbers, mainly goats are increasing rapidly (3.7% per annum), now estimated at 13 million head. They are mainly kept with hardly any external inputs, thus investment costs are minimal.

2.3.26 Back yard poultry are also kept by at least 1/3 of farm households, particularly women, and this system accounts for about 60% of the national poultry stock and provides 100% of the eggs and poultry meat consumed in rural areas and about 20% of poultry meat consumed in urban areas. Intensive and semi-intensive systems in urban areas provide the rest. Projects over the years have introduced large numbers of improved multi-purpose breeds to rural areas and the resulting local races are considered to be productive birds. Marketing improvements may make it worthwhile controlling epidemic diseases to increase output and incomes, especially of rural women.

¹² However, other sources speak of a ‘substantial’ pastoralist community that extension services have tended to ignore.

¹³ Other reports put the cattle population as static at about 12 million since the mid 1980s.

2.3.27 Pig production is of minor importance and is mainly back yard production with few external inputs in a few regions though it has been said that MWLD data under-estimates the importance of pig keeping.

2.3.28 Hides and skins are the most important livestock by-product and the most important livestock export product. Marketing has now been privatised and the volume traded has increased. However, quality is still very low and limits the export value. There is clearly scope for increasing revenue by improving the quality.

Natural Resources: Forestry, Wildlife and Fisheries:

2.3.29 Tanzania is well endowed with forests and woodlands which provide more than 90% of national energy supplies, nearly all of the timber requirements and support a large export industry of high value quality timber (10% of registered exports). Its contribution to GDP is estimated at 3.5% but informal trade in charcoal etc is not captured in this figure. In addition it has been estimated that over 50% of rural household income comes from the sale of forest products such as fire wood, charcoal, honey and wild fruits. However, it is estimated that the country's forest area declined from 44 million ha or 50% of total land area in 1938 to 33 million ha or 37% of total land area by 1987. There are no reliable figures on deforestation in Tanzania, United Nations Food and Agriculture Organization (FAO) estimates range from 130,000 to 400,000 ha per annum.

2.3.30 In 1993, fuel wood consumption was estimated at 45 million cubic meters per annum, with a per capita wood consumption of 2.0 cubic meters of round wood per annum. The rural areas alone consumed about 43.8 million cubic meters of firewood. By the year 2000, fuel wood demand was expected to surpass 60 million cubic meters. The current off-take is believed to exceed regeneration but data is lacking. Local deforestation is influenced by changing practices such as the increase in fish smoking around Lake Victoria following the shift in fisheries from small fish to Nile Perch and the use of wood fired curing in tobacco farming. Frequent fires set by pastoralists in some areas reduce the regeneration rate and the variety of woodland plants. Forest fires are rampant particularly in natural forests where monitoring is very difficult. The national capacity to fight fires is very limited both technically and financially. Plantations occupy a relatively small area and it is planned that these should be commercialised and made self-supporting.

2.3.31 Wildlife and non-wood forest resources are an important source of foreign exchange earnings, make an important contribution to GDP and are an important source of income for rural people. Land set aside for wildlife conservation is also unavailable for agricultural use, thus this sector must be considered carefully when discussing agricultural development. The issue of human/wildlife conflict is prominent in Tanzania and it was this problem that was the driving force for Bank intervention in Selous Games Project. Future strategies in the subsector will have to incorporate solutions to this issue. There is a need for greater collaboration between the Ministry of Natural Resources and Tourism and the other agriculture line ministries. A further detail of the importance of the wildlife sector is presented in annex 6.

Fisheries:

2.3.32 Fisheries contribute about 6% of agricultural GDP or 2.3% of total GDP. Inland fisheries are and always have been much more important than marine. The structure of exports has changed rapidly since ecological change in Lake Victoria resulted in a boom in the Nile perch fishery during the second half of the 1980s. Previously inland fisheries only contributed 4% by value but this is now more than 80%, the remainder being mainly commercial marine shrimp fishing by 16 licensed boats. Together they constitute 8% of total exports. Controversy over the Nile perch fishery, with its negative socio-economic effects on poorer sections of the community and doubts about the

sustainability of the current harvest continues despite its export contribution. However, local artisanal fishing still makes up 80% of the national fish catch and 85% of the total catch is consumed locally. It is estimated that 1/3 of national protein intake is from fish. The imposition of ban on freshwater fish exports from East Africa by the EU was estimated to have caused Tanzania about US\$ 4 million per month. Thus fishery protection and the mitigation of adverse environmental effects affecting fisheries are of major importance to economic development, though there is caution of the danger of over-dependence on an export item in a very thin market subject to closure by an external agency.

Sectoral Linkages

2.3.33 The agricultural sector provides direct employment for about 85% of the rural labour force and has considerable forward and backward linkages. Most of manufacturing output and employment comes from agro-based operations. As of 1998, about 70% of the formal manufacturing employment was in agro-processing operations. With over 80% of the population in rural areas, the multiplier impact of additional rural income can have a major impact both on the agricultural and non-agricultural sectors.

2.3.34 The development of private agribusiness enterprises and a few large-scale farming enterprises in Tanzania is creating potential opportunities for strategic partnerships between these enterprises and smallholder farmers. These partnership schemes have shown promising prospects in increasing the production and quality of cash crops, such as sugar cane in Mtibwa, tobacco in Tabora and Iringa, and oilseeds in Morogoro. For certain farm enterprises this could be an effective mechanism for overcoming the institutional void left behind by the collapse of the rural finance and the cooperative marketing systems in the country. It would also improve the availability and utilization of farm inputs and modern technology at the farm level, leading to increased productivity and production. Tanzania's potential for new agro-based processing and value-adding operations is considerable. The collapse of the capital-intensive public industries has created opportunities for small- and medium-scale operations to thrive, particularly in food, cashew, and other commodity processing.

2.3.35 GOT is cognisant of the fact that enhanced agricultural sector performance is crucial to the achievement of targeted acceleration in real GDP growth and poverty reduction. Thus, the ASDS could contribute to poverty reduction through; inter alia, the creation of improved agricultural systems, rural infrastructure and promotion of small-scale enterprises. The Government is committed to taking medium-term actions to further update the PRSP, in order to integrate gender concerns into the document, thereby making it a gender-sensitive tool for poverty reduction.

Main Features of Domestic Factor and Product Markets:

2.3.36 The market for the two major factors of production (land and labour) could be described as highly fragmented lacking in spatial and temporal integration and suffering from institutional rigidities. There is no active agricultural land market and despite the recently enacted land and village land acts, there are still institutional barriers to free flow of land transactions. Agricultural labour market is highly fragmented. Although there is free flow of labour across district or regional administration boundaries, wages are not determined by market forces alone but by a combination of economic, social and cultural considerations.

2.3.37 The period since 1986 has seen the rapid growth in market flows of food crops within Tanzania, due to both liberalization of distribution systems and the phenomenal growth in the population of Dar-es-Salaam relative to the rest of the Country. A large proportion of food crops are still consumed within the household or locality that produce them. For example MAC estimated

that between 1992/93 and 1997/98 only 26% of maize and 50% of rice produced was sold. Poor road communications infrastructure greatly increases the cost of agricultural trade within Tanzania, as does arbitrary official taxation and unofficial levies.

2.3.38 The market structure for food crops is still far from the perfect competitive structure. Though there are no barriers to entry, financial constraint, lack of access to comprehensive market information have limited the field at the wholesale level to a few sellers who have the financial muscle and own (or can have regular access) to transportation. In many rural areas, there are reported cases of private traders manipulating the farmers in terms of weights and/or price.

2.3.39 There is increasing evidence to suggest that spatial marketing margins have decreased over time for previously regulated tradable food crops like wheat, rice and maize. However transport costs remain very high, and absolute margins are still quite high. This combined with occasional prohibitions on cross-border trade is a fundamental reason why about one-quarter's of the country's maize supply was seen to behave as a non-tradable crop.

2.3.40 Available literature indicate that the increased competition from the entry of private marketing agents has greatly reduced marketing margins in cotton, cashew nuts and coffee. This is further supported by rising relative producer prices for export crops (relative to world prices) after the mid to late 1980s, and before 1995/96. Nonetheless the market structure for traditional agricultural export crops could still be described as oligopolistic. The serious financial insolvency of the cooperatives has reduced their market share and ability to serve as alternative channel to farmers. Many of them now rent their stores to the private merchants and/or serve as their commissioned buying agents.

Regional and Foreign Trade

2.3.41 Agricultural products feature prominently in the foreign trade of Tanzania. Between 1991 and 2000, agricultural products account for 69% of export earnings. The traditional agricultural export crops are coffee, cotton, sisal, cashew nuts, tea and tobacco. EU remains the major trading partners of Tanzania. Other important trading partners include Japan and U.S. A. The 1999 African Growth and Opportunity Act passed by the U.S. Congress will definitely impact positively on exports of agricultural products (textile in particular) to the U.S.

2.3.42 Fluctuation in agricultural export earnings over the years had been due to variability in production primarily as a result of rainfall pattern and pests and diseases and declining world prices of primary exports. For example, between 1994 and 2000, world prices of coffee fell by 51%, cotton by 41%, sisal by 34% and Tea by 21%. Only tobacco enjoyed a price increase of almost 50%. Export earnings have been buoyed up by rapid growth in non-traditional agricultural export earnings namely, cut flower, vegetables, fruits and live animals.

2.3.43 The GOT has promoted regional integration and belongs to a number of regional communities; the two major ones being the East African Community (EAC) and the Southern African Development Community (SADC). Tanzania together with Kenya and Uganda has continued with the efforts of strengthening the East African Community and its institutions. The preparation of the East African Community Development Strategy (2001-2005) is on going. The broad goal of this Development Strategy is to widen and deepen cooperation among Partner States in political, economic, social and cultural fields, research and technology, defence, security and legal and judicial affairs for their mutual benefits. The Development strategy has identified the economic areas of co-operation for the period 2001-2005 to include the harmonization of fiscal and monetary policies, trade liberalization and development, enhancing the supply capacity in the productive sector, co-operation in integrated water

resources management and mineral development, development of infrastructure and support services, human resources development and cooperation in judicial affairs.

2.3.44 The trade concessions granted by the industrialised countries (notably EEC and USA) in the recently concluded WTO meeting in Qatar will be of tremendous benefit to agricultural exports from Tanzania. The challenge facing GOT will be to capitalize on these opportunities in advancing its agricultural exports by diversifying production, improving product quality and enhancing its competitiveness.

2.3.45 The GOT is reviving its policy to encourage cross-border trade in agricultural commodities. For example, in the 2002 budget, the government intends to remove the restrictions on food crop and livestock trade across borders. A speedy implementation of this policy will assist small farmers in the more remote areas of the country (but near national boundaries) and who are not properly integrated into the national domestic market to get better prices for their products. This will enhance labour and land productivity. Some statistics on foreign trade, production and exports are given in Annex 7.

Government Policies and Regulations

2.3.47 Since the mid 1980s, there has been a paradigm shift in terms of the role of government in the national economy. From the era of direct active involvement of government in agricultural production, processing and marketing, the role has been redefined to regulatory, facilitative and public support functions. This new role has been exemplified in various policy and strategy documents for the sector and sub-sectors.

2.3.48 The most recent and comprehensive official statement of agricultural policy is contained in the document “***Agricultural and Livestock Policy***” 1997 published by the Ministry of Agriculture and Cooperatives. The salient features of the policy are summarised as follows:

- Liberalisation of all agricultural markets and removal of state monopolies in export and import of agricultural goods and produce;
- Withdrawal of government from agricultural production, processing and marketing projects;
- *Abandoning the objective of national food self sufficiency in favour of the objective of food security at the national and household levels;*
- Reliance on the private sector (comprising smallholders, commercial farmers and pastoralists) for all agricultural production;
- Decentralisation of agricultural extension and transfer of administrative and implementation responsibility to District councils;
- Integration of agricultural research with agricultural extension at the district level;
- The adoption of a new land policy to improve security of tenure and allocation of land
- The promotion of access of women and youth to land, credit, education and information; and
- Government continued responsibility for industry regulation and assistance through commodity crop marketing boards.

2.3.49 The GOT has recently approved the Agricultural Sector Development Strategy (ASDS). The ASDS was the outcome of a participatory consultative process among a wide range of stakeholders and provides a basis for action by both the public and private sectors to support Tanzania’s efforts to stimulate agricultural growth and to reduce rural poverty. The three Ministries (MAFS, MACM, MWLD) provided joint leadership in the preparation of the document and together with PO-RALG have primary responsibility for its effective implementation. The primary objective is to create an environment conducive for the improvement of agricultural productivity, to

improve farm incomes and reduce rural poverty and to attract private investment. The ASDS document has identified five priority areas of intervention. These are:

- Strengthening the institutional framework for agricultural development;
- Creating a favourable climate for commercial agriculture related activities;
- Improving support services by public and private sector;
- Strengthening market efficiency for agricultural inputs and outputs and
- Mainstreaming planning for agricultural development in other sectors like rural infrastructure, environmental management and health.

The strategy further advocates the modernisation of agriculture through:

- Focus on agricultural profitability and incomes;
- Enhanced role of the private sector; and
- Implementation as much as possible through District Agricultural Development Plans.

The implementation philosophy advocated by the ASDS involves:

- Empowerment of local people by promoting their participation in decision-making and hence, ownership of local development initiatives;
- Withdrawal of government from roles which are more efficiently performed by other actors, such as non-governmental organisations and the private sector; and
- Implementation through appropriate institutional structures, both public and private, according to well-defined roles.

2.3.50 The decentralisation of the responsibility for implementation of ASDS to PO-RALG whilst maintaining the lead role of MAFS, MCM and MWLD in overseeing this process has led to the identification and establishment of co-ordinating mechanisms, principally the Inter-ministerial Committee (ICC) comprising the permanent secretaries of the lead and collaborating ministries and representatives of the private sector. In addition, the three lead ministries plus PO-RALG will establish a Technical Inter-ministerial Committee (TIC) to act as a secretariat for the ICC. One of the first tasks of LGAs will be to formulate and implement District Agricultural Development Programmes (DADP) and integrate these into District Development Programmes (DDP). The PO-RALG regional secretariats will monitor implementation of the DADPs. The Streamlining Study identifies concern that with the planning section of MAFS taking the lead role in preparing ASDS, evidence is emerging that MCM and MWLD may be developing their separate approaches. It is also important to involve MNRT in ASDS.

2.3.51 The policies and regulations covering forestry, fisheries, wildlife and environment are dealt with in detail in Annex 6.

Major Sector Constraints

2.3.52 Land Resources: It is often assumed that Tanzania has an underused and abundant natural resource base which can be readily developed. Whilst it is true that nationally there are abundant resources suitable for development, it must also be said that in many areas there is evidence of land scarcity and intense competition for access to resources. Environmental degradation is also reducing the resources available. In the literature, resources often suffer from double accounting. It is the same land resource which is identified as being suitable for increasing crop production and expanding pastoralism and which currently provides the fuelwood on which the country depends for its energy requirements. The development options are usually to some extent mutually exclusive.

2.3.53 The new Land and Village Land Acts (1999) are of key importance. These will enable security of tenure and land titles to be gained by farmers, pastoralists etc., allowing them access to credit and promoting investment in increasing productivity. However, doubts have been expressed about the value of the Acts for the poor and women. The following section appears to take care of any doubts about women's rights.

2.3.54 Sub-section 20(2) of the Village Land Act, 1999 prohibits the use of customary law in determining the right of occupancy. As regards discrimination against women, the Act notes "Any rule of customary law and any decision taken in respect of land held under customary tenure, whether in respect of land held individually or communally, shall have regard to the custom, traditions, and practices of the community concerned and the rule of customary law or any such decision in respect of land held under customary tenure shall be void and inoperative and shall not be given effect to by any village council or village assembly or any person or body of persons exercising any authority over village land or in respect of any court or other body, to the extent to which it denies women, children or persons with disability lawful access to ownership, occupation or use of any such land."

2.3.55 However, doubts expressed as to whether the Acts really make land valuable and a tradable commodity for all appear to be valid. The National Land Policy has a section devoted to definitions, but neither 'land' nor 'value' is defined. During the Ujamaa epoch in Tanzania, the concept that 'land is not a tradable commodity' was enshrined in national policies and legislation. All land was (and still is) vested in the President as trustee for all citizens and land was issued to the various applicants on a 'first come first served' basis and upon payment of nominal fees. Since land was allocated to citizens free of charge, they were not allowed to sell the land allocated to them, except when the land was developed in which case they were allowed to sell the developments or improvements (legally referred to as unexhausted improvements) on the land. However, land has scarcity value and that is why land markets have evolved in urbanizing areas and in densely populated regions throughout Tanzania. The new Acts attempt to address this, yet Section 37(8) of the Land Act, 1999 comes down heavily to prohibit all sales of bare land. The particular section states: 'Unless otherwise provided by this Act, no sale of land without unexhausted improvements shall be approved, and such shall be deemed to have no value'.

2.3.56 Thus land without un-exhausted improvements still has no value. This means the notion that land per se is not a saleable commodity still remains. The Land Act is potentially confusing as sometimes when it says land has value; it merely means that land is valuable (undeveloped land). In other cases, the notion land has value means land has economic value and can enter the land market and be transacted as a marketable commodity (developed land). The decision as to whether land is 'developed' or not is at the discretion of the Commissioner of Lands. There is a real risk that land occupied for instance by pastoralists or used for shifting cultivation may be judged to have no value as a tradable commodity, with negative effects on their ability to use it as collateral. It could even be alienated from them without compensation for private farming, wildlife or hunting reserves. Clearly the interpretation and use of the new Acts needs to be closely monitored.

2.3.57 The strategy to address these issues is the development of District Development Programmes (DDP) which will include a District Agricultural Development Plan (DADP). This is being piloted in a few districts with donor support. However, overall the capacity of LGAs to do this is very limited indeed and is a major constraint to efficient and sustainable development of the sector. In addition, production of a plan pre-supposes the need to monitor and evaluate progress in implementing the plan. This has barely been considered and little capacity exists to do this.

2.3.58 Low profitability: Farm models show that current profitability is low and that the use of inputs is only economic for a minority of farmers. Marketing inefficiency is considered to be an

important factor contributing to low farm gate prices. The transfer cost of marketing produce has been estimated in 1999 to be in the order of US\$0.16 per ton/km. This is considered too high by international standards, and thus investment in complementary marketing infrastructure is considered imperative for growth in agriculture.

2.3.59 Poor levels of support to farmers in terms of information on different technologies: in some cases this is due to poor extension coverage. In others the profitability of the possible options has not been researched adequately. Lack of timely availability of inputs: some inputs, especially improved seeds may not be available when needed. The lack of appropriate support for extensive pastoral systems is particularly acute.

2.3.60 The largest concentration of livestock is in the semi-arid areas of Tanzania where water scarcity is a major problem. Trade-related diseases such as CBPP, CCPP, FMD, LSD and NCB are rampant, with outbreaks reported throughout the country. Grazing rangelands are characterised by low quality pastures in wet seasons and virtually no pastures in the dry season.

2.3.61 Dependency on the climate: this is particularly acute because of the use of climatically marginal areas for farming, an increase in drought prone soils due to degradation, and a possible increase in extreme weather patterns in recent years. Poorly developed irrigation and water harvesting schemes are an additional factor.

2.3.62 High post-harvest losses: Currently post-harvest losses are estimated in the region of 50-60% for fruits and vegetables, 30% for maize and 12% for rice. These high levels of losses severely limit the ability of poor households to secure a stable income from production.

2.3.63 Lack of access to Production Credit/Capital: The volume of agricultural credit has experienced a dramatic decline over the recent past. In 1999 for example, less than 1% of all commercial bank lending were loans for agricultural marketing. This represents a decline from almost 20% in 1995. Only 5% of Tanzanian farmers obtained credit from non-family sources in any given year. Women, who are the main agricultural producers, are particularly disadvantaged in their access to credit. However, unless proper administrative mechanisms are instituted, financial institutions, especially in Zanzibar, expressed reluctance in offering credit to farmers, as past experience demonstrates poor rate of recovery.

2.3.64 Excessive Regulations: Heavy taxation continues to be a disincentive in the agricultural sector. Currently farmers and traders have to meet a plethora of taxes and fees and levies at village, district, regional and national levels. These include crop cess, education fund, development levy, national social service fund, advertising tax to name a few. To these may be added the non-formal and often illegal payments extracted from the unwitting farmers. Unofficial estimates put the value of all such taxation as high as 15% of the gross value of produce. In addition, regulations forbidding sales to neighbouring countries and sometimes nearby regions may severely distort the internal markets for the very crops being promoted. These constraints are, however being addressed under the Economic Reform Program underway.

2.3.65 Institutional Weakness: A number of institutions and agencies are involved in agricultural development programming and implementation in Tanzania. Key among these are the Ministries of Agriculture and Food Security, Cooperative and Marketing, and Water and Livestock Development. The Regional Administrative and Local Government coordinates implementation at the District levels. However these institutions suffer from a number of constraints, including inadequate manpower and skills for policy formulation and analysis, monitoring and enforcing policies, standards and regulations. This is especially so at the district level, and any investment in capacity building will aim first and foremost at strengthening local and farm level institutions. Until

recently, coordination mechanism among the various institutions was weak. Though this seems to have abated, coordination between the line agriculture ministries and the Ministry of Natural Resources and Tourism is yet to be streamlined.

2.3.66 Lack of full integration of women into the sub-sector: Many studies have shown that women, despite providing most of the farm labour, receive a discouragingly small share of the proceeds. Literature has shown that about 56% of agriculture labour force is provided by women, and thus analysis of shifts in labour productivity must take into consideration the implication on women, women's activities and women headed households. Labour is also an important constraint and a constraint that is likely to become more stringent with the impact of HIV/AIDS.

3. STATUS OF PUBLIC SECTOR INVESTMENT AND SUPPORT SERVICES

3.1 Scope and Magnitude of Investment

3.1.1 Following the re-definition of the role of government in the sector, public expenditure priorities have been re-ordered to focus on the funding of public goods such as research, extension, irrigation, and capacity building (agricultural training). Priorities also include funding of policy and planning, monitoring and evaluation as well as regulatory and control activities. Public expenditure on agriculture in Tanzania no longer includes budgetary allocations for agricultural inputs (particularly fertiliser) subsidy and subvention to inefficient agricultural parastatals¹⁴. There is a conscious policy stand of government not to be engaged in production activities, which the private sector can more efficiently carry out.

3.1.2 Agricultural budget in real terms represent about 4% of total budget between 1996 and 1998. Recurrent expenditure represents about 75% and Development (capital) expenditure accounts for about 25%. There is a disproportional share of personnel emoluments (PE) relative to other charges (OC) in the recurrent expenditure budget. Though Development Expenditure accounts for only 25% of budgeted expenditure, it is about 95% donor-financed. The strong dependence on donor funding of development expenditure does not make for sustainable funding of agricultural development in the long run. However, with the adoption of the medium term expenditure framework, domestic funding of core development activities is expected to increase.

3.1.3 There is an encouraging sign of improved funding of agriculture since 1999-2000 as it is considered one of the priority sectors in the Poverty Reduction Strategy (PRS)¹⁵ of GOT. For example there was full funding of the core projects of the agriculture sector in the 2000-2001-budget year.

3.1.4 Other rural development sectors, such as rural components of health, education, water and roads add another 2.6 % of central government expenditures. This does not include spending by district authorities. However the combined total of 6.1 % of central expenditure on agriculture and rural development is minimal when compared to agriculture's contribution to export revenue (at least 45%), to gross domestic product (minimum of 47%), and to employment (84%).

¹⁴ Subsidy on agricultural inputs was eliminated in 1994 and there is a firm commitment from government to divest from agricultural production, processing and marketing activities. A number of government parastatals have either been or are scheduled for privatisation.

¹⁵ The priority sectors are agriculture, education (primary education), health (primary health), roads (rural roads), water and governance.

3.2 Research:

3.2.1 Tanzania was famous for agricultural research, especially livestock and pasture development in the 1950s and 1960s. In recent years the national agricultural research system has adopted a client oriented farming systems approach coupled with decentralization. Many donors have helped in this process. The Tanzania Agricultural Research Project (TARP II) is on till year 2002, but could be extended till June 2003 to enable full utilization of funds. The main problem with TARP II has been inadequate and untimely release of counterpart funds. The stated government target is to spend 1.5% of agricultural GDP on research, but spending is currently less than 0.5%. The infrastructures at the agricultural research centers in Zanzibar have fallen into serious state of disrepair. This is one area where the Ministry of Agriculture in Zanzibar is seeking donor support.

3.2.2 A competitive grant system is being implemented to ensure targeted funding for client-oriented research. The Netherlands is already funding such a scheme in the Lake and Northern Zone. The country has been divided into 7 agro-ecological zones based mainly on cropping system and each of these is served by a zonal center. Other stations have either been downgraded to outreach sites or have become specialized on one commodity like coffee or cotton. Extension/research linkages are assured together with zonal management of the research agenda via COSTECH, committees bringing together research, extension, NGO, private sector, LGA etc. Many programs have a specific gender component i.e. plant breeding to ensure that specialist knowledge held by particular segments of the community is not wasted. The Universities are active partners with the research stations run by the research divisions in the ministries.

3.2.3 Export crops (coffee, cotton, cashew nuts, sisal, sugarcane, pyrethrum, tobacco and tea) research is being privatized and a good start has been made with tea. The committee on agriculture and livestock research under the Committee on Science and Technology (COSTECH) is to be strengthened and become responsible for setting the national research policy and agenda, coordinating agricultural research nationwide, managing the National Agricultural Research Fund and regulating the research programmes for the benefit of stakeholders.

3.2.4 There is a shortage of research expertise in crucial areas of policy formulation and socio-economics, which are just the fields where the Ministries and farmers need more information.

3.3 Extension Services:

3.3.1 The role of the 3 Ministries is now to support and coordinate the extension services run by local government. They are responsible for staff development and training, development of the extension programme and approach and the monitoring, evaluation and impact assessment of the services provided. Technological packages for improved production and profitability have been developed, but in the past acceptance of these by farmers have been low. The new 'bottom-up' approach encouraging dialogues rather than technology transfer should allow adaptation of technologies to suit the various clients. The extension service comes together in the Economic Development Support Services Department of PO-RALG at regional level where staff from the three Ministries plus MNRT are represented.

3.3.2 Extension relies very heavily upon donor support. In 1998/99 government provided less than 1% of the extension budget. It is thought likely that District councils will have to reduce extension staff numbers further as they become more independent of central funding. The zonal level has been much reduced with generally only one officer for each sub-sector, subject matter specialists having been posted to district level. At the District level a team of SMS reports to the District Chief executive. Theoretically the District could also contract private extension services,

but they are not in a financial position to do this at present. It is at the district level that the activities of local or national NGOs are facilitated, since they often make use of LGA field extension staff. Districts are divided into divisions covering 10-20 villages with an extension worker for every 2-4 villages. The target extension density is 1 VEO to 480 farm households, but the actual is thought to be twice this and resources make it unlikely that this target can ever be achieved. Village extension workers generally have a good technical background in agriculture, but lack expertise in the participatory approach now being adopted.

3.3.3 Under NAEP II, the inability of Government or Local Government to fund an approach based on deployment of large numbers of VEOs was realised and experiments have been started with alternative systems based on NGOs, and farmer empowerment like the farmer field school approach. Various donors have experimented with promoting farmer-to-farmer exchanges, such as seed fairs with some success.

3.3.4 The training department of MAC is responsible for all Ministry of Agriculture Training Institutes (MATI) and Livestock Training Institutes (LITI). With the freeze on civil service recruitment since 1994, the numbers of students has declined and many Institutes have been closed. Some are offering short courses to upgrade extension staff or train farmers. All this is dependent on donor support. The department is also responsible for producing extension materials and with DANIDA support they are in the process of producing a range of materials, mainly for the VEW. So far 80 products are in the pipeline of which 4 are for field use and the others for the colleges. Consultants, i.e. University or retired ministry staff, provide the content.

3.4 Rural finance:

3.4.1 The main financial products needed in rural areas are credit; savings facilities and money transfer services. The inadequacy of working capital is an important constraint to small-scale farmers' productivity. There is very little formal credit available to support on-farm investment by smallholders. Historically, the GOT's approach to rural finance has been to provide targeted subsidized credit to agriculture through state-owned banks, NCB and CRBD. The Banks faced serious financial problems resulting from inappropriate macroeconomic policies, political interference, and Government control on interest rates.

3.4.2 The various semi-formal rural finance providers and support programs (SACCOs and SACCAS) also have generally limited outreach and most of them are unsustainable. The number of NGOs providing credit has multiplied in recent years as a result of programs sponsored by development organizations and donor agencies to support poverty alleviation and rural development. However, they are seriously constrained mainly by their limited outreach and by their dependence on external donor support.

3.4.3 Recognising the importance of financial capital assets for agricultural development, the GOT has deregulated the financial system, a process that started in 1986. This included the managed upward shift in interest rates in order to encourage savings and investment¹⁶.

3.4.4 An important impact of the financial sector liberalization has been the virtual collapse of financial services in rural areas, especially credit for input supply and crop marketing through cooperatives. As interest rates rose and subsidized credit disappeared, the mass of cooperative unions, which were in a poor financial state, became ineligible for loans and so were unable to provide finance for small and medium scale farmers. The new private banks did not replace the cooperative system since, under the liberalized system, profitability and risk militated against

¹⁶ World Bank (2000) Tanzania Agriculture: Performance and Strategies for Sustainable Growth. Pp. 189-196.

lending to the agricultural sector. In fact most of the studies conclude that the effective lack of rural finance is one of the major problems facing the agricultural sector in Tanzania.

3.4.5 The lesson from project and NGO based lending seems to be that fostering the habit of saving is crucial to the viability and sustainability of any system. For this reason, Savings and Credit Cooperative Societies (SACCO's) appear to be well conceived as a mechanism for rural finance, whilst Savings and Credit Associations (SACCAs) and many NGO interventions, which focus on credit delivery, have often proved to be short-lived. Similarly in Tanzania as well as in many other countries, credit discipline and the identification of profitable investments seem to be more important in determining loan repayment rates than the level of interest rates.

3.4.6 The provision of financial services in rural areas should ultimately become an integral part of a national commercial financial services sector, with the long-term objective in view of creating an integrated national financial services sector. The links between the commercial banks (including NMB) and the informal sector should be fostered. The role of the government in the rural financial services sector should be centred on establishing and maintaining an effective regulatory framework that will give the sector sufficient freedom to expand whilst safeguarding the interests especially of the small saver or borrower. However, whilst inadequacy of rural credit is seen as a constraint to agricultural development in the Zanzibar, there is an inadequate mechanism to implement its delivery and administration. Further study, using local consultants, is recommended to advise on solution to the micro-credit problem in the Zanzibar.

3.5 Rural Roads:

3.5.1 Tanzania's road net-work consists of a total of about 85,000 kms, classified as follows: (i) 10,300 km. Trunk roads, (ii) 24,700 regional roads; (iii) 20,000 district roads; (d) 27,550 km. Feeder roads and (v) 2,450 km. Urban roads. Only 5% are paved and 95%t (10% gravel and 85%t earth) are unpaved. For the size of the Country, the road density is very low. The impact of an improved road network on poverty reduction cannot be overemphasized. Poor condition of roads either limits access or raises transportation costs to social services and to the agricultural and other economic products from the areas of production to market centers. The PRSP has accorded high priority to rural road development. The overall objective of the rural roads sector is to have a road network that is well maintained, providing safe and affordable services to all parts of the country. The poor condition of rural roads is a critical constraint to the development of the agriculture sector. Cross-Country experience has shown that investment in rural roads has a bigger impact on production than investment in research/extension.

Reforms in the Road Sub-sector

(i) Institutional Reforms

Institutional reforms date back to the early 1970s. In an effort to improve and maintain the road network the Government adopted the Mobile Maintenance System (MMS). However, a 1988 study review noted that upward reporting channels were confused (particularly in the regions), plans were not realistic and not based on budget levels and technical issues were tackled at the expense of human resources.

(ii) Financial Reforms

In 1985, Parliament approved the Road Tolls Act and in August, 1991, the GOT established a Road Fund. The Fund was created to "cover the costs of rehabilitation and maintenance of the major and core roads", with finance being raised from:

- Road tolls imposed on fuels, diesel and petrol sales
- Various levies and duties on motor vehicles, such as licenses, registrations and transfer of vehicles.

The road reform is based on four building blocks.

- Stakeholder involvement (ownership)
- Adequate and stable funding (financing)
- Clearly defined responsibility (responsibility)
- Sound business practice (management)

The Government also established TANROADS as a semi-autonomous body entrusted with the responsibility of developing and maintaining part of the road network.

The local authorities are responsible for the district, urban and feeder roads. Currently the rural road network (feeder and rural) is allocated about 60% of the road fund. Approximately 30% is distributed through PO-RALG and a further 30% will in the near future be distributed through TANROADS.

3.6 Water Supply

3.6.1 Water supply coverage is only about 50% in rural areas, out of which 30% is partially regular¹⁷. Data on the incidence of water-borne, water-related and water-washed diseases indicate that these are prevalent where people use contaminated water or have little water for daily use. Such diseases account for over half of all diseases affecting the population. Thus the rural poor have limited access to clean water for sanitation and domestic consumption.

3.6.2 The on-going sector reform has redefined the role of the Ministry of Water and Livestock to that of coordination and facilitation, rather than provider of water. At the same time, the Local Government is expected to develop the capacity to co-ordinate access to safe water. Both the Ministry and Local Government will need to pursue a wide range of partnerships with both NGOs and the private sector (see Box 2 on the water and sanitation policy environment). The GOT expects the rural water supply services to increase from 48.5% in 1999 to 50% in year 2003 albeit a very modest ambition.

Box 2: Policy Environment for Water and Sanitation: TAS, NPES and the PRSP, all identify safe and adequate water provision, especially in the rural areas, as a key development concern. The government has adopted different strategies for facilitating safe water provision in urban and rural areas. The strategy focuses on private sector participation while in rural areas the focus is on cost-sharing and community participation. The Rural Water Supply and Sanitation Project in the Ministry of Water and Livestock Development, is piloting a community-based management approach. Various NGOs are also active in implementing community-based water and sanitation projects.

3.7 Health:

3.7.1 Most of the health problems in Tanzania are attributable to infectious/communicable diseases or preventable causes. Over 70% of life years lost in Tanzania are due to 10 major diseases, with malaria and prenatal/maternal conditions alone accounting for more than 40% of the deaths. Survival rates are also very low. Infant mortality rate was estimated to be 99 per 1,000 live births and under-five mortality rate to be 150 per 1,000 live births. The leading killer diseases for infants and under-five are malaria, anaemia, pneumonia and immunisable diseases. In addition,

¹⁷ URT-Prime Minister's Office *Rural Development Strategy Final Draft* (2001)

maternal mortality is still high, estimated to be 529 per 100,000 live births. The average life expectancy at birth has declined from 52 in 1990 to 48 years in 1999.

3.7.2 There is also a considerable degree of chronic malnutrition in Tanzania. In 1996, 44% of the under-five children were found to be stunted (low height for age) and 18% were severely stunted. Acute malnutrition is measured in terms of weight for height. In 1996, 7% of the under-fives were classified as wasted and 1% was severely wasted. A combined measure of chronic and acute malnutrition is weight for age. More than 30% of the under fives are underweight for their age. Data on children's nutritional status show that there has been little improvement over the past decade (see Box 3 on Policy environment on Health). Given that more than 85% of the rural labour force is engaged in agriculture, complementary investments in the health of the rural population will ensure growth in the agriculture sector. The corollary is that the worsening of health status will be devastating to the sector.

Box 3: Policy Environment for Health: Both the PRSP and the National Poverty Eradication Strategy highlight the issue of high disease burden, mortality and malnutrition. Through the PRSP, the Government has signalled its intention to pursue policies and programmes to reduce mortality. The overall goal is to improve the country's health indicators by improving the quality and availability of health services within the sector; promoting the coordination of private sector and civil society activities within the sector; increasing public health awareness through peer education in schools with a special focus on HIV/AIDS; promoting nutritional knowledge especially of mothers and encouraging community-level participation in self-help schemes related to health. There is increasing emphasis on community management of water supply. Extensive training and support will be needed to ensure communities are capable of planning, managing and maintaining village water infrastructure.

3.8 Education

Several factors contribute to slow economic performance in the rural sector despite improvement in macroeconomic indicators. One of the factors is limited education both in quantitative and qualitative terms. According to the preliminary results of the 2000 HBS, the country's Gross and Net Enrolment Rates (GER and NER) are 83.3% and 56.9% respectively. The GER for males is 85.5% while that for females is 80.9%. The NER for females is higher (60.2%) compared to 53.7% for males. Drop out rate is estimated at 6.6% (Basic Education Statistics, MOE: 2000). This high rate is because children from rural households split their time between working for money and schooling. The issue of adjusting the school calendar to accommodate farm labour requirement should be given some thought. The transition rate from rural primary to secondary schools is less than 15% national average rate. Thus the quality of education is poorer in the rural areas than in most urban schools. Indeed, rural school teachers are inadequate in terms of quality and number. School Mapping data show that rural school Teacher Pupil Ratios average 1:50 while urban school ones average 1:30. The situation is further complicated by the remoteness of rural schools and the difficulties of undertaking regular inspections and evaluations. In terms of the provision of educational materials, rural areas are usually not given priority because of difficulties with transportation and other logistical constraints. Consequently, at the end of the primary cycle, while urban school children join public secondary schools with over 50% score, most rural school children by comparison, do so with far less than 40%. Policy environment for education is given in Box 4.

Box 4: Policy Environment for Education: The TAS, NPES, the PRSP and the Primary Education Development Plan (2002-2006), all identify education as a national priority. Under the Multilateral Debt Fund, public spending on education increases significantly in 2000. This trend will continue under the PRSP, although careful monitoring will be required to determine whether increased spending is having a positive impact. Furthermore, the education sector development programme is pursuing reforms primarily aimed at creating an enabling environment for intensified rural schooling. The recent abolition of school fees for primary education, encouraging parents to contribute more towards education through matching fund arrangements, reviewing teachers' deployment criteria etc. are some of the purposeful interventions designed to increase rural enrolment and improved education quality.

3.9 Energy

The supply of domestic energy is dominated by wood-fuel (charcoal and firewood), which are the main sources of energy to both urban and rural areas. Biomass, particularly, wood-fuel, constitutes 90% of the total energy consumed in rural areas. Biomass, particularly, wood-fuel, constitutes 90% of the energy consumed in rural areas. Commercial energy sources (petroleum & electricity) account for about 8% and 1.2% respectively. Coal, solar and wind account for 0.8%. The reliance of households with very low purchasing power on wood-fuel for cooking and kerosene has negative consequences to the environment and the quality of life. There is a need to improve energy supply to the rural population, especially reducing the burden of women, and the reversal on deforestation, if energy efficiency is promoted in cooking and lighting.

3.10 Role of the Private Sector

3.10.1 The GOT is striving hard to create a conducive environment for active private sector involvement in the development of the economy. Among the recent measures taken are the tax incentives to investors, the passing of the Land Act in 1999, the restructuring of the Tanzanian Investment Centre (TIC) and the reduction of the time taken to approve investment from 100 to 14 days. The government is also engaged in active policy dialogue with Private sector institutions such as the Tanzanian Chamber of Commerce, Industry and Agriculture (TCCIA), and the Tanzania Private Sector Foundation (TPSF). In response to these policy measures, there has been a steady increase in foreign direct investment in the economy. Direct Foreign Investment (DFI) increased from US\$150.86 million in 1995 to US\$192.8 million in 2000.

3.10.2 Agriculture still lags behind manufacturing and construction sectors in number of projects and behind manufacturing, construction, mining and petroleum and communication in terms of value. Specific measures taken to promote private sector participation in agricultural activities include the rationalisation of the tax regime and provision of investment incentives; the streamlining of procedures for legal access to land; the harmonisation of agricultural legislation with those of other collaborating sectors; the establishment of the private sector development unit in the MAFS, the establishment of the Private Agribusiness Sector Support Unit (PASS); the promotion of micro-finance institutions; and the establishment of institutional arrangement for investment finance.

3.10.3 MAFS lists the following parastatials as having potential for private investments: Mbozi coffee farms with a total land area of 409.32 hectares: Ishera, Ndungu, Tukumbi, Ng'amba, Ihanda and Hanseketewe. Cashewnut Company and Factories in Mtwara, Kibaha, Likombe, Masasi, Newala, Tanita in Dar es Salaam, Lindi, Nachingwea and Tunduru. National Milling Company; Rice Mills in Isaka, Tabora, Shinyanga, Mtwara, Iringa, NMC residential properties, Mwanza maize Mill, Mtwara Hammer Mill, Wheat and Maize Mill in Ausha. Bagamoyo Farms Limited. Tanzania Seed Company (Kwamtili Estate). Rice Farm - Dakawa, Mbalari Rice Farm, Kapunga Projects, Madibira Project and Ruvu Maize Farms, Mbozi, Namtumbo Project. Wheat Farms/Workshop-Basutu plantation, Gawal, Gidagamwd, Mulbadaw, Murandja, seteet wheat Co. ltd, warret and Central Maintenance Services Centre – (CMSC). Sugar Farms: National Sugar Institute; Kagera Sugar Company limited. Agro Processing Industries: Manawa Ginneries, Pamba Engineering Limited, TANICA, Tanganyika Coffee Establishment Ltd.; and Roasting Units. Sugar mills, timber mills and the brewing industry are regarded as areas which are running well under private ownership. The tobacco industry has also responded well to liberalisation. Low world prices are affecting the cotton industry.

3.10.4 MAFS also believes that there are possibilities for private sector investment in: Establishing farm machinery and equipment plants, Operating tractor hire centres, Establishing ox training

centres, Establishing training institutes, Establishing research centres, Developing human & animal power technologies, Operating agriculture mechanisation centres, Provision/training of extension experts, Agriculture researchers and Establishing agricultural information centres.

4 SOURCES OF GROWTH IN THE SECTOR

4.1 Increasing crop productivity:

4.1.1 Tanzania has the comparative advantage in the production of many export/industrial and food crops¹⁸ (see Annex 4, table 2). Increasing farm productivity and improved marketing efficiency can further enhance this. There is a large potential for increasing production of items such as wheat and rice to replace imports and to expand food and livestock exports to neighbouring countries, most of which are likely to remain food deficit areas for the foreseeable future. However, this requires the comparative advantage to be translated into financial profitability for small holders. This may not occur if direct or indirect taxation of agricultural products is too high and/or market prices are not favourable and stable.

4.1.2 Improved seed has the potential for increasing profitability, It has been observed that yield increases of 30% are possible solely by the use of improved seed. Yet estimates of the number of farmers planting improved seed vary from only 4% up to 27%, one source of this variation might be in the definition of 'improved' since farmers are reported to re-use their own seed, even of hybrid varieties, for many years before buying replacements. The State seed multiplication schemes are defunct and private companies produce seed for only a limited range of crops in limited geographic zones. Several donors are supporting farmers groups in the production of 'quality declared seed' where researchers have been commissioned to produce pure foundation seed, which is then multiplied by the group and sold locally at a premium after quality control by the extension service.

4.2 Irrigation:

A new master plan is being prepared with Japanese consultants supported by JICA and the implementation plan has been approved in stakeholder meetings. This will be completed by 2003. If access, management, sustainability and conflicting land use demands can be addressed, there is clearly room for major expansion of the irrigated area. Water harvesting and conservation farming offers proven potential for increasing yield reliability and hence profitability in some environments.

4.3 Expanding market opportunities:

Another opportunity for Tanzanian agriculture is the expanding domestic market for food, especially for livestock products and crops with a high-income elasticity of demand. With expansion in the rapidly growing mining and tourism industries and income growth in general, domestic demand for beef, milk, and other high-protein products is likely to grow rapidly. Similarly, markets within the region and globally are increasingly becoming available as a result of Tanzania's membership of regional trade groupings (e.g., EAC and SADC) and as a signatory to international trade protocols (e.g., WTO and EU-ACP). Exploitation of these trading opportunities is central to the sustainable growth of agriculture in Tanzania.

¹⁸ Comparative advantage measures whether there is a net foreign exchange saving or earning from using domestic resources in the production of different commodities.

4.4 Growth of agribusiness:

The development of private agribusiness enterprises and a few large-scale farming enterprises in Tanzania is creating potential opportunities for strategic partnerships between these enterprises and smallholder farmers. Outgrower schemes, horticulture, floriculture, tea etc. rely upon agribusiness within economic distance so can only serve part of the rural population. It appears experience so far has been positive. There could be a problem of adequate returns for small farmers since buyers have only been able to offer a disappointing 30% of the price they offer to large commercial farms for export horticulture because of higher overheads. Development of rural transformation industries also offers potential for increasing rural incomes. Research and development of profitable options is required which can then be developed by the private sector. Possibilities include producing for the 'organic' and 'fair trade' markets.

4.5 Increasing livestock productivity:

4.5.1 The livestock development strategy stresses mainly improvements in marketing infrastructure, rehabilitation of dips and water points and health measures aimed at gaining access to international markets. Pasture and environmental improvements account for less than 4% of planned expenditure. However, some studies have shown that only an improvement in animal nutrition is likely to increase productivity at herd level. Exactly how the interventions will improve profitability for farmers needs to be clarified. Interventions aimed more at improving the efficiency of tax collection or simply controlling marketing may not result in improved farm incomes.

4.5.2 The use of the new land acts to develop private livestock farms has large potential but the social consequences need to be widely and openly debated. The policy of trying to settle migratory pastoralists is part of this, the ecological and economic consequences of which need to be fully explored. In Europe, for example, although farmers are settled, there is massive seasonal movement of livestock. The well developed transport and market system has rendered possible a farming system based on settled farmers but highly mobile livestock. Intensive livestock production, especially dairy and poultry is already being developed by the private sector with limited help from NGOs and projects. This is probably in a position to expand to satisfy the available market without much outside help beyond maintaining a favourable economic and policy environment.

4.6 Forestry:

4.6.1 The forestry department can barely manage the forest reserves, never mind the large areas of forest outside of reserves. Involvement of local people in the management of forests both inside and outside of forest reserves is being tried, but may not be a panacea. Meanwhile incremental wood production is far below the current rate of off-take, an unstable and unsustainable situation. Local management with this resource included in the DADP might encourage sustainable growth in this sector.

4.6.2 Private forestry plantations: There would appear to be large potential for private plantations. Kilombero Forests Limited, (Norwegian based) apparently the largest private forestry company operating in Tanzania, estimates its establishment costs as the lowest in the World and its profit margins the highest. It hopes to gain additional income by being granted tradable carbon offset certificates which the company estimates will cost only 10-20% of their market value. With this level of profitability the role of Government will be regulation to ensure a fair return to local rural people via employment opportunities and land rents. There are also some initiatives to develop plantations to sustainably fuel industries such as tobacco and brine evaporation which currently result in deforestation on a large scale.

4.7 Fisheries:

The rapid development of the fisheries sub-sector on lake Victoria in contrast to other sub-sectors is a clear indication of how the private sector can respond to a commercial opportunity given a favourable policy environment. In this case, the rather unregulated aquatic resource as compared to the difficulties in accessing dry land. Sustainability, environmental and social equality issues might indicate that in this case the balance is too far towards laissez-faire.

5.8 Increasing off-farm incomes:

The importance of off-farm incomes, mainly based on exploitation of local natural resources, indicates that developments in more efficient and sustainable use of these resources could be as important as developing agricultural productivity to improving rural livelihoods. Possibilities, which are already being developed in the Selous buffer zone project, include:

- Income generation by non-wood forest products
- Local income from tourism/hunting

4.9 Increasing the productivity of labour:

4.9.1 In the Rural Development Strategy, high availability of labour in the rural area is documented as a potential. Whilst in the ASDS, labour shortage is identified as a constraint. There is clearly a need to promote technologies and social change that will allow all sectors of the population, men, women and youth to participate fully and be fairly rewarded for their labour. Introduction of cost effective and gender sensitive technology to reduce drudgery and increase productivity is a possibility. Ox traction for ploughing has increased in areas where an intensive promotion exercises have taken place and broader based use of tool bars and weeders has also increased under intensive promotion in areas where ox ploughs are already well established. However, it has tended to die out once projects and their incentives stop. This indicates that profitability of this technology may be marginal without subsidies and that it is this, rather than lack of knowledge or availability, which may be constraining development. The profitability of new technology for individual farmers in a wide range of circumstances needs to be carefully assessed and information provided to farmers to help them make decisions on adoption. If there is real demand at market prices then MAFS has a role in communication between suppliers and customers. Locally produced and imported equipment is available in the country.

4.9.2 There is a possibility that mechanical cultivation by private contractors may prove economic, especially if this can ensure timely planting and if tractors can be used for weeding and other operations as well as ploughing. Anecdotal evidence points to the emergence of some private contractors using second-hand tractors on irrigation schemes. There is need for research into the profitability of this for both farmers and contractors.

5. REVIEW OF DONOR SUPPORT AND EXPERIENCE IN THE SECTOR

5.1 Scope of Donor Support

5.1.1 There are 48 projects identified by the lead ministries as on-going or in the pipeline. These have very varied widely objectives and scope, with annual budgets ranging from USD 100,000 to over USD 10 million and intervention areas ranging from a few villages to the entire country. Project life-spans vary from one to 10 years. The total financial commitment for the 48 projects is over USD 533 million. The majority of the projects are those in the sub-sector agriculture and agricultural production, followed by the area-based rural development programmes, which

addresses agriculture/livestock. The livestock sub-sector appears to receive much less direct funding, with only 4% of the estimated total annual project budgets. However, some of the 'agricultural' projects/ programmes, such as the NAEP and TARP, have a livestock component. The livestock projects mainly concentrate on marketing rather than production.

5.1.2. The World Bank and IFAD are by far the largest sources of funding, together covering 56% of total commitments and 45% of annual outlay of the 48 projects. For the agricultural and livestock projects/programmes alone, the percentages are 63% and 51% respectively. Five major donor-agencies (WB, IFAD, DANIDA, EU and Japan/JICA) represent almost 90% of the donor funding in agriculture and livestock. Several donor agencies are phasing out their support to the agricultural sector (The Bank's agriculture sector portfolio has also been dwindling and there was no project approved for the sector during the ADFVIII lending period).

5.1.3 The size (measured in financial terms) of the individual projects has gone up tremendously over the past. The majority of the projects deal with delivery of support services and technology, research, research and development (R&D) and extension. Most of the projects work or intend to work with farmer groups. Attention for farm-input supply systems, processing and marketing is less evident. Most of the projects have a component of institutional strengthening of the institution they are working in or working with, however, only ASMP and the ASPS-Institutional component focus specifically on institutional strengthening and the enabling environment. In the process of drawing up strategy and programmes, the GOT has undertaken to streamline on-going operations. The following 18 projects and programmes are analysed in detail in the 'Streamlining Study'.

On going Projects

ASDS: Institutional Support Component	DANIDA
ASPS: Irrigation Component	DANIDA
EZCORE : Eastern Zone Client Oriented Research and Extension	Ireland Aid
LAMP : Land Management Programme, Tanzania	SIDA
Mwega Smallholder Irrigation Scheme in Morogoro Region	Japan
NAEP-II : National Agricultural Extension Programme	World Bank
PASS : Private Agricultural Sector Support	DANIDA
PIDP : Participatory Irrigation Development Project	IFAD
River Basin Management & Smallholder Irrigation Improvement	World Bank
SPFS : Special Programme for Food Security	FAO
STABEX : Stability of Export Earnings Facility of the EDF	EU
TARP-II : Tanzania Agricultural Research Programme	World Bank
TLMP : Tanzania Livestock Marketing Project	ADB

New/pipeline projects

RFSP : Rural Financial Services Programme	IFAD
SAPDEP: Strategic Agricultural Partnership Development	World Bank
SOFRAIP: Soil Fertility Recapitalisation & Agricultural Intensification;	World Bank
SDSP: Smallholder Dairy Support Programme (SDSP, just started)	Netherlands
TAMSDEP: Tanzania Agricultural Marketing Systems Development:	IFAD/ADB

5.2. Observations on Trend of Donor Involvement.

5.2.1 The findings of the study on 'streamlining of agricultural projects and programmes in Tanzania' are highlighted hereunder:

(i) *Institutional strengthening*: All selected projects except the Tanzania Livestock Marketing Programme, include this activity, but their nature is very diverse. The only component that almost

all projects address (15 out of 18) is 'promotion of farmer organisations and farmer groups'. Support for 'LGA capacity' is undertaken by a number of projects, but it is mostly directly related to project activity and project area. The LAMP programme and some of the DRDPs have been dealing with land registration. As regards implementation through or support for DADPs, it should be noted that District Agricultural Planning remains an underdeveloped area. It is therefore difficult to see how the projects could play an effective role there at the present time. In general, the focus has shifted to capacity building and away from capital investment and interventions to directly increase production. A lot of effort is directed at building the capacity of organisations, with no clear idea what they are expected to do or to achieve.

(ii) *Public and private sector roles in support services*: ASDS stresses further deregulation and privatisation of farmer support services and increased 'client-orientation'. National projects like TARP-II and STABEX play(ed) a role in the privatisation of research, while NAEP and the smaller research and extension projects, like EZCORE and the irrigation projects, concentrate on client-orientation.

(iii) *Strengthening of market efficiency*: Only SOFRAIP, STABEX and the private sector oriented projects (PASS, SDSP, TAMSDEP) pay attention to this. Agricultural production technology-oriented projects hardly pay attention either to the input or to the produce marketing side.

Some projects are involved in activities which are not mentioned in the ASDS log-frame, in particular in relation to public investment. The projects involved in river basin and irrigation development invest in building and rehabilitation of water management infrastructure and rural roads. The livestock marketing project (TLMP) invests in marketing facilities (mentioned in the log-frame) and rehabilitation of railway wagons. As regards project design, about half the projects were assessed positive for *problem analysis, project logic and prioritisation*, the other half negative. The latter do not seem to have clear priorities, and/or no clear link between the activities and the stated objectives, based on proper analysis of constraints and solutions.

Institutional arrangements: The majority of the projects are attached to appropriate structures. However, some were assessed negatively as they have created parallel management and implementation units (TLMP, RFSP, TAMSDEP), or, as in the case of the two private sector projects (PASS and SDSP), the embassies of the respective donors are essentially implementing private sector support directly.

Implementation capacity: Most are appropriate for the capacity of implementers and target groups. The exceptions are NAEP-II, complex irrigation projects and the pipeline projects SOFRAIP and RFSP. In particular for the large extension projects (NAEP-II and SOFRAIP) there is a conspicuous mismatch between ambitions and implementation capacity. Most of the on-going projects are 'bureaucracy-neutral'. Only TARP-II was assessed negatively on *bureaucracy* because of the numerous consultation and approval rounds, which appear to add mainly bureaucratic burden. Three of the pipeline projects also appear to introduce new bureaucratic elements (SAPDEP, RFSP and TAMSDEP). Stabex and the private sector programmes (PASS and SDSP) were assessed positively as they actively transfer former government functions to the private sector. Especially the large nation-wide and multi-regional projects fail the *sustainability* test: NAEP-II, TARP-II, SOFRAIP and RFSP. Several (mainly bilateral) pilot projects have a good chance to be *replicable* at a larger scale, viz. SPFS, LAMP, EZCORE. For some others including the irrigation projects this is not clear. The lack of proper documentation of the experiences of practically all projects may, however, hamper this. In fact pilot projects are hardly ever scaled-up.

Productivity and profitability: Many project focus on production rather than on productivity and profitability.

Private sector: Most of the projects have little or no effective dealings with the private sector except in contracting construction work (e.g. irrigation projects). Some newer projects specifically targeting the private sector SDSP (dairy) and PASS appear to be on the right track but they need to monitor closely what activities are undertaken and what the results are. Practically all projects advocate community consultation and working through beneficiary groups. Some are trying novel approaches to effectively generate and *respond to demand*, like PASS, SPFS and EZCORE. In other cases the attention to ‘demand driven’ seems to be more ritual than related to specific activities.

Effectiveness of implementation: Those that are weak in this category often attempt to do too many things, none of them with sufficient effort to realise major achievements. Although many project documents indicate the need for *monitoring as a management tool*, there is very little evidence that effective monitoring is in place anywhere. Only the ASPS Institutional component was scored positive because it intends to help in developing M&E tools. The impression emerges that everybody thinks it is important but nobody knows exactly what to do about it. The lessons of experience from this study will no doubt influence future agricultural sector programming and implementation in Tanzania.

5.3 The Experience of the Bank in the Sector.

5.3.1 Until recently, agriculture has been one of the most important sectors in the Bank Group portfolio in Tanzania. As at 31 March, 2002, there were 19 agricultural operations undertaken by the Bank in the country, out of a total of 81 operations (or 24% of total) and amounting to UA 132.88 million or about 18% of cumulative Bank commitment in Tanzania. The Bank Group assistance to the sector has been in support of food security, mainly in the areas of irrigation development, livestock production and marketing, sugar factory development, agricultural research and extension, and recently, wildlife conservation. Some of the projects financed by the Bank include the Dakawa Rice Development (total UA 17.06 million), the Kapunga Rice Irrigation (UA 47.28 million), and the Madibira Irrigation (UA 21.92 million). Others include the National Agriculture and Livestock Research (UA 6.17 million), National Agriculture and Livestock Extension Rehabilitation (UA 6.52 million) and the Livestock Marketing (UA 9.21 million). In Zanzibar, the Bank financed the Zanzibar Rainfed Rice Development Project (UA 7.37 million). The Selous Game Reserve Project (UA 5.91 million) is one of the active projects. Major studies financed by the Bank include the Kapunga and Madibira Rice Study (UA 1.2 million), Morogoro Village Irrigation study (UA 0.5 million), Dodoma Livestock Development study (UA 0.51 million), Dakawa Integrated Irrigation Phase II study (UA 0.5 million) and the Kagera Sugar study (UA 0.61 million) and the special Food Security programme. Annex 8 gives the Summary of Bank Group operations in Tanzania. The financing had come mainly from concessionary ADF resources including grants (TAF).

5.3.2 Assessment of the performance of these projects in meeting their targeted development objectives as well as overall general performance has been mixed (fair to satisfactory, with overall assessment below 2.0). The projects no doubt contributed to food security and employment creation in the sector. However, there were long delays in meeting disbursement effectiveness and even more time overruns in the actual implementation, with most of the projects exceeding 10 years span (Zanzibar Rainfed Rice and Smallholder Rice Development). The projects took so long to implement that by the time of completion, the policy orientations had changed fundamentally. One possible lesson is the need to constantly review projects in light of major shifts in policy orientations. Hence there is need for more flexibility in project designs. Also, designs of the earlier

projects were too complex with high investments costs (e.g Kapunga Irrigation Rice Project). The actual disbursement ratios as against appraisal estimates were often very poor. The corollary would be slow flow of project benefits and thin development impact. Other problems with implementation included poor counterpart funding, weak implementation capacities, and poor experience in procurement procedures of the Bank. Submission of audit reports was unduly delayed. Stakeholder consultation during programme formulation was poor and where credit was involved as in the Zanzibar Rainfed Rice Project, repayment was very poor (27%).

5.3.3 The main strength of the Bank Group is in the provision of capital sums for discrete investments aimed at poverty reduction. However, due the inability of the Bank to effectively follow-up on training of project management teams on Bank disbursement and procurement procedures, earlier Bank projects in the agricultural sector of Tanzania such as the Livestock Marketing Project and the National Agricultural and Livestock Extension Rehabilitation Project were characterised with slow disbursement and unimpressive implementation results due to problems of country technical capacity to implement and the poor status of national infrastructure such as communication, road and Banking. To-date, the Bank lacks a permanent presence in Tanzania and relies upon Government for follow-up actions even under situations where resources are lacking in the Ministries to provide adequate follow-up. Project management problems are made worse by the rapid mobility of competent staff. In spite of these negative effects, major impact was made in the area of institutional building and capacity development, at least at the project level. Bank supervision missions and in country training in project management including procurement and disbursement have improved in the past two years. It must be emphasised that capacity building for the implementation of Bank projects in country will remain important for Bank success. In spite of earlier failures, on-going ADB intervention in the management of the Selous Game Reserve and its buffer zones is proving to be a success. This project that became effective in March 1999 is showing that Bank projects can make high positive impact in poverty reduction if standards are maintained at project preparation and Implementation Units supported with the needed technical assistance to improve compliance with Bank financial management and procurement procedures. Also the use of viable farmers' union for credit delivery in the Madibira Project seemed to have worked well. The use of technical assistance in project implementation can still be justified in Tanzania.

5.3.4 As noted earlier, the strategic areas of bank assistance in the past has focused mainly on support towards irrigation development for food security, research and extension services and provision of complementary credit. Bank experience in these thematic areas is discussed below.

5.3.5 Irrigation Development: Past Bank support were both for large scale and small scale irrigation schemes. As has been pointed out, these projects contributed to food security at the periods of their implementation, but could not be sustained due to government policies/strategies that were not in line with the programmes. There were no appropriate support services to the farmers and the decision to privatise the NAFCO even before appropriate arrangements were made for transfer of services to the private sector contributed to the collapse of the irrigation investments in the country. The GOT is currently preparing an irrigation master plan. Further investment in the sub-sector will need to await the outcome of these studies that are expected to be fully discussed by stakeholders.

5.3.5 Research and Extension Services: Bank support was mainly centered on rehabilitation of infrastructures, training and institutional strengthening development. While these were largely achieved, there has been little documentation on the contribution to the broader theme of research, or quality of extension services provided, especially in the areas of integration of crops and livestock, soil fertility improvement and natural resource conservation. The GOT still places emphasis on research and extension as core priorities. Except for support in the Zanzibar, further analysis on appropriateness of investment in research will be necessary.

5.3.6 Credit: Most of the projects had credit components. However, repayment was often a problem, as evidenced in the Zanzibar Rainfed Rice Project. Despite the continuing needs, especially with removal of input subsidies, viable farmers associations and appropriate mechanisms will need to be put in place if the Bank has to fund credit in future. In the Zanzibar, a study will be necessary to evolve proper solution for credit administration in the area.

5.3.4 The 1996-98 CSP did not provide for investment in the agriculture sector following the decision to consolidate on-going programmes. The CSP update however provided for investment in the natural resources sub-sector which led to the formulation of the on-going Selous Project. Also the 1999-2001 CSP made little or no provision for agriculture because of the decision of the GOT and the donor community for a need to produce an appropriate strategy and programmes for the sector. Now that these have been achieved, donor participation, including Bank Group assistance in the sector is expected to be revived.

6. PROPOSED BANK STRATEGY FOR THE SECTOR

6.1 Review of GOT's Agricultural Sector priorities

6.1.1 The ASDS, which was developed in a participatory forum, and which has received widespread donor support documents clearly Government goals and strategies. The Government has moved from the goal of promoting agricultural *development* to facilitating agricultural *growth* based on private investment. This is not just a change of wording, but a conceptual shift from attempting to move all farmers forward in a more or less egalitarian way to creating an environment which will stimulate growth of private farming. In the context of Tanzania with only about 500 medium scale private farms and about 4 million small holders, of which about half are considered to be living below the poverty line, there is the risk that in pursuing this strategy the poorest of the poor may be left behind.

6.1.2 The division between subsistence and market-oriented farmers never really existed. Everyone has an interest in the cash economy and would sell their agricultural products if they could. However, previously the terms of trade were so poor they simply could not. Government, by maintaining low food and hence producer prices in the interests of national food security reinforced this. Farmers have always had an income generation oriented approach. It is the wherewithal to achieve it that was lacking. The acceptance of this by Government and the move towards liberalisation of the market is a step in the right direction.

6.1.3 However, there is a risk that policies and the investment that follows these may effectively subsidise the better off (here any holding over 5ha or more than 100 LSU) and actually discriminate against the mass of small mainly subsistence farmers. This could be through the provision of roads mainly to economically important areas for example, though of course it is much easier to justify road construction if an immediate economic benefit can be found. The balance between fair treatment of all sections of the population and economic returns of national importance needs to be found and enshrined in policy. The ASDS does not specify this balance and there might be a temptation to achieve short term goals by going for a high rate of GDP growth by concentrating resources on a few profitable sectors; rather than accepting a slower rate of GDP increase and ensuring poverty reduction and gender equality objectives.

6.1.4 The critical assumptions in ASDS regarding the inherent strengths of Tanzanian agriculture which the GOT intends to exploit are examined one by one.

1. Comparative advantage in the production of its major export and food commodities.

The basic assumption in the ASDS is that with the right economic environment, a range of profitable technologies for producing crops, including food crops grown for home consumption and sale, exist for all or most farmers. The farm models given in the URT/WB report indicate that this could be possible. However, models for livestock producers, except the dairy sector, have not been analysed. Production costs are low, but marketing costs are very high for the extensive pastoral system. So reducing marketing costs is a promising. However estimates of how the large investments proposed in market infrastructure will affect marketing costs, especially since some or all of this infrastructure is to be privately run are not available. The crop farm models used seasonal maximum price, not at harvest farm-gate price. In some cases it is just the current lack of integration of markets, which has maintained favourable prices for farmers in the face of imports. In the case of rice it is the 30% import levy, which makes rice production profitable, will this levy be maintained?

Past experience of investment in irrigation has been mixed due to management, environmental and access problems, compounded by land disputes and problems of cost recovery/funding recurrent costs. The profitability for small scale farmers may be doubtful if all or some costs are passed on to them. The new Masterplan currently under preparation should form the basis for future investment in this area.

Data on profitability of livestock production at farm level, are lacking, studies are needed on this and of the investments which will increase this. The current emphasis on market infrastructure and construction of dips does not seem to be based on farm level models.

2. Large human capital (population) base that is and will continue to be involved in agriculture but currently has a very low productivity.

This can be confidently anticipated.

3. Underused and abundant natural resource base

This very important assumption is examined further in Annex 3. Although, nationally there is certainly room for expansion of the utilisation of the resource base. This may not be the case in the highly populated areas where the majority of the population live. This assumption requires careful monitoring.

4. Existing political commitment to improve agriculture's policy environment through adjustment and structural reforms and the creation of appropriate incentives to attract private investment in agriculture.

This is under the control of URT

5. Domestic and International trading opportunities created through membership of regional and international trade groupings and protocols

It seems very likely that this assumption is correct in that groupings and protocols already exist. Previously government policies inhibited the trade of so called food crops but is now committed to liberalisation.

6. Potential opportunities exist for forging strategic partnerships between agribusiness enterprises and smallholder farmers.

One of the assumptions of the ADSD is that agribusiness will build strategic partnerships with smallholder farmers. This is to be promoted by attractive incentive packages to agribusiness. In the log-frame, the only activities on this are output 4.6 to promote and support out grower schemes using farmer organisations as intermediaries between agribusiness and smallholders, and 4.7 to devise and implement specific investment packages for promoting farming/contract-farming schemes and rural agro-processing industries.

Experience in outgrowers schemes is limited and confined mainly to 'cash' crops. However, the activities of the NGO FAIDA in Tanzania which acts as a broker between agribusiness and farmer groups Farmer Controlled Enterprises (FCE) have been highly successful. The small number and limited geographical coverage of agribusiness clearly sets a limit on the number of smallholders who can take part in this in the short term. This assumption requires careful monitoring of its overall effect on poverty reduction.

7. Political commitment to developing structures at district and community level for decentralised planning, execution and monitoring of local programmes under the auspices of LGRP

Political commitment exists already, but this may not be sufficient to institute the entirely new modus operandi of the lead ministries. The redrawing of the role of local government to be the implementing agency of all policies and programmes whilst the traditional Ministries provide policy guidelines, negotiate donor-funded programmes and monitor outcomes poses certain risks. Firstly real 'bottom-up' planning may be difficult to achieve leading to programmes designed by technical experts and then only modified at grass-roots level (ref. DFID 2000). Secondly LGA staff might easily become overloaded or may knowingly agree to over ambitious programmes from the multiple Ministries since it will be difficult for a particular LGA to turn away funding, when this is believed to be the main constraint. Thirdly the LGA and Ministries might avoid responsibility for under-achievement by blaming each other.

The formation and function of the Inter-ministerial Coordination Committee and Technical Ministerial Committee to monitor this process and the formulation of DADPs will require careful monitoring.

Ideally the LGA should be empowered to take responsibility with the negotiated option of contracting services from the Ministries. Thus ministry activities will be demand driven and various activities will grow or shrink according to the demand for them. The real commitment of the lead ministries will be shown by their willingness to contract their structures if, or as the private sector takes a larger role in providing technical expertise to the LGA.

In principle investment should be made as close to the client as possible, with clear knowledge of the likely effects on all sections of the community, particularly the mass of smallholders, poor people and women. This principle applies to extension services in particular since other public investments like research are likely to be led by the extension services. The continuing connection between LGA supervised staff and their parent ministries for career development, training etc. is likely to lead to them concentrating on nationally run programmes rather than small scale local initiatives. In addition they may show continued bias towards their parent Ministries' field, for instance crop production, rather than acting as facilitators of change who may have an additional particular expertise to offer.

6.1.5 Analysis of the assumptions of the ASDS also reveals that the lack of integration of natural resource conservation and forestry into the strategy for the agricultural sector is a serious constraint. The GOT has identified 5 broad priority areas in the ASDS. These are:

1. Strengthening the institutional framework;
2. Creation of a favourable climate for commercial activities;
3. Clarifying public and private roles in support services;
4. Improving net farm returns through marketing inputs and outputs; and
5. Mainstreaming planning for agricultural development in other sectors

These must form the basis of the Bank Group assistance to Tanzania.

6.2 Focal Areas for Bank Group Assistance

6.2.1 The main strengths of the Bank Group are in the provision of capital sums for discrete investments. The converse of this is the weakness of the Bank Group in long term follow-up actions requiring slow disbursement on many diverse items which it may be difficult to quantify and detail in advance. This is not surprising in that the Bank lacks a permanent presence in most countries and relies upon Government for follow-up actions. In the case of Tanzania, the Ministries lack resources to provide adequate follow-up. The situation is made worse by the rapid gravitation of competent staff towards new projects once the investment stage of a project is over. The ASDS seeks to redress this, but for the period covered by this review, the existing problems will remain. Bilateral and NGO projects with a high TA content, providing long-term slow disbursement under constant review and which can readily be re-directed are the best way of supporting follow-up type of actions.

6.2.2 In Tanzania the example of small-scale irrigation development at Kitivo illustrates the problem perfectly, despite successful disbursement of Bank funds, the impact of the project has been negated by lack of support to farmers to address environmental and social issues arising during use of the schemes. The Ministry is now seeking investment funds for 'rehabilitation' of the scheme.

6.3.3 The Bank should therefore concentrate on discrete investment within the 5 priority areas identified in the ASDS, and to include natural resources/forestry management. On the basis of the above analysis, it is recommended that the Bank Group support to the agricultural sector in Tanzania should be focused on the following areas:

- (i) Institutional strengthening and capacity building, aimed at productivity increases at the farm level, improving planning capacity at the local level (districts and farmers) and supporting monitoring and policy design capacity at the national level.
- (ii) agricultural marketing and agro-processing, aimed at adding value to production and enhancing household returns, facilitating off-take and regional and international trade; and
- (iii) natural resource management for sustainable development, with active participation of the local communities.

6.3.4 The financial resources available as well as the financial requirements for fully implementing the priority activities for poverty reduction in the agricultural sector have been elaborated in the MTEF (2001/2 – 2003/4) and the 2001 PER exercise for the Ministry of Agriculture and Food and Security. The resource gap (which is the difference between the financial requirement and the budgeted allocation) is considerable (see tables 3 and 4). It is expected that this gap will be filled from the financial inflow from bilateral and multilateral institutions. The Bank

should be willing to participate since the GoT's policy and programme thrust for poverty reduction and particularly the broad-based growth with equity, private-sector driven, small-holders focussed agricultural sector development strategy of the GOT is in consonance with the Bank's Vision for Poverty reduction as well as agriculture and rural development sector policy.

Table 3: Resource Requirements for Critical Agricultural Services
(Millions of Tshs.)

Programme	2001/02	2002/03	2003/04
Extension Services (Crop & Livestock)+	2,891	2,876	2,737
Research Services+	323	302	382
Plant & Animal Pests & Diseases Control	2,200	2,500	2,500
Agricultural Training Institute	1,800	1,900	1,900
Information Services	800	1,100	1,100
Cooperative Promotion	600	650	700
Agricultural Inputs Trust Fund	796	600	1,626
Total	6,573	7,110	8,279

Source: United Republic of Tanzania (2001) *MTEF, Ministry of Agriculture and Food Security*, United Republic of Tanzania (2000) *Guidelines for the Preparation of the Medium Term Plan and Budget Framework for 2001/02-2003/04*

+Based on full costing

Table 4: Resource Allocation, Resource Requirement and Resource Gap
(Millions of Tshs.)

	2001/02	2002/03	2003/04
Proposed Allocation			
Recurrent Expenditure	6,531.2	8,817.6	10,580.4
Development Expenditure	2,271.0	2,299.8	2,587.2
Total Proposed Allocation	8,802.2	11,117.4	13,167.6
Resource Requirement			
Recurrent Expenditure	6,573.0	7,110.0	8,278.7
Development Expenditure	30,131.0	34,242.0	38,950.0
Total Resource Requirement	36,704.0	41,352.0	47,229.0
Resource Gap	27,901.8	30,234.4	34,061.4

Note: Development expenditure requirement include foreign component while proposed allocation for development include only the local component.

Source: United Republic of Tanzania (2001) *MTEF, Ministry of Agriculture and Food Security*, United Republic of Tanzania (2000) *Guidelines for the Preparation of the Medium Term Plan and Budget Framework for 2001/02-2003/04*

6.3 Strategic Options for Bank Group interventions

6.3.1 The Bank's operational strategy will be guided by over 20 years of agricultural programme/project implementation experience in Tanzania, as well as cross-country experiences in the African region and best practices worldwide. This will be anchored on the key strategic priorities of the Bank's Agriculture and Rural Development, including the following:

(a) accelerated agricultural growth and food security: One of the main indicators of increased poverty at the household and at the national level is food poverty. Bank support will first and foremost aim at programmes which address food security and equity amongst beneficiaries both at the household and country level. Programmes and projects will support the on-going GOT's efforts to define national food security strategies that involve balancing domestic production and commercial imports of food, and promoting an enabling policy, institutional and legal environment in the country. The Bank will finance interventions that will assist the country to develop and finance agri-business and agro-industries; and to develop markets, promote exports and regional cooperation and integration.

(b) sustainable natural resources management: Bank support will aim to protect the environment and promote environmental friendly practices and maintaining bio-diversity. It will aim to put in place frameworks not only to achieve an efficient balance in the productive use of land and water based natural resources for poverty reduction, but also to seek improvement of environmental conditions as a way of stimulating non-traditional agricultural development. The success so far recorded by the Selous Game Reserve will be replicated.

(c) complimentary support services: In order to achieve all the above mentioned priority areas effectively, the Bank will mainstream complimentary support services, including rural road networks (access and feeder roads), rural energy supply, and potable water supply. The strategy will include support for livestock infrastructure and rural marketing facilities. Bank financed programmes will analyse and provide advocacy for HIV/AIDS awareness and support systems through appropriate institutions.

(d) human and institutional capacity building: Bank strategy will aim at increasing grassroots capacity building and strengthen rural institutions and associations and increase the supervisory, management and implementation of line agencies, local private sector agencies and NGOs for policy and programme formulation and implementation. In the short term, emphasis will be focused at the grassroots/districts and farm levels. *The strategy will be to mainstream support for institutional and capacity building as components of planned programmes and projects rather than financing stand alone capacity building programmes.* The use of technical assistance has proved to work well in Tanzania. Support will also be given to gender sensitisation training and strengthening of civil society participation in programme formulation.

(e) technology development and transfer: providing support for farming systems research to promote better understanding of, and applied technology development for, improved resource allocations at the farm level; and support extension systems for increasing client participation in programme targeting and implementation of specific demonstrable approaches in agriculture. Here Bank resources as a priority will focus on rehabilitation of research and extension systems in the Zanzibar.

The guiding principles of these strategies are summarised below:

- A sector-wide approach (in contrast to the programme/project approach), based on full national ownership of the process, aimed at food security and improvement in beneficiary incomes;
- Forging strategic partnership with the GOT and other development partners to articulate and implement well defined sector programmes and projects with clearly defined targets and measurable performance indicators;

- Continuous policy dialogue with GOT to deepen macro-economic adjustment and structural reforms to create a conducive environment for private sector participation in upstream and downstream agricultural activities;
- Capacity development towards empowering local beneficiaries by giving them the voice and the means to set their own priorities and manage their own development in line with the Country's PRSP.
- Promoting decentralised management, and effective MIS development;
- Mainstreaming gender in agricultural development;
- Promoting new initiatives, such as private sector lending window, and the micro-finance program under AMINA; and
- Supporting interventions that increase agricultural productivity per unit of resource used and halt practices that "mine" the resource base beyond its regenerative capacity.

6.3.2 Consideration of Bank strategy and the ASDS leads to the following areas of convergence being identified:

- Raising farm level profitability by improving marketing through rural roads and other capital investments in synergetic partnership with GoT and other donors providing long term extension and other follow-up services. The serious lack of female agricultural extension staff and female trainees of agricultural colleges will require urgent attention.
- Supporting the attempts of government to mainstream gender into the agricultural sector, particularly by supporting the capacity of gender focal points both at central and local government levels.
- Raising farm level profitability by investments in measures to ensure the reliability of cropping, such as irrigation, water harvesting and conservation measures. However, only if on-going support to farmers is assured by either partnership with other donors or establishment of a competitive grant system to provide such services for a minimum of 5 years after construction work is finished. In the case of irrigation investment decisions should await the completion of the National Irrigation Masterplan.
- Supporting research and extension aimed at raising farm level profitability through competitive grant systems through which service providers, Governmental and private sector can be funded.
- Raising household income by improving natural resource management including forestry for wood and non-wood products, building on the Selous Game experience and moving into non-protected areas.
- Capacity building, directed at measurable, discrete goals at household level. Key areas are developing capacity at the LGA and farmers level for productivity improvement and programme planning; and at the national level for monitoring policy and programme formulation and implementation.

6.4.3 Raising household incomes by measures aimed at ensuring fair participation of all sectors and both sexes of society in both production and consumption is an important goal of policy development, to which the Bank should contribute by participation in discussion fora.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

7.1.1 The ASDS developed by the three lead Ministries with participation by other ministries, representatives of the farming community and donors will guide development of the sector. However, coordination with other actors, especially those under MNRT is required. The legal and regulatory environment are the core functions of these Ministries. Projects should team up in supporting these core functions to enable the lead ministries to become more than just a collection of donor funded projects.

7.1.2 Agricultural ministries and donors should increasingly focus on the design and implementation of programmes aimed at improving agricultural productivity. More attention for crop specific strategies should be considered especially in identifying and providing the right fiscal environment for a range of profitable technologies for differing farm types. Research is required on the profitability of various technologies and enterprises at the farm level.

7.1.3 The enthusiasm for decentralisation and participation will need extensive support, in particular, implementation of agricultural development through District Agricultural Development Programming (DADP) is hampered by the fact that DADPs are practically non-existent. It is at this level that all the elements essential for improving the lot of the rural poor including women come together. Funding via LGA with the lead ministries contracted by them to provide support services would reinforce decentralisation. DADPs should address the dangers of irreversible environmental degradation. This is an area requiring large investment in capacity building at local and farmer level.

7.1.4 Interventions in marketing have the potential for improving profitability for farmers, but need to be very specifically targeted with a clear goal in mind. Interventions aimed more at improving the efficiency of tax collection or simply controlling marketing may not result in improved farm incomes. The implications of policy decisions needs to be researched, capacity building in this area is necessary.

7.1.5 The importance of off-farm incomes, mainly based on exploitation of local natural resources, indicates that developments in more efficient and sustainable use of these resources could be as important as developing agricultural productivity to improving rural livelihoods. Wildlife reserve buffer zone management is an example of this. Extension of a sustainable rural livelihoods approach to natural resource conservation throughout the country is essential in the long term.

7.1.6 Many studies have shown that women, although providing most of the farm labour receive a discouragingly small share of the proceeds. Labour is an important constraint and a constraint that is likely to become more stringent with HIV/AIDS. Interventions aimed at reducing female drudgery and increasing their share of income are needed. The creation of an environment favourable to fully integrating all productive members of the community is required. Research and capacity building to enable GoT to provide this environment are required.

7.1.7 It should always be borne in mind that the cost of intervention has, eventually, to be paid by the stakeholders and there may be instances in which the best approach is not to create or perpetuate 'capacity', but to do nothing.

7.2 Recommendations:

7.2.1 On the basis of the review and analysis of the GOT's agricultural sector strengths and priority areas already proposed by the Government in the ASDS, it is recommended that the Bank Group support to the agricultural sector in Tanzania be focused on the following areas:

- (iii) Institutional strengthening and capacity building, aimed at productivity increases at the farm level, improving planning capacity at the local level and supporting monitoring and policy design capacity at the national level.
- (iv) agricultural marketing and agro-processing, aimed at adding value to production and enhancing household returns, facilitating off-take and regional and international trade; and
- (iii) natural resource management for sustainable development, with active participation of the local communities.

7.2.2 While the above recommendations apply to both the mainland and Zanzibar, it is also recommended that implication of poor micro-credit delivery in the Zanzibar be further studied with a view to relieving the constraints of access to micro-credit by rural farmers.

7.2.3 In pursuing the above strategies, over and above developing capacity at the local level, more sector specialists would also need to be trained to develop the needed skills for project planning, monitoring and management. Bank financed projects/programmes would also promote women integration into national extension system and senior cadres of agricultural sector management. Agricultural Research Institutes especially in the Zanzibar and urgently need rehabilitation for effectiveness. Improvement of rural roads is important to marketing and profitability of family investment. Bank investment in other complementary sectors of the economy that have direct impact in rural welfare such as the health, education and energy sectors will remain important in ensuring the availability of skills in rural areas to manage growth technologies and agricultural sector development as a whole. The tax system will require further reforms and harmonisation by the GOT in order to create incentives for production and eliminate distortion of the production systems, both in livestock and crop sub-sectors.

7.2.4 The explicit strategies for Bank Group support will be through:

- A sector-wide approach (in contrast to the programme/project approach), based on full national ownership of the process, aimed at food security and improvement in beneficiary incomes;
- Forging strategic partnership with the GOT and other development partners to articulate and implement well defined sector programmes and projects with clearly defined targets and measurable performance indicators;
- Continuous policy dialogue with GOT to deepen macro-economic adjustment and structural reforms to create a conducive environment for private sector participation in upstream and downstream agricultural activities;
- Capacity development towards empowering local beneficiaries by giving them the voice and the means to set their own priorities and manage their own development in line with the Country's PRSP.
- Promoting decentralised management, and effective MIS development;
- Mainstreaming gender in agricultural development; analysis of implication of HIV/AIDS in programme and project implementation and providing advocacy support through appropriate health institutions;

- Promoting new initiatives, such as private sector lending window, and the micro-finance program under AMINA; and
- Supporting interventions that increase agricultural productivity per unit of resource used and halt practices that “mine” the resource base beyond its regenerative capacity.

FOLLOW UP ACTION

Since after the Review mission, the GOT has now released the Draft Agricultural Sector Development Programme¹⁹. It will be recalled that this Document is a logical follow-up from the Agricultural Sector Development Strategy. While the GOT and donors are reviewing this report, it is imperative that the programmes requiring Bank Group support will emerge from this document.

¹⁹ Dated 15 March, 2002.

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ANNEX 1

MAP OF TANZANIA

Annex 2: Zanzibar: Agricultural Status

i) natural environment

Zanzibar, comprises two sister islands Unguja and Pemba and 14 smaller islands. The total area of both islands is 2,643 km² (Unguja 1,658 km² and Pemba 985 km²). Zanzibar was once covered by dense natural forests but only small remnants remain. The climate is equatorial with temperatures ranging from 20 –35°C. Rainfall, totalling 1500-1900mm is bi-modal and there is the possibility of dry periods in July/August and January/February. Much of the islands are covered by deep fertile soils suitable for plantation and food crops. Areas with shallow soils 'coral rag' support only temporary shifting cultivation and grazing lands. Hydromorphic soils in valleys are suitable for rice production.

ii) population

The total population is estimated at 850,000 (1998) with a growth rate of 3% per year.

iii) socio-political and institutions

The Government of Zanzibar is in control of all island affairs except defence, foreign and home ministries. The islands were heavily dependent upon donor support, 80% of public investment 1987-91 were donor funded. Donor support has been limited since problems with the 1995 elections, acceptance of the validity of the elections held in 2000 was also limited. The islands have adopted a strategy of encouraging private investment and the Zanzibar Investment Promotion Agency (ZIPA) was established to do this. Investments approved by ZIPA are subject to a 10 year tax holiday on all imports and profits. Tourist hotels have seen the largest investments in recent years. This is now the largest foreign exchange earner, but political violence early in 2001 has had an adverse effect on visitor numbers.

Land ownership in Zanzibar is very complicated due to the complex history of the islands, tree crops like cloves may be owned independently of the land and joint ownership is common (from the Islamic 'waqf'). Land redistribution since 1964 spread ownership more widely. Land ownership is administered by the Commission for Lands and Environment (COLE) established in 1989 as a single body to govern land activities in the Isles The first draft of the Land Tenure Act was prepared in 1990 by the Committee of Zanzibari land professionals under the guidance of Prof. Norman Singer. The LTA became law in 1992 .Following the new Land Tenure Act, the Decrees that were passed after the revolution to govern land activities were repealed. The prime focus of this Act was to strengthen the security of tenure, to activate the land market and to unify and regularise the system of land holding in the country. The act also specified the importance of registering land for ease of land transfer.

“The most important aspect of LTA as far as poverty alleviation efforts are concerned, is the fact that all land in Zanzibar occupied or unoccupied is public property but under the President’s custodianship. This assures the poor that their access to land is always guaranteed whenever the need arises” (quotation from COLE).

Community management of common resources is being developed for example, Misali Island, to ensure sustainable and balanced use between traditional fishing, tourism and conservation.

2. Economic assessment of the sector

i) overall importance

Agriculture is the most important sector in Zanzibar. It contributes about 75 percent of foreign exchange earnings, employs about 60 percent of the labour force and provides 30 percent of tax revenues. Exports of cloves still provides the most important source of cash income, even though its contribution to total GDP dropped during the 1990s with declining prices and the rise of non-traditional crops , especially seaweed, and other sectors i.e. tourism. Agriculture’s contribution to GDP is about 40%.

ii) **production systems, growth potentials, productivity and sustainability**

The average landholding of the cultivated area covering 70% of the farms is about 1.6 ha; the remaining 30% of the holdings are less than 0.8 hectares. About 5.4% of all rural households own no land and rural off farm employment opportunities are almost absent. Thus landlessness and the consequent vulnerability to poverty is an issue of concern to policy makers.

Export crops, mainly clove, cover about 40 percent of the total cultivated land. The Zanzibar State Trading Corporation (ZSTC) has a monopoly in marketing cloves and paid low prices to producers, however, in July 2001 it increased clove prices by 66% and vowed further that in future it would be purchasing the crop in accordance with the world market price in order to promote the product. However, clove smuggling still remains a problem for the country. Other cash crops include coconut, seaweed, fruits and spices. The remaining 60% of the area is under food crops. Cassava, the major staple crop, is grown by virtually every rural household, bananas, sweet potatoes, legumes and maize are also important. Rice, the preferred food, is grown wherever there is suitable land. Except for rice, all other crops are inter-cropped in complex associations, often under tree crops. Annual food crops production fluctuate widely and, with the exception of rice, which is divided into 0.1ha parcels and farmed under state control, there has been a general decline in both planted area and yields of all major crops during the 1990s. Zanzibar and Pemba have about 17,000 ha of ricelands, 5000 ha of which are suitable for irrigation, about 1000 ha are currently under double-cropped irrigated production. Low soil fertility, and RYMV are serious constraints. The profitability of all crops is low and income from this source barely sufficient to support a family. It is documented that the 0.1ha irrigated rice parcels are too small to support a family without other income sources. Seaweed collection from the wild started in the late 1980s but much of it is now 'planted' and later harvested at low tide, before being dried for export.

The clove harvest follows a 3-4 year cycle and this has a big impact on the performance of the agricultural sector from year to year. Thus the agricultural sector grew by 7.0% during 1999 compared with a decline of 4.5% recorded in 1998. The share of agricultural value added in the total GDP increased slightly to 25.9% in 1999, from 25.2% in 1998. The improvement in the agricultural sector in 1999 was brought about by improvement in the production of cloves that recorded a huge increase, from 204.0 tons collected in 1998 to 8,027.3 tons in 1999 which was a peak production year in the cycle. Copra production also increased more than three fold, from 93.6 tons in 1998 to 296.4 tons in 1999. The production of seaweed increased by 42.4% from 3,394.0 tons in 1998, to 4,834.0 tons in 1999. However, chillies production declined by 35.5% to 0.2 tons, from 0.3 tons during 1998. Clove stem output also decreased by 4.5% to 19.0 tons, from 20.0 tons produced during 1998 (see table 1)

Table 3: Marketed Production of Zanzibar Major Export Commodities (Metric Tons)

Crop	1995	1996	1997	1998	1999	% Change 1998 to 1999
Cloves	1,576	10,339	2,506	204	8,027	3,835.0
Copra	2,780	2,223	1,207	93.6	296	216.7
Chillies	1.1	3.5	0.2	0.3	0.2	-35.5
Clove stems	251	1,624	771	19.9	19	-4.5
Seaweed	4,287	4,961	3,667	3,394	4,834	42.4

Just over 50 percent of Zanzibar households own livestock and 23 percent own low producing indigenous cattle. Livestock contribute 12% of Zanzibar GDP. Cattle provide high protein diets, draught power, serve as a live bank and are important in many religious and social functions. At present average annual consumption per capita of red meat and milk is estimated at 3 to 4 kg and 11 litres respectively. Cattle and goats slaughtered for urban markets have, in recent years, averaged 5000 and 4000 head annually. Climatic and ecological limitations constrain horizontal expansion of this sub-sector. The total eradication of tsetse fly from the islands was recently achieved.

Fisheries constitute an important productive sector, contributing about 2.5% of GDP and 6.3% of agricultural GDP. Fish is Zanzibar's main source of animal protein with an average annual catch of 11,000 tonnes between 1992 – 1995. About 99 percent of the catch are consumed locally. Annual per capita fish consumption is estimated at 12 kg. Fish contribute 100 percent of the animal protein supplies for lower income families and about 22 percent of average family expenditure on food. In view of this important role, further exploitation of small-scale coastal fisheries and offshore fishing is considered an important untapped potential area for sectoral investment.

Trees and forests are fundamental to food security and Zanzibar needs to conserve her natural forests at any cost. Many documents revealed The only remaining outstanding natural forests are Jozani and Ngezi Forest Reserves. These forests harbour a significant number of animal species that have international significance such as red colobus monkeys (*Colobus badius kirkii*), Pemba flying fox (*Pteropus voeltzkowii*), and Ader's duiker (*Cephalopus adersi*). These forests contain a remarkable variety of habitats with high biological diversity and endemism and have a high tourism potentiality. Before 1995 several donors especially Finland were active in forestry development to provide income, fuelwood and timber, and conserve natural resources. The Forestry Division is now moving in the directions highlighted in the Rio Forest Principles and Agenda 21. The long-term policy advocates substantial efforts to increase forest production, to involve local communities in tree planting and management, to conserve biodiversity, to emphasise the importance of forests for agricultural productivity, and to begin collaboration with other sectors in the pursuit of "holistic" approach.

x) **sources of growth**

On 11 November 2001, the ADB Consultative Mission held discussions with the MANREC on the new areas of collaboration. During the discussions MANREC requested the intervention of ADB in the assistance of the agricultural sector in the following projects/programmes that are given first priority (short-term, during 2001/2002 - 2003/2004):

- Reorientation of micro-economics issues
- Strengthening of agricultural research/extension services
- Inputs supply and delivery systems
- Provision of credit services
- Strengthening of farmers' organizations (Co-operatives, Associations, etc)
- Rehabilitation of Kizimbani Agricultural Research and Training Station
- Diversification of other cash crops
- Rehabilitation of cloves plantation
- Rehabilitation of animal health, production centres and ticks control.
- Development of diary industry - Improvement of A.I services through Heifer Trust Scheme Funding
- Development of agricultural infrastructure
- Marketing of agricultural/fisheries products
- Community involvement in forestry management
- Investment in biotechnology aspects
- Rainwater harvesting technology
- Community-based environmental protection networking
- Capacity building of the agricultural sector

The above listed projects/programmes are linked to the Zanzibar Poverty Reduction Strategy, 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. These are grouped into crop/livestock, forestry, fisheries and environmental sub-sectors.

The mission did not have sufficient time to fully evaluate these proposals.

Annex 3: Roles and Responsibilities of Public Institutions serving Agriculture in Mainland Tanzania.

Sectoral Ministries (Ministry of Agriculture and Food Security, Water and Livestock Development, Co-operatives and Marketing)

The responsibilities are:

- (a) to formulate and review policies
- (b) to review laws, regulations, procedures and guidelines
- (c) to set standards or criteria for service delivery
- (d) to determine staffing requirement
- (e) to monitor the implementation of the policies, laws, regulations, procedures and guidelines
- (f) to carry out research relevant to the sectors concerned.

President's Office – Regional Administration and Local Government

The responsibilities are:

- (a) to make broad policy on issues regarding the development and management of local government and to keep track of implementation of the policies
- (b) to make policy to improve the quality of leadership and management at village levels
- (c) to monitor the implementation of services by local governments based on some national criteria
- (d) to formulate yardstick/bench-marks on good governance
- (e) to oversee the overall performance of local governments
- (f) to ensure that the Regional Administration and Local Governments have capacity and resources to carry out responsibilities assigned to them
- (g) to oversee the implementation of Local Government and Regional Administration
- (h) to appoint District Executive Directors and other heads of departments for Local Government Authorities on the basis of standard/national criteria that should be known
- (i) to administer and lead the Regions
- (j) to associate the development of Local Governments with the supervision of financial resources.

Regional Secretariats

The responsibilities are:

- (a) to create an environment conducive to development and growth of Local Governments
- (b) to assist local government in capacity building for themselves
- (c) to receive and interpret policy, laws, regulations, procedures and guidelines
- (d) to give technical and expert advice to local government
- (e) to receive reports from local governments
- (f) to monitor local governments in the execution of their duties

Local Government Authorities

The responsibilities are;

- (a) to oversee and execute the policies, laws, regulations, procedures and guidelines from the Central Government
- (b) to make byelaws
- (c) to carry out community development, in economic terms for the people within the areas of their jurisdiction
- (d) to mobilise communities in the fight against poverty, ignorance, and diseases
- (e) to plan and execute development programmes/projects through participatory approaches
- (f) to operate on the basis of good governance.

Annex 4: table 1

Trends in Selected Macroeconomic Indicators

	1994	1995	1996	1997	1998	1999	2000
Real GDP Growth	1.4	3.6	4.2	3.3	4.0	4.7	4.9
Inflation	35.5	27.1	21.0	16.1	12.9	7.8	6.0
Exchange Rate (Tshs/US \$) – annual average	509.6	574.8	580.0	612.1	664.7	743.4	792.5
Export/Import ratio (Goods)	39.7	50.9	63.0	65.6	43.1	38.1	49.6
Balance of Payments (mil. US \$)	-461.3	-382.1	-231.2	-633.4	-645.8	-372.8	-336.8
Current Account Balance (mil. US \$)	-711.1	-646.4	-461.3	-558.6	-993.0	-793.5	-541.5
Foreign Reserves (Weeks of imports)	9.5	6.6	11.3	16.6	13.2	18.0	24.2

Source: Ministry of Finance, and National Bureau of Statistics.

Annex 4 Table 2**Tanzanian Agricultural Sector Comparative Advantage Indicators
(Domestic Resource Coefficients)**

	Average	Improved	Potential
Maize (Iringa) ^a	0.93	0.72	0.61
Maize (Dodoma) ^a	0.66	0.71	0.96
Rice (rainfed, upland) ^a	0.82	-	-
Rice (rainfed, lowland) ^a	0.60	0.78	-
Rice (irrigated, Morogoro) ^a	0.63	0.72	0.66
Cotton (Shinyanga)	0.43	0.50	0.53
Tobacco (flue cured)	0.62	0.56	0.47
Tobacco (fire cured)	0.56	0.56	0.44
Cashew (Mtwara)	0.27	0.26	0.22
Cashew (Tanga)	0.50	0.90	0.81
Coffee (Arabica)	0.39	0.27	0.22
Coffee (Robusta)	0.59	0.56	0.49
Tea (smallholder, Iringa)	0.97	0.92	-
Tea (estate, Iringa)	-	0.55	0.43
Sugarcane, Morogoro)	-	0.80	0.77

Note: The DRC measures the opportunity cost of the domestic resources required to save (or earn) US\$1 of foreign exchange. A coefficient of 0.61 indicates that there is a potential for only spending US\$61 cents to save US\$1 in maize imports. Any coefficient less than 1 implies that it is competitive at world prices

a. Food crop DRCs are measured using import parity prices. There is a foreign exchange saving when substituting for imports, but it is unlikely that Tanzania could export on world markets competitively.

Source: URT/WB.

Annex 5: Natural Resource Base

A key assumption in the ASDS is that Tanzania has an underused and abundant natural resource base. The available data paints a variable and contradictory picture of the extent to which this assumption is justified, hence this review.

On one hand there is evidence of this underused and abundant resource in the possibility of forestry companies like Kilombero Forests Limited being able to obtain long leases at low cost (12,000ha at USD 2/ha/annum) for fertile and well watered land (1600mm annual rainfall).

On the other hand are; reports of serious clashes over land rights between pastoralists and settled farmers, especially on irrigation schemes, and of impoverishment of pastoralists following establishment of game reserves. This coupled with well documented deforestation and even desertification due to over grazing and excessive off-take of fuel wood and charcoal, seem to indicate that resources are scarce.

Table 1. Land Areas under various landuses (ha)

Water features	7.4 million
Forest reserves	13.8 million
Game reserves	9.2 million
National parks	3.3 million
Conservancy areas	0.8 million
Cultivated land	10.1 million
Total area	94.5 million
remainder	49.9 million

It is quoted that 44 million ha are suitable for arable production so that leaves 34 million ha for expansion. Out of 50 million ha said to be suitable for livestock production, not including protected areas, only 26 million ha is said to be currently in use. However, much of the remaining area is theoretically excluded on the basis of tsetse infestation which prevents settled ranching, but traditional pastoralists know how to make use of this on a seasonal basis. Meanwhile forests are estimated to cover 33 million not including the wildlife protected areas, but even now incremental production is estimated at less than half the off-take. Clearly the 50 million ha cannot support all of the possible expansion as some of the land uses are mutually exclusive. In addition, land which has a high potential for cropping is also just the area suitable for more intensive grazing and highly productive forestry.

Livestock

Traditionally, cattle keeping was by an extensive pastoral system. Herders migrated over wide areas following the availability of grazing. A variety of factors such as increasing livestock numbers, population growth and the expansion of the arable area into grazing areas has led to the collapse of this system and it is now estimated by MAFS/MWLD that only 14,000 households or 0.004% of households depend on livestock keeping alone. However, other sources speak of a 'substantial' pastoralist community that extension services have tended to ignore. The pastoralists have adapted to the change by adopting mixed farming. The corollary of this is that the number of households engaging in both crop production and keeping cattle has shown a rapid increase from 14% in 1984 to 29% in 1995 contributing about 80% of beef production. There is no information on how many of these households depend mainly on livestock production. Gender studies indicate that women may shoulder a disproportionate amount of the extra work involved. The data preferred by MWLD suggest that cattle number about 15 million and are increasing steadily at 2% per annum. However, other reports put the cattle population as static at about 12 million since the mid 1980s. There is movement of pastoralists from the overgrazed North towards the South and West. There are conflicts of interest between farmers mainly dependent on pastoralism and the expansion of arable farming and other forms of land use. This has led to confrontation.

The main grazing lands which carry about 90% of the stock are:

- a) Semi arid to sub humid grazing land: this covers nearly 30 percent of the grazing area and is mainly found in the central plains including the pastoral systems of Arusha, Dodoma, Shinyanga and Singida. About 40% of the national cattle herd are found here at density of less than three ha/head. Seasonality of production, drought and overgrazing are major problems.
- b) Humid plateau lands: these represent another 30 percent of the grazing area and support nearly 50 percent of the cattle. These areas are also suitable for crop production, which is expanding at the expense of grazing areas, and forestry.

Two fifths of the livestock population is concentrated in Arusha, Shinyanga, and Mwanza regions, which account for only one fifth of the human population. In many regions the livestock population far exceeds the carrying capacity of the land resulting in overgrazing. In Shinyanga, especially Meatu district, and Mbulu in Arusha region, the excess is reported to be over 200% (1989 data).

Studies have calculated a maximum stocking rate of 20 million LSU, compared to the existing estimated 16 million LSU so leaving room for expansion, but this is calculated on the basis of 60 million ha being used exclusively for grazing. From the table above it is clear that less than this area is available at present. In addition important seasonal grazing is earmarked for irrigation schemes and the arable area is expected to expand. The concept of a 'maximum carrying capacity' beyond which environmental degradation will occur is now widely considered to be outmoded, in that studies have shown that degradation begins at very low stocking rates and steadily increases with livestock density. The question is really to balance the returns from livestock farming with the cost of environmental degradation in the light of the development strategy. However, the conclusion can be drawn that livestock numbers are already high.

Crops

The estimated area of cultivated land varies largely due to differing definitions of fallow land, but about 10 million ha of the land area is under more or less continuous cultivation. It is held that there is considerable scope for expansion of the cropped area. It is often quoted that only 15% of the land suitable for crop production is presently being used, not including protected areas like National Parks and game reserves. However, this excludes land under short fallow and hides big regional differences. The increase in the cultivated area is estimated a 2% per year, which is less than population growth and the growth in crop production, this would suggest that yields per unit area are increasing. However, some studies report a negative effect on yields due to the reduction in fertilizer use, so the data have to be interpreted with caution. Another possibility would be that fallow periods are reducing in response to increased pressure on the land since the 'cropped' area includes short fallow (up to 5 years), i.e. a higher proportion of the 'cropped' area is actually cultivated each year than in the past. Even at 2% per annum an extra million ha will be brought under cultivation in 5 years. Since a large increase in production is anticipated, a reasonable estimate might be that at least 5 million ha will be brought into cultivation in the next 10 years, bringing the total to 15 million ha. If half of the existing farm households were to develop medium sized holdings of say average 10ha (smaller in ecologically favourable areas, but much larger for livestock farms in drier areas) it would demand 20 million ha.

Three regions are already using all or more than all the area classified as suitable, Dodoma 200%, Singida 140% and Kilimanjaro 100%, the latter is a region with good soils, favourable rainfall and consequently a high population density. Dodoma and Singida are fairly dry areas where livestock farming is important, with only small areas of land suitable for cropping. Thirteen regions currently use less than half of the area classified as suitable for cropping; however, the un-cropped land is currently being used for grazing, collection of firewood and charcoal burning etc., so expansion would be at the expense of these activities. Moreover, much of the area available for expansion is far from densely populated areas, is often ecologically fragile, and would require the development and application of appropriate cropping methods incorporating fallows etc, to maintain soil fertility.

Forest

Tanzania is well endowed with forests and woodlands which provide more than 90% of national energy supplies, nearly all of the timber requirements and support a large export industry of high value quality timber (10% of registered exports). Its contribution to GDP is estimated at 3.5% but informal trade in charcoal etc is not captured in this figure. In addition it has been estimated that over 50% of rural household income comes from the sale of forest products such as fire wood, charcoal, honey and wild fruits. However, it is estimated that the country's forest area declined from 44 million ha or 50% of total land area in 1938 to 33 million ha or 37% of total land area by 1987. There are no reliable figures on deforestation in Tanzania, United Nations Food and Agriculture Organization (FAO) estimates range from 130,000 to 400,000 ha per annum.

In 1993, fuelwood consumption was estimated at 45 million cubic meters per annum, with a per capita wood consumption of 2.0 cubic meters of roundwood per annum. The rural areas alone consumed about 43.8 million cubic meters of firewood. By the year 2000, fuelwood demand was expected to surpass 60 million cubic meters. The current off-take is believed to exceed regeneration but data is lacking. Local deforestation is influenced by changing practices such as the increase in fish smoking around Lake Victoria following the shift in fisheries from small fish to Nile Perch and the use of wood fired curing in tobacco farming. Frequent fires set by pastoralists in some areas reduce the regeneration rate and the variety of woodland plants. Forest fires are rampant particularly in natural forests where monitoring is very difficult. The national capacity to fight fires is very limited both technically and financially.

Non-wood forest products like honey and bush meat have been estimated to provide 50% of farm household income, so this resource base is obviously very important indeed.

Loss through degradation/desertification.

Discussion of efficient and sustainable use of the natural resource base is also limited. Land degradation is reducing the productivity of soils in many parts of Tanzania. A PRA survey in 1995 found that farmers reported crop yields reduced by 50% compared to earlier years due to land exhaustion. Farmers also reported undertaking conservation activities like tree planting and contour ploughing. Soil loss has been measured in Shinyanga region over a long time period. Rates in the 1970's were twice the rates of the early 1960's (105 tons/ha/year, 1960-1965; 224 tons/ha/year, 1970-1980). Measurements in Dodoma, Morogoro, and Arusha regions suggest similar high rates of soil loss. According to the United Nations Sudano Sahelian Office (UNSO), about 33% of Tanzania is affected by desertification.

A recent study conducted by the University of Dar es Salaam's Institute of Resource Assessment confirms the environmental crisis facing the East African country.

The research shows that between 40% to 55% of Tanzania's land surface is seriously degraded because of over-exploitation of its natural resources.

Another source, the National Action Plan on Combatting Desertification (NAPCD) of 1999, finds that more than 60% of the country is under threat from desertification and symptoms of desert encroachment are found almost everywhere in the country, although they are much more pronounced in the semi-dry and dry central, western and northern provinces of Dodoma, Singida, Tabora, Kigoma, Arusha, Mara, Shinyanga and Mwanza. According to studies by the Kenya-based UN Environmental Programme these are the regions where most street children and beggars found in Dar es Salaam and other major Tanzanian towns come from, representing the first group of victims rendered helpless by a serious environmental crisis in their places of origin.

Tanzania's National Environmental Management Council has repeatedly warned the country's population that desertification would cause an extremely negative socio-economic impact and grave ecological consequences, if immediate measures are not taken to check land degradation.

The conclusion which can be drawn is that there is certainly huge potential for increasing production and productivity, but that this needs to be realistically assessed. Appropriate development taking into account long term sustainability and social justice must be nurtured with the active involvement of the people concerned.

Annex 6: Wildlife, Forestry and Environmental protection

This sub-sector falls under the responsibility of the Ministry of Natural Resources and Tourism (MNRT) and so although for the Bank, forestry and fisheries are an integral part of the agricultural sector, this is not normally the case in Tanzania. In addition the wildlife resource which may compete with or complement agricultural development is very important in Tanzania and needs to be considered. An important omission from ASDS is coordination with MNRT to address these issues.

Organisational Structure:

During the initiation of the Civil Service Reform Programme (CSRP) in 1993, the Ministry was known as “Ministry of Tourism, Natural Resources and Environment (MTNRE)”, with the following sub-sectors: Forestry, Wildlife, Fisheries, Tourism and Environment. At that time, Tourism and Forestry were the only sub-sectors with elaborate policy documents. Other sub-sectors were using government proclamations and guidelines as a basis on which programmes, strategies and action plans were formulated. In 1995 the name of the Ministry was changed to “Ministry of Natural Resources and Tourism (MNRT)”. The environment component was transferred to the Vice President’s Office. MNRT is charged with the responsibility of ensuring sustainable conservation of natural and cultural resources, and developing tourism industry, by involving local communities and other stakeholders, and where necessary by collaborating with the international community. In 1995, the Government redefined its role from that of being a direct implementing agency to that of policy and strategy developer, facilitator, adviser, and regulator. Consequently, the Government identified core functions that are to be the domain of a Ministry and non-core functions that are suitable for divestiture or privatisation, transformation into executive agencies and devolution of some functions to local authorities or abolition. Under the re-fined role of the Government, MNRT was given the mandate to protect, properly manage natural and cultural resources, and develop tourism.

Forestry:

Forest management, the responsibility of the Forest Division of MNRT, has historically mainly concentrated on the forest reserves with less attention on the majority of the forest found on public land. The forest reserves are receiving management attention from the FBD because the government collects the revenue from the production of forest reserves. Many studies have shown that the degree of use of reserves by local communities is much higher than officially recognised. The new strategy is to focus intervention on policy development, regulation and monitoring of decentralised forest management. The Land Act provides for village ownership of forest land. Over 90% of the Division budget is from foreign sources.

Tanzania is well endowed with forests and woodlands which provide more than 90% of national energy supplies, nearly all of the timber requirements and support a large export industry of high value quality timber (10% of registered exports). Its contribution to GDP is estimated at 3.5% but informal trade in charcoal etc is not captured in this figure. In addition it has been estimated that over 50% of rural household income comes from the sale of forest products such as fire wood, charcoal, honey and wild fruits. However, it is estimated that the country's forest area declined from 44 million ha or 50% of total land area in 1938 to 33 million ha or 37% of total land area by 1987. There are no reliable figures on deforestation in Tanzania, United Nations Food and Agriculture Organization (FAO) estimates range from 130,000 to 400,000 ha per annum.

In 1993, fuelwood consumption was estimated at 45 million cubic meters per annum, with a per capita wood consumption of 2.0 cubic meters of roundwood per annum. The rural areas alone consumed about 43.8 million cubic meters of firewood. By the year 2000, fuelwood demand was expected to surpass 60 million cubic meters. The current off-take is believed to exceed regeneration but data is lacking. Local deforestation is influenced by changing practices such as the increase in fish smoking around Lake Victoria following the shift in fisheries from small fish to Nile Perch and the use of wood fired curing in tobacco farming. Frequent fires set by pastoralists in some areas reduce the regeneration rate and the variety of woodland plants. Forest fires are rampant particularly in natural forests where monitoring is very difficult. The national capacity to fight fires is very limited both technically and financially.

Plantations occupy a relatively small area and it is planned that these should be commercialised and made self-supporting.

An additional responsibility is contributing to the legal framework for sustainable management of the resource

natural resources:

As in forestry, historically MNRT concentrated on managing and extending economically very important protected areas and was less concerned with protecting the natural resource base for sustainable agriculture. More efforts are now being put into natural resource management outside of protected areas.

Resource Base and contribution to Economy: Tanzania wildlife resource is protected in a network composed of 12 National Parks (NPs), Ngorongoro Conservation Area, 31 Game Reserves (GRs) and more than 41 Game Controlled Areas (GCAs). The wildlife protected-area network covers 28% of the total Tanzania's land surface area and 3% of the surface area overlaps with Forest Reserves. Various grassland and open woodlands support a diverse spectrum of Fauna and Flora. They include greatest concentrations of large mammals and such as wildebeest, zebra, buffalo and elephants. Wildlife earns Tanzania substantial foreign exchange mainly through photographic safaris in National Parks and Ngorongoro Conservation Area and Safari hunting in Game Reserves, Game controlled areas and a few open areas. Wildlife based tourism is a second major National income earner in Tanzania, contributing about 16% of Gross Domestic Product (GDP), 54% of the country's export earnings and employment of over 110,000 people. In addition, live animal trade as well as wildlife farming/breeding provide substantial employment opportunities to Tanzania citizens. Between 1988-1998, photographic Safaris earned the country a total of over USD 110 million from approximately 3.6 million tourists. Between 1995/96 and 2000 a total of 4,380 Safari hunters and 1558 observers hunted in Tanzania enabling earnings of up to USD 42.5 million. During the period 1993-1999 wild animals trade earned 214 millions Tanzania Shillings in revenue. The Wildlife Sub-Sector supports permanent jobs and another 2,046 on temporary basis.

Potential Contribution to Food Security and Poverty Reduction: With the introduction of community based conservation (CBC) programmes community earning potential is beginning to improve as a result of revenue sharing. Community attitude to conservation has equally improved to such the extent that more and more communities are demanding participation in the CBC scheme. Benefits from Community Wildlife Management include development access roads in protected areas, employment in conservation works and opportunities to crop animals for food.

Production System Trade and Potential for Growth: Conservation is the major system of wildlife production. To enhance this, Tanzania is a member to several conservation related Treaties such as the Convention on Biological Diversity (CBD), the Convention for International Trade on Endangered Species of Fauna and Flora (CITES), the Convention on Wetlands, the Convention on Migratory Wild Animal Species (CMS) and African-Eurasian Water Bird Agreement (AEWA). CBD and the Convention on Wetlands emphasis the need to establish and strengthen local communities' participation in management and use of natural resources, including wetlands. The major threat to growth and sustainability in the sub-sector is the rapidly growing population of Tanzania and the related problem of poverty and the lack of survival alternatives outside the expropriation of the land resources. This situation is putting increasing pressure on forest and rangelands. Also important in sustainability is capacity to control poaching and shrinkage of habitats that are associated with forest fires.

Public and Private Sector Investment in the Sub-Sector: Government has invested in many institutions to ensure sustainable management of wildlife resources. They include: The Tanzania National Parks Authority responsible for management of National Parks; The Wildlife Division of Ministry of Natural Resources responsible for management of wildlife in areas outside National Parks and Conservation areas; The Ngorongoro Conservation Area Authority responsible for managing the National Conservation areas; The Tanzania Wildlife Research Institute Established in 1980; and Training Institutes. The role of the Government in the wildlife sector is now that of policy formulation. While private investment is currently low, the wildlife sector has a potential for investment in support

infrastructure for Nature of Eco-tourism, sport hunting and live animal trade. More investment is particularly needed in hotel industry in both urban and rural areas.

Policies, Regulatory Measures and Development Programmes: The principal legislations now in force for the wildlife sector in Tanzania are: Wildlife Conservation Act No.12 of 1974; - This was enacted to safeguard wildlife resources and mandated the Wildlife Division to have legislative control over wildlife outside National Parks and Ngorongoro Conservation Area. National Parks Ordinance 1959 (Cap 412); - That was enacted to provide for management of National Parks. The Ngorongoro Conservation Area Ordinance 1959 (Cap 413); - Enacted to provide for management of Ngorongoro Conservation Area. The Act of Parliament No. 4 of 1980 for conducting and Co-ordinating wildlife research established Tanzania Wildlife Research Institute (TAWIRI); The Act of Parliament No. 8 of 1964 to provide technical wildlife management training established college of African Wildlife Management, Mweka. All these laws are under review to conform to the new wildlife policy. The amended Wildlife Conservation Act in the pipeline, is expected to establish a legal framework for among other things, Community-based Conservation (CBC).

Sub-sector development Constraints: While Government is keen in sustainable management and utilisation of its wildlife resources, it lacks financial resources for the preparation of management plans for protected areas and plan implementation. Infrastructure in game reserves are also inadequate. Capacity at all levels will also be crucial for conservation and tourism. In spite of these problems, on-going ADB intervention (UA 5.9 million) in the management of the Selous Game Reserve and its buffer zones is proving to be a success. There is thus a need to replicate a project of this nature to strengthen the sector infrastructure, management capability and promote the participation of communities in forest reserve and parks management

Environmental protection:

Environmental protection is the responsibility of the National Environment Management Council (NEMC) under the Vice Presidents Office. It is the leading technical advisory, co-ordinating and regulatory agency responsible for the protection of the environmental and sustainable use of the natural resources in Tanzania. It is responsible in consultation, collaboration and partnership with other entities concerned with environmental matters and the public at large, for facilitating and promoting such measures as necessary to help achieve an important quality of lives for Tanzanians.

Functions:

- Advise government on all technical matters for effective environmental management.
- Co-ordinate the technical activities of all bodies concerned with environmental matters.
- Enforce environmental regulations (Norms, standards, guidelines and procedures).
- Assess, monitor and evaluate all activities that have impact on the environment.
- Promote and assist environmental information, communication and capacity building.

Importance of Environment in the economy of Tanzania is of four folds: it provides the basic resources for virtually all socio-economic activity in the country, it holds natural habitats, plants and animals that are art of an irreplaceable global heritage, waste receptacle and a foundation for eventual alleviation of abject poverty. It follows therefore that the major thrust of environmental management is protection of the natural living space of humankind and integration of environmental scarcity in making decision on all economic issues and activities.

The government of Tanzania realised the danger facing such resources including clean air, fossil fuels, whales, hardwoods and endangered species by taking appropriate measures ranging from policy, legal framework and institutional arrangement which are conforming to socio-political and economic system.

The government in collaboration with various stakeholders has put emphasis on promoting, strengthening and sensitising communities and individuals participation as a strategy to invigorate environmental conservation and management. Together with these there were awareness campaign, environmental education and skills development which complemented on various issues of environmental conservation and management. Emphasise for the environmental conservation and management is to raise the capacity

and ability of the communities and individuals in sustainable management for own benefits and for the future generation. It is vividly that the efforts has raised the public awareness, interests and actions as more than 159 Community Based Organisations (CBO) and non-Governmental Organisations (NGOS) has been formed as well as private sector and individuals joining the process. Furthermore, the government and other collaborating institutions and agencies such as CBOs / NGOs are implementing various programmes both in rural and urban areas. The media institutions (radio, TV, press, newspapers) has played an significant role in sensitising and undertaking various education programmes on environmental issues thereby cultivating public / private interest, commitment and awareness on environmental management and conservation aspects.

The government adopted sector policies related with forest; mineral, wildlife; fisheries; agriculture and livestock and land which put priority on conservation and management of resources and environment, raising public awareness and understanding of the linkages between environment and livelihood, and promoting international co-operation on environmental agenda. Current intervention are directed in implementing the National Action Programme to Combat Desertification, Biodiversity Conservation, environmental friendly production practice sand abatement of pollution and strengthening both human resources and institution.

It is clear that current global, regional and national environmental conservation and management are aiming towards overcoming poverty-related problems, diseases, food insecurity and insufficiency, filth shelter, unsafe water, inadequate energy supply and unemployment.

Growing awareness of the general public and individuals advantages of sound environmental conservation and management forms the basis for sustaining the resources and environment. This goes together with implementation of sound strategies on poverty eradication as poverty is highly tied with unsustainable resources utilisation and environmental degradation and promotes joint gender efforts. Furthermore, the government has committed itself in environment conservation and management and poverty eradication with full support of individuals, CBO, NGOs and Donor Agencies.

Policies

The overall objectives of the National Environmental Policy 1997are:

- To ensure sustainability, security and equitable use of resources for meeting the basic need of the present and future generations without degrading the environment or risking health or safety;
- To prevent and control degradation of land, water, vegetation, and air which constitute our life support systems;
- To conserve and enhance our natural and man-made heritage, including the biological diversity of unique ecosystems of Tanzania;
- To improve the condition and productivity of degraded areas including urban and rural settlements in order that all Tanzanians may live in safe, healthful, productive and aesthetically pleasing surroundings;
- To raise awareness and understanding of the essential linkages between environment and development, and promote individual and community participation in environmental action, and,
- To promote international co-operation on the environmental agenda, and to expand our participation and contribution to relevant bilateral, sub-regional, regional, and global organisation and programmes, including implementation of treaties.

Regulatory Framework

National Environmental Policy 1997, particularly stressed on the need for formulating environmental legislation and sectoral legislation as an essential component for effective and comprehensive environmental management and improvement of life. Meaningful and effective environmental law must be clearly understood and treasured by the communities and individuals whom it is aimed. The legislation will set out standards and procedures, duties and limits, create obligations for all stakeholders, which will fit human activities and govern resources sustainably. The government is on process of preparing such law.

A number of sectoral-related environmental legislation have been formulated or reviewed. Examples: Forestry, Wildlife, Fisheries, Mining, Energy, Water, Lands, Local Authorities and Urban Authorities.

The government is signatory and has acceded to a number of International/ Regional environmental treaties as follows:

§ Convention on Biological Diversity ratified on 8 March, 1996;

§ Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region and Related Protocols ratified on 1 March, 1996;

§ United Nations Convention to Combat Desertification ratified April, 1997;

§ United Nations Framework Convention on Climate Change ratified in April, 1996;

§ The Vienna Convention on the Protection of Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer acceded on 7 April, 1993 and 16 April, 1993 respectively;

§ Basely Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal acceded on 7 April, 1993, and,

§ Bamako Convention on Ban of the Import into Africa and the Control of Transboundary Movements of Hazardous Wastes within Africa, ratified on 7 April 1993.

Public and Private Sector's Role

It is widely accepted that environmental management is everybody's responsibility. The roles of the government institutions are to assist local communities to become aware of their own situation and support them to become responsible for their own destiny. Important is policy formulation, setting regulatory and institutional framework and promotion of education programmes. Furthermore, the government will be responsible with timely provision, updating generation and dissemination of accurate information related with environmental management.

As stated in the National environmental Policy 1997 and concretised by Development Vision 2025 the local communities as well as business entities has the responsibilities of planning, implementing programmes / projects that are reflecting their needs and foster efficiency in resource utilisation including reuse, recycling and reduction of waste. In addition the private sector has the role of participating in different forum including policy and legal formulation process related with environmental management.

Annex 7: Foreign trade, Production and Export statistics

Source: United Republic of Tanzania (2001) *Economic Survey 2000*.
The Planning Commission Dar es Salaam Tanzania.

Table 1: Value of Tanzania's Foreign Trade (Tsh. Billion)

	1994	1995	1996	1997	1998	1999	2000
Exports	265.17	390.38	455.42	438.21	421.45	462.89	588.8
Domestic	265.17	390.38	455.42	438.18	390.14	419.97	532.86
Re-exports	0.0	0.0	0.0	0.03	31.31	42.92	55.94
Imports	666.26	770.78	702.44	713.59	1036.44	1236.57	1217.53
Total Value	931.43	1161.16	1157.86	1151.8	1457.89	1699.45	1806.33
Balance of Trade	-401.09	-380.4	-247.02	-275.38	-615.0	-773.68	-628.73
Exchange Rate (Shs/US\$)	509.6	574.8	580.0	624.6	664.7	748.1	800.7

Table 2: Volume and Value of Domestic Exports

Commodity	Quantity (000 tonnes)*								Change (%) 1999/00
	1993	1994	1995	1996	1997	1998	1999	2000	
Coffee	58.59	37.0	47.98	61.69	47.27	44.66	39.02	54.4	39.42
Cotton	61.15	60.0	70.86	81.89	86.29	37.29	26.31	36.8	39.87
Sisal	4.85	7.2	11.34	8.9	15.06	11.58	15.47	13.4	-13.38
Tea	19.75	21.67	21.6	22.02	21.56	22.12	21.40	22.6	5.61
Tobacco	10.62	15.4	17.08	24.92	27.92	26.35	21.35	19.2	-10.07
Cashew nuts	32.16	65.0	75.56	118.36	121.9	164.7	102.0	101.8	-0.24
Cloves	-	-	-	-	-	-	6.2	2.9	-53.23
Diamonds(Carats)	39885	22.57	54.03	114.48	39.50	-	130.2	344.0	164.25
Gold (Kg.)	3363.9	2802.66	321.9	301.0	232.0	427.0	4767	14700	200.04
	Value (TSh. billion)								
Coffee	39.83	58.76	81.17	85.6	72.74	72.28	57.0	67.06	17.66
Cotton	32.49	53.42	69.24	79.57	79.62	31.65	212.7	30.26	-85.78
Sisal	1.38	2.64	3.54	3.05	5.59	4.5	5.39	4.165	-22.60
Tea	15.77	20.15	13.22	15.0	19.5	20.1	18.30	26.21	43.20
Tobacco	7.08	10.5	15.38	28.01	33.06	36.68	32.0	30.72	-4.00
Cashew nuts	9.66	26.51	36.08	47.45	55.51	71.81	79.2	67.65	-14.58
Cloves	-	-	-	-	-	-	17.79	7.98	-55.12
Diamond (Carats)	2.23	1.54	2.62	7.91	5.45	-	15.02	33.45	122.72
Gold (Kg.)	13.04	13.09	1.88	1.6	1.22	2.22	29.3	91.01	210.67

Note: Except for diamonds and gold whose quantities are given in carats and kilograms respectively.

Table 3: Production of Livestock Products for the Period 1997/98-2000/01.

Product	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
MEAT PRODUCTION (Tons)							
▪ Beef	137,000	148,000	152,000	151,000	155,000	175,000	181,000
▪ Goat	45,000	58,000	61,000	62,000	64,000	71,000	72,000
▪ Pork	10,500	8,000	9,000	9,000	9,500	10,000	20,000
▪ Poultry	34,500	31,500	35,000	38,000	40,000	45,000	47,000
Total Meat	227,000	245,500	257,000	260,000	268,700	301,000	320,000
MILK PRODUCTION (Litres '000)							
▪ Indigenous Cattle	390,000	390,000	370,000	430,000	437,000	445,000	450,000
▪ Dairy Cattle	200,000	195,000	230,000	245,000	250,000	265,000	285,000
Total Milk	590,000	585,000	600,000	675,000	687,000	301,000	735,000
EGGS PRODUCTION (000)							
▪ Chicken Eggs	390,000	396,000	400,000	400,000	430,000	450,000	450,000
SKIN COLLECTION (000)							
▪ Cattle Skin	1,523	1,323	1,000	1,300	1,400	1,500	1,300
▪ Goat's Skin	1,829	1,829	1,000	800	650	1,000	700
▪ Sheep Skin	561	587	560	500	350	500	400
Total Skin					2,400	3,500	2,400

Table 4: Production in the Fisheries Sector: 1993 – 2000.

Year	Number of Artisanal Fishermen	Number of Boats			Fish Catch and Revenues					
		Fresh Waters	Sea Waters	Total	Fresh Waters		Marine Waters		Total	
					Qty (000 Tons)	Value (Million Tsh.)	Qty (000 Tons)	Value (Million Tsh.)	Qty (000 Tons)	Value (Million Tsh.)
1993	61,943	-	-	20,976	294.78	31.24	36.68	10.21	331.47	41.44
1994	61,943	-	-	19,361	228.01	30.95	40.79	14.23	268.80	45.18
1995	62,486	18696	3,768	22,464	207.14	45.81	51.07	28.58	258.21	74.38
1996	62,486	18696	3,768	22,464	308.6	38.2	48.2	24.10	356.80	62.3
1997	62,486	18696	3,768	22,464	306.75	42.27	50.21	25.35	356.96	67.62
1998	62,486	18,696	3,768	22,464	300.0	47.49	48.0	29.27	348.0	76.76
1999	62,486	18,696	3,768	22,464	260.0	44.02	50.0	33.50	310.0	77.5
2000	-	-	-	-	271.0	45.5	49.9	32.18	320.9	77.68

Annex 8: Aid Projects in the Agricultural Sector

		USD
<u>NETHERLANDS</u>		
District Rural Development Program	1998-2003	70.0 million
SNV District Development Program	1998-2000	13.3 million
Tanzania Agricultural Research Project – TARP II	1996-2001	6.0 million
Tanga Dairy Development Project	1997-1999	1.7 million
Promotion of Farmer Innovation in Rainfed Agriculture	1997-2000	1.1 million
<u>DENMARK</u>		
Agricultural Sector Program Support	1997-2000	34.3 million
Support to Ngorongoro Pastoralists	1998-2003	6.0 million
<u>GERMANY (GTZ)</u>		
Soil Erosion Control and Agroforestry Project (SECAP)	1989-1999	9.5 million
Selous Conservation Program	1989-1999	8.0 million
Integrated Pest Management (IPM)	1992-2000	7.2 million
Handeni Integrated Agroforestry Project (HIAP)	1997-1999	5.5 million
Natural Resources Management and Buffer Zone (NRBZ)	1995-2000	2.4 million
<u>GERMANY (GTZ)</u>		
Soil Erosion Control and Agroforestry Project (SECAP)	1989-1999	9.5 million
Selous Conservation Program	1989-1999	8.0 million
Integrated Pest Management (IPM)	1992-2000	7.2 million
Handeni Integrated Agroforestry Project (HIAP)	1997-1999	5.5 million
Natural Resources Management and Buffer Zone (NRBZ)	1995-2000	2.4 million
<u>JAPAN</u>		
Bagamoyo Irrigation Development Project	1995-1998	0.6 million
KR1 and KR2	1970- date	13.6 million
<u>SWEDEN</u>		
Emergency Supply of Seeds to Drought Affected Farmers	1997-1999	1.3 million
Farm level Applied Research East and Southern Africa	1995-1999	5.5 million
Land Management Project (LMP)	1997-2000	4.7 million p.a.
<u>EUROPEAN UNION</u>		
Lake Victoria Fisheries Research Project II (LVFRP)	1998-2000	3.45 million
Tea Development Support Project	1998-2000	2.30 million
Tse Tse Control Program	1998-2002	1.3 million
<u>African Development Bank</u>		
Tanzania Livestock Marketing Project	1992-2001	14.30 million
Madibira Smallholder Agric. Dev. Project	1995-2000	21.92 million
National Agricultural & Livestock Extension Rehabilitation	1988-1999	8.67 million
National Agricultural & Livestock Research Project	1988-1999	8.21 million
Selous Game Reserve Management Project	1999-2003	5.91 million
Special Programme for Food Security Pilot Project		1.0 million
<u>World Bank</u>		
Tanzania Agricultural Research Project Phase II (TARP II)	1998-2003	44.9 million
National Agricultural Extension Project Phase II (NAEP II)	1996-2001	31.1 million
River Basin Mgmt. & Smallholder Irrigation Impr. Project	1996-2002	26.3 million
Agriculture Sector Management Project (ASMP)	1994-1999	24.5 million
Mara Farmers Initiative Project	1998-2001	0.1 million

Source:Reproduced fromADF/BD/WP/2000/67

Annex 9: Missions Terms Of Reference