
TANZANIA NATIONAL BUSINESS COUNCIL

AGRICULTURE INVESTORS ROUND TABLE WORKING
GROUP

REVIEW OF THE AGRICULTURE SECTOR

RECOMMENDATIONS ON MAJOR PROBLEMS AND BOTTLENECKS IMPENDING INVESTMENTS IN THE SECTOR

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THE NATIONAL BUSINESS COUNCIL

REPORT ON THE REVIEW OF THE AGRICULTURAL SECTOR FOR THE INVESTORS ROUND TABLE WORKING GROUP

RECOMMENDATIONS ON MAJOR PROBLEMS AND BOTTLENECKS IMPEDING INVESTMENTS IN THE SECTOR

0.0 EXECUTIVE SUMMARY

1.0 In early November 2003, the Tanzania National Business Council contracted Mr. Peter Mukami of Management and Development Associates (MADA) to provide consultancy services for the Agricultural Investors Round Table Working Group. Mr. Mukami was assisted in this assignment by Mr. Fred Machange, a seasoned Agronomist and former senior research officer in the Ministry of Agriculture and Food Security. The Consultant's broad tasks was to review the agricultural sector, identify major problems and bottlenecks impeding investment operations and recommend practical measures and actions for short term and long term gains.

2.0 The scope of the work involved the following specific tasks:

- a. Review the Agriculture Sector Development Strategy (2001) document (ASDS)
- b. Review other relevant agricultural sector policy documents.
- c. Interview officials in the Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing and other agricultural stakeholder organisations.
- d. Produce a report which highlights the envisaged role of the private sector and identifies the necessary incentives. The required report should elaborate on best practices, be practical and implementable.

3.0 The approach of the Consultant was guided by two current realities:

- (a) That Tanzania's agriculture is dominated by small holder farmers who contribute 50% of the GDP, 75% of the export earnings and support over 80% of the population. For any investment or intervention to have an economic impact to the national economy in the short term it must be directly linked to the smallholder sector.
 - (b) That although the constraints facing the rural sector are truly numerous, they do not carry equal weight (or urgency) in the envisaged agricultural development process. They can therefore be conveniently subdivided into two categories i.e.:
 - (i) Critical constraints and
 - (ii) Supportive factors
- 4.0 It is noteworthy that the critical factors, identified and discussed at length in this report, must be dealt with in the short-term period because new investors will be constrained in the same way, and may be to the same extent, as the smallholders. The non - critical factors are only briefly mentioned since their importance relate to the medium and long term.
- 5.0 Following the reviews of documents and the consultations held, the consultant identified six high potential investment areas for the Private Sector with appropriate support mechanisms from the Government. These are:
- (a) Seed production
 - (b) Out-growers/contract farmers schemes
 - (c) Farm service centres
 - (d) Produce marketing
 - (e) Agro - processing
 - (f) Investment in irrigation infrastructure.

Investment in Seed Production

- 6.0 About 80% of Tanzanian farmers do not plant improved and certified seeds but rely on their own local cultivars. Improved seeds are critical requirements in any modern agriculture. The grossly under-utilised seed farms belonging to the Government should be leased to the Private Sector. Private Operators, with the requisite capital and seed production technology, will take advantage of the growing local seed market, create farm jobs, promote seed out-growers and may even export seed to the regional SADC and EAC markets.

Out-growers/Contract Farmers' Schemes

- 7.0 Out-grower schemes are potentially beneficial because they link agribusiness to the smallholder sector. Often the investor provides some input credit and extension service. In return, he gains a reliable source of quality produce for raw materials or export. The out-growers benefit from reduced risks of market price fluctuations and increased

yields from better crop and animal husbandry practices. Successful examples of such schemes already exist in sugarcane, sisal, tobacco, oil seeds, paprika and tea. The Government should support the establishment of many such schemes, especially by financing the requisite public infrastructure (especially roads and power) which is beyond the resource capacity of private investors.

Establishment of Farm Service Centres

- 8.0 Farm Service Centres, located within major farming communities, serve the roles of inputs supply, tractor and machine hire service, farm machinery repairs, market information, produce storage, marketing etc. Their management requires business skills that only the Private Sector can efficiently provide. Their establishment and spread will reduce the perennial problem of inputs unavailability in rural areas. The requisite start-up capital may be high but financial institutions and commercial banks are likely to be supportive.

Produce Marketing

- 9.0 Smallholder farmers face serious problems in produce marketing e.g. lack of markets, inefficient monopolistic and underdeveloped markets, high transport costs, price fluctuations etc. Farmers/investors critically require a supportive/appropriate policy environment and improved marketing systems. The government should finalise quickly the restructuring of the Commodity Boards, promote the establishment and strengthening of cooperatives and other farmers organisations and further reduce (or eliminate) the remaining local and cross - border trading barriers. Given an improved environment, profitable returns to investment should be realizable in the following areas:

- (a) Local and export commodity trading
- (b) Produce transportation
- (c) Crop storage
- (d) Livestock and livestock products trading.

Agro-processing

- 10.0 About 30% of the potential crop yield is lost due to post-harvest pest damage and inadequate storage facilities. Seasonal oversupply of perishable products results in depressed market prices and excessive wastes. Agro-processing investments are potentially profitable and socially beneficial because of:-

- (a) Reduction of the post-harvest and storage losses
- (b) Value addition and higher incomes
- (c) Creation of rural employment
- (d) Laying the foundation for rural industrialization

- 11.0 The investors should target fruit and vegetable processing, grain milling, dairy and beef processing for the local and regional markets. The TIC's incentive package is considered adequate for new investors but agricultural sector ministries may consider additional incentives if needed.

Investment in Irrigation Infrastructure

- 12.0 Over dependency on rain - fed agriculture renders Tanzania's agriculture highly vulnerable and risky. Stable yields, higher returns and increased national food security can only be assured through irrigation farming. Three proposals are made for this sub - sector i.e.:
- (a) The government should strengthen the operation and maintenance (O&M) of existing smallholder irrigation schemes and build additional ones.
 - (b) Newly built schemes should be leased to private operators where viable water users associations are unable to handle the O & M functions.
 - (c) The government should consider additional incentives for investors' ventures in new irrigation schemes (e.g. minimum ten years tax holiday).

Conclusion

- 13.0 Through the on going economic and structural reforms, the Government has already created a reasonable and stable macroeconomic environment (i.e. inflation rate and exchange rates) although lending rates are still too high (15% - 20%). The ASDS recommendation on the review and harmonisation of the outdated agricultural legislations is being worked upon. The outcome of this exercise will provide a boost to private investment especially in the medium term.
- 14.0 With the exception of the issue of legal access to land, all the priority investment/intervention proposals contained in this report are consistent with the ASDS potential "Quick win recommendations". The knotty issue of land ownership requires a broader public consensus in order to avoid potential political conflicts in the long term.

1.0 BACKGROUND

- 15.0 The Tanzanian Government and economic planners in the country all acknowledge the pivotal position of agriculture in the economy of the country and indeed to the general livelihood of the majority of its people. Given its large contribution to the economy, agriculture is believed to hold the key to Tanzanian economic development; all agree that the agriculture sector is not growing fast enough to make meaningful contribution to growth of the national economy. All agree that the present level of investment in the sector is inadequate and must be increased if the sector is to grow at a rate that will positively impact the general rate of economic growth of the country. Various studies and reviews have been undertaken to address this situation.
- 16.0 The Agriculture Investors Round Table Working Group of the Tanzania National Business Council (TNBC) is also addressing this situation and has commissioned this study. The study will review the agriculture sector, identify major problems and bottlenecks impeding investments and recommend measures and actions for short and long term solutions.

2.0 OBJECTIVE OF THE REVIEW

- 17.0 In reviewing the various studies that have been undertaken in recent years and by interviewing different stakeholders, the assignment aimed at identifying major problems and bottlenecks that impede investments in the agricultural sector. The expected output is a report with recommendations on practical measures and actions by different stakeholders to address this situation both in the short and long term.

3.0 SCOPE OF WORK AND METHODOLOGY

Scope of Work

- 18.0 To facilitate the preparation and production of the Working Group Report to be tabled before the Investors Round Table and other Working Groups, the scope of the work involved the following specific tasks:
- (1) Review the Agriculture Sector Development Strategy (2001) documents (ASDS)
 - (2) Review other relevant agricultural sector policy documents.
 - (3) Interview officials in the Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing and other agricultural stakeholder organisations.
 - (4) Produce a report, which highlights the envisaged role of the private sector and identifies the necessary incentives. The required report was to elaborate on best practices, be practical and implementable.
- 19.0 This involved review of “quick win” areas proposed by the Agricultural Sector Development Strategy (ASDS) and propose on the following: -
- Best practices in agricultural marketing and trade policies.
 - Agricultural input distribution.
 - Agricultural credit delivery mechanism.
 - Reduction on dependency on a limited number of unprocessed commodities.
 - To increase market information flow to the farmers.
 - Reduction of post harvest losses.
 - Empowerment of farmers to make rational decisions.
 - Improvement of rural infrastructure services for instance, rural roads, irrigation etc.
 - To develop rural energy supply programmes and establish Farm Service Centres.
 - Provision of research and extension services.
 - Strengthen the spirit of poverty eradication through the agricultural sector.

- Recommend appropriate incentives to be extended to the agricultural sector.

Methodology

20.0 The consultant reviewed a number of studies and documents undertaken in the recent past that dwelt with agricultural development in the country. The documents studied and reviewed are listed under **section 4.0** of the report. Consultants also interviewed and held discussions with different stakeholders of the sector. The list of persons interviewed is given in **Annex ??**. Information from the two sources was then evaluated and synthesised and consultant has been able to come up with recommendations given in **sections 8.0, 9.0 and 10.0**.

4.0 REVIEWED DOCUMENTS

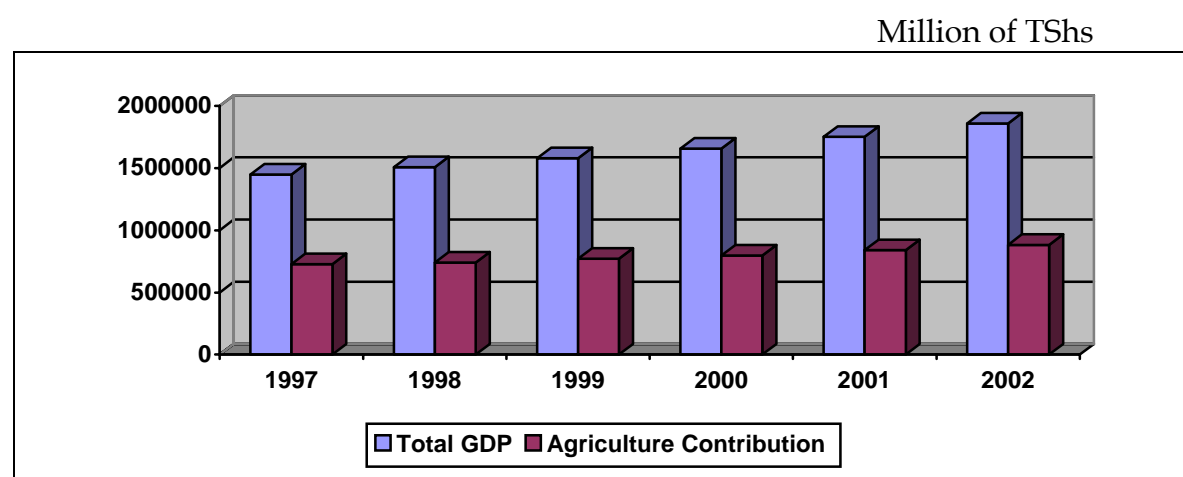
- 21.0 The following policy documents were studied and reviewed by the consultant: -
- a) United Republic of Tanzania, 2001, The Agricultural Sector Development Strategy
 - b) United Republic of Tanzania, 1997, The Agricultural and Livestock Policy
 - c) Tanzania Chamber of Commerce, Industry and Agriculture, 2003, Policy Challenges for Agricultural Incentives in Tanzania.

5.0 STATUS OF AGRICULTURAL SECTOR IN THE ECONOMY

Position of the Agricultural Sector

- 22.0 Agriculture is the foundation of the Tanzanian economy. The dominant position of the sector is demonstrated by the following: -
- It accounts for about half of the national income (*see chart below*),
 - It accounts for three quarters of merchandise exports and
 - It provides more than 95% of food consumed in the country and
 - It provides livelihood and employment opportunities to about 80% of Tanzanians.
 - The sector has forward linkages to agro-processing, consumption and export; provides raw materials to industries and a market for manufactured goods.

Chart No. 1: Contribution of Agriculture to Total Gross Domestic Product at Factor Cost at Constant 1992 Prices for the past six years (1997 - 2002)



Source: Bureau of Statistics

Characteristics of Agriculture in Tanzania

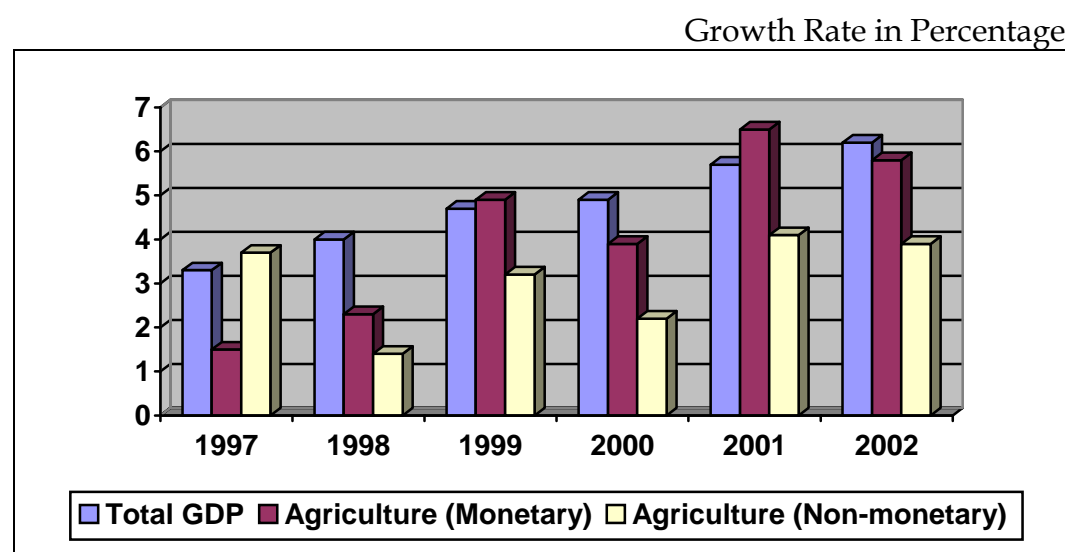
23.0 Agriculture in Tanzania can be characterised as follows: -

- It is dominated by smallholder farmers (peasants) cultivating average farm sizes of between 0.9 hectares and 3.0 hectares each.
- About 70 percent of Tanzania's crop area is cultivated by hand hoe, 20 percent by ox-plough and 10 percent by tractor.
- It is mostly (more than 99%) rain-fed agriculture.
- Tanzania has 15.1 million hectares of arable land and only one third of the arable land (one out of three hectares is cultivated) is cultivated.
- Food crop production dominates the agriculture economy 5.1 million hectares are cultivated annually, of which 85% is under food crops. The remaining 10 million hectares is used for grazing of animals.
- Women constitute the main part (70%) of agricultural labour force.
- The degree of sector linkages with the non-farm sectors is still very much underdeveloped as most crops are sold in raw unprocessed forms both in the domestic and export markets.
- The major constraint facing the agriculture sector is the falling labour and land productivity due to application of poor technology, dependence on unreliable and irregular weather conditions. Both crops and livestock are adversely affected by periodical droughts.

Performance of Agriculture in Tanzania

24.0 Agricultural GDP has grown at 3.3 percent per year since 1985, the main food crops at 3.5 percent and export crops at 5.4 percent per year (see chart below).

Chart No. 2: Growth Rates of GDP, Agriculture (Monetary) GDP, Agriculture (Non-monetary) at Factor Cost at Constant 1992 Prices for the past six years (1997 - 2002)



Source: Bureau of Statistics

25.0 Considering that the overall GDP growth target for halving abject poverty by 2010 is in the range of 6 -7 percent, this performance falls short of the needed growth.

26.0 The macroeconomic reforms instituted by the Government since the beginning of the last decade have had, and continue to have significant impact on the Agriculture sector. The economic reforms have led to the opening up of the sector to private investment in production and processing, input importation and distribution and agricultural marketing. Most of the production, processing and marketing functions have been assigned to the private sector. The Government has retained regulatory and public Support functions or facilitation role.

6.0 MAJOR CONSTRAINTS IN THE CROPS SUB-SECTOR

Rural Infrastructure and Power Supply

- 27.0 Rural infrastructure includes the road, railway and phone networks, water and electricity supply. Its development and maintenance is vested in several sectoral ministries, semi autonomous Government Agencies and Parastatal organisations e.g. TANESCO and TANROADS. Substantial developments have been recorded in recent years, e.g. construction of the Dar es Salaam – Mtwara Road and the mobile phone network. However, major constraints remain to be addressed as they discourage as they discourage potential private investors in the rural sector. These include the following: -
- a) Limited and poor road network
 - b) Power spread of the national power grid, and high electricity tariffs and unreliable power supply.
 - c) Inadequate piped water supply.
 - d) Limited exploitation of ground water and water harvesting technology.
 - e) Limited coverage of phone network.
 - f) Lack of a sound infrastructure maintenance culture.
 - g) Misuse/misallocation of road fund money and
 - h) Low Government budget allocations and excessive dependency on donors.

Over dependency on Rain fed Agriculture

- 28.0 One most important factor that contributes to high risk in Tanzanian agriculture is the unpredictability of rainfall and the recurrence of droughts and floods. Due to changes in general global weather conditions, this unpredictability has increased in recent years. The total average area under irrigation farming is a mere 200,000 ha which is negligible when compared to available arable land, as shown in the data below:

	Million hectares
Total Arable land	44.0
Cultivated land	10.1
Area Suitable for irrigation	1.0
Area under irrigation	0.2

Source: Agricultural Sector Development Strategy (2001)

29.0 Investment in irrigation infrastructure is known to be quite costly - (USD 5,000 – 10,000 per ha) but so is famine – in terms of forced food imports as well as the shame and disgrace of having to beg and receive food aid. Some Asian countries have made dramatic progress in irrigated production within the last 30 years and switched from food-deficit countries to grain-exporting countries. In the 2003/2004 budget the Tanzanian Government allocated T.Shs 2.6 billion for irrigation development. Spent properly, this allocation would only suffice to create irrigation infrastructure for about 500 hectares. This is definitely very much below required funding levels.

Limited Farm Power

30.0 About 70% of Tanzania's crop area is cultivated by hand-hoe, 20% by ox plough and only 10% by tractor power. The figures provide a clear indication of the magnitude of Tanzanian agriculture's constraints of poor rural technology and limited farm power. Labour saving technologies are essential in raising agricultural productivity. There is a general need to encourage and support increased use of draught animals for cultivation and transport purposes. Necessary interventions by the private sector, Government and other stakeholders ought to address the following specific constraining issues: -

- i. Farmers' access to appropriate farm machinery, equipment and tools to meet demand at reasonable affordable costs.
- ii. Availability and affordable tractor hire services.
- iii. Animal traction training by MATIs, LITIs, NGOs etc and
- iv. Development, testing and adaptation of appropriate farm equipment by CARMATEC, IPI etc.

Improved Seeds and Other Inputs

31.0 Improved seeds are critical requirements in any modern agriculture. About 80% of Tanzanian farmers do not plant improved and certified seeds but rely on their own local cultivars. There are already many locally bred, high yielding crop cultivars. The problem relates to poor funding for seed production in Government – owned seed farms and limited private sector investment in this area. A new Seed Act (2003) has just been passed by Parliament to pave way for more private sector involvement.

32.0 Following the collapse of cooperatives, it is difficult for farmers to obtain improved seeds and all other agricultural inputs in rural areas, other than in major trading centres. In recent years, there has been a significant drop in fertilizer and pesticides use due to their unavailability and/or high costs. Input distribution business is highly seasonal (September – February). Investors may therefore need to

combine this line of business with others (e.g. grain marketing) to remain in business in the off-season months.

- 33.0 There is a great need for farm service centres, to be located within the farming communities, to serve the roles of input supply, tractor and machine hire service, farm machinery repairs, produce storage, market information etc. Village stockists may be trained and supported to administer inputs provision for contract grower schemes through pre-paid or credit input vouchers.

Soil Fertility Management

- 34.0 Low crop yields are often associated with low soil fertility. Soil nutrients taken up by the harvested crops or lost through leaching must be replenished to maintain the productivity of the land. High crop yields obtained in newly opened land rapidly decline to uneconomic levels within three years in the absence of a proper fertilization plan. Adequate application of organic manures and soil erosion control are essential measures against soil degradation.

- 35.0 Most field crops respond to low rate applications, up to 60kg/ha of nitrogen and phosphorus fertilizers. Higher rates are more beneficial in the high - potential, highland regions of Tanzania where rainfall is more reliable and hybrid seeds are used. The level of mineral fertilizer use in Tanzanian agriculture is extremely low due to: -

- i. Inadequate supply in the rural areas
- ii. High prices following the removal of subsidy
- iii. Lack of input credit.

- 36.0 There is a sound rationale for re - introducing the fertilizer subsidy as an incentive and a first step in commercialising the smallholder producers. This financial year, the Ministry of Finance initiated a pilot subsidy plan for the Southern Highland Regions.

Pre and Post Harvest Losses

- 37.0 Crop protection services are critical in increasing productivity through reduction of pre and post harvest losses. Migratory pest outbreaks, e.g. African armyworms (*Spodoptera exempta*) and locusts, may wipe out the crops early in the season. Quelea birds attack the small grains at the milky stages. Field and storage insects and diseases may cause yield losses of up to 30%.

- 38.0 The Plant Protection Section of the Ministry of Agriculture and Food Security (MAFS) has a well established field programme for

monitoring and control of migratory pest outbreaks. More resources are needed to strengthen this service. The farmers' use of appropriate pesticides is limited because of:-

- i. Inadequate supply in rural areas
- ii. High prices of pesticides
- iii. Lack of knowledge on the choice and proper application of pesticides

39.0 Poor rural storage facilities and limited agro-processing contribute to the high levels of post-harvest crop losses in Tanzania.

Marketing and Trade Policies

40.0 The trade liberalisation policy has reduced the socialist state controls and the distortionary marketing and trade regimes which previously suppressed agricultural prices and incentives. The Government role is now largely confined to the provision of market information and monitoring market performance. Although the marketing systems have been mostly liberalised, efficient free markets for agriculture inputs and outputs are still not fully in place. The required stakeholder interventions must address the following critical constraints: -

- i. Lack of information on markets and prices of inputs and outputs
- ii. Unnecessary trade barriers in domestic and cross-border trade
- iii. Multiple taxes, local government levies, crop cess, licences and other fees. These ought to be further reviewed and reduced
- iv. Weak cooperative societies/unions and farmers associations
- v. Commodity Boards are still inadequate and need further restructuring and more stakeholder control
- vi. Inadequate incentives for export traders and
- vii. Inadequate marketing and trade policies which require constant monitoring and review.

Over-dependency on Few Primary Commodities

41.0 Tanzania's diverse agro-ecology offers a comparative advantage in the production of almost all food, beverage and industrial crops. Moreover, as a relatively small supplier of most export crops (except cashew), Tanzania can increase its production without affecting global supply and market prices. However, for many years, Tanzania's economy has relied heavily on a few export crops, namely, coffee, cotton, sisal, tobacco, tea and cashew.

42.0 This over-dependency is now declining as more farmers diversify to new crops which offer better returns compared to the traditional export crops whose global market prices have generally declined throughout the past decade. Smallholder farmers, traders, exporters (and new investors) are already active in the following potential areas:

- i. Non traditional crops e.g. Oil seeds, pigeon pea,
- ii. Horticultural crops, e.g. cut flowers, paprika
- iii. Organic crops e.g. Arabica and Robusta coffee, cocoa, vanilla, macadamia, tea, lemon grass, spices etc.

43.0 A major thrust in research and extension service is needed from the MAFS to offer targeted support to these new ventures.

Excessive Taxes and Levies

44.0 Taxes and levies are important sources of revenue for the execution of government functions and the development and maintenance of public infrastructure. However, excessively high tax levels and multiple levies are a major disincentive for on-going and new agricultural investments. Tax holidays of five years provided by the Tanzania Investment Centre Act may be inadequate for some investors, such as in high cost irrigation projects with long gestation periods. Tanzania's levels of corporate tax, VAT, import tariffs etc are relatively higher than in the neighbouring countries.

45.0 The issues of taxes, levies and tariffs are being reviewed and harmonised in line with the forthcoming East African Customs Union and SADC protocols. In the 2003/2004 budget, the Government abolished many so-called "nuisance taxes". This is the first time that such action has been taken in the country. Further action is needed in addressing the following concerns: -

- i. Inadequate public knowledge on the authorised taxes
- ii. Unauthorised road tolls and levies by local government and
- iii. Efficient, non-discriminatory and transparent tax administration.

Storage

46.0 Harvested agricultural produce is prone to storage damage by moulds, insects, rodents, high humidity etc. Estimated loss is about 30%. Due to lack of proper storage and agro-processing facilities, seasonal oversupply of produce (especially fruits and vegetables) results in depressed market prices and excessive waste and loss. Given such facilities, farmers can maximize returns by withholding sales during oversupply peaks until good market prices become obtainable.

- i. Appropriate storage structures (granaries, warehouses, silos etc) are generally lacking at points of production i.e. village, district levels. They are available only at national levels, even then not in sufficient capacities. The National Strategic Grain Reserve (SGR) is managed by one of the MAFs department which is only currently being strengthened. Major constraints and issues to be addressed by the Private Sector and other stakeholders include the following: -
 - i. Lack of appropriate (improved) storage structures,
 - ii. Limited storage capacity at village, district and national level,
 - iii. Limited access to chemical preservatives and limited knowledge on their proper use,
 - iv. Lack of cold storage facilities
 - v. Inadequate efficient transport and sufficiently developed market to rapidly move produce from surplus areas to deficit areas.
 - vi. Lack of clear policy specifying the role of Private Sector in managing the SGR and other food security matters.

7.0 MAJOR CONSTRAINTS IN THE ANIMAL SUB-SECTOR

Endemic and Epidemic Diseases

- 47.0 As noted in Para. 6.2 above, out of the total arable land of 44 million ha, only 10.1 million ha is presently under cultivation. The rest of the land, 33.9 million ha, is mostly (60%) infested by the tsetse fly (vector of Trypanosomiasis), which render it unsuitable for animal production. Other endemic and prevalent diseases are the East Coast Fever, Heartwater, Anaplasmosis, Babesiosis and Helminthiasis.
- 48.0 The major epidemic diseases include Rinderpest, Contagious Bovine Pleuro - Pneumonia (CBPP), Lumpy skin disease, Newcastle disease and the African swine fever. Effective control of these endemic and epidemic animal diseases is crucial to the achievement of increased animal production in Tanzania.

Animal Health Services

- 49.0 The main objective of animal health services is to diminish the prevalence of animal diseases and mortality of livestock and to protect consumers and livestock against infections, pests and diseases. Farm - level disease control is the responsibility of livestock keepers who buy the services, drugs, vaccines and inputs from the private sector. The role of the Government is limited to the control of epidemic and infections diseases, sanitary control and inspection and fighting pests and diseases beyond the farm level (e.g. tsetse control).
- 50.0 Four major constraints need to be addressed in the animal health services:-
- i. The slow pace of the establishment of private veterinary practices due to resources constraints
 - ii. The slow pace of the creation of disease free zones for the purpose of promoting international livestock and meat trade.
 - iii. Poor marketing infrastructure i.e. poor state of rural markets, holding grounds, stock routes, watering points, slaughter slabs, abattoirs, milk collection centres etc.
 - iv. Tsetse eradication to open up new land for ranching.

The Pastoral Systems

- 51.0 Livestock output has accounted for about 30% of the agricultural GDP in recent years. The carrying capacity of rangelands is estimated at 20 million animal units but currently there are only 16 million animal units. Moreover, about 90% of the national cattle herd is of the indigenous breed, namely the Tanzania Short Horn Zebu. There is therefore ample potential for investments in the livestock industry.
- 52.0 About 98% of the national cattle herd, estimated at 15.6 million, is under pastoralism and agro-pastoralism. The rest are under improved dairy cattle (1.4%) and improved beef cattle (0.6%) management systems. The seasonal and geographic variation in the availability of pastures and water is the most important factor in defining the characteristics of the pastoral systems, mainly:
- i. Seasonal migration of livestock
 - ii. Animal diseases spread and control
 - iii. Land degradation due to lack of sense of ownership of the grazing lands
 - iv. Recurring conflicts between crop growers and livestock keepers.
- 53.0 The long-term objective of interventions in the animal production sub-sector is to bring change in the traditional producers' attitudes and practices thereby increasing productivity. A parallel objective is to promote the expansion of private commercial production and trade by investors.

8.0 CRITICAL CONSTRAINTS AND REQUIRED INTERVENTIONS

54.0 Although the constraints faced by the rural sector are truly numerous, they do not carry the same weight (or urgency) in the envisaged agricultural development process. For the purpose of this review, all the constraints are conveniently divided into two categories i.e.

- i. Critical constraints and
- ii. Supportive factors.

55.0 It is noteworthy that the critical constraints, already identified and discussed at some length in the foregoing sections, must be dealt with in the short term period (2003 - 2005) because new investors will be constrained in the same way, and may be to the same extent, as the smallholder majority. Critical constraints are those deemed to have direct and short-term impact on the following targeted **priority areas**.

- Seed production
- Input supply
- Plant protection services
- Agro - processing storage
- Market infrastructure and information
- Trade barriers
- Irrigation development
- Rural finance and credit
- Taxes and levies
- Agricultural legislations

56.0 The major constraints related to the targeted priority areas, together with the recommended interventions are summarized below:-

TARGET AREA	RECOMMENDED INTERVIENTIONS	RESPONSIBLE AGENCIES
• Seed production	<ul style="list-style-type: none"> • Invest in seed production • Lease out government seed farms • Strengthen TOSCA Seed Certification and regulatory services 	<ul style="list-style-type: none"> • Private Sector • MAFS, MF • MAFS
• Input supply	<ul style="list-style-type: none"> • Establish farm service centres • Train and support village stockists • Re - introduce targeted in put subsidy 	<ul style="list-style-type: none"> • Private Sector • MAFS, Private Sector • MF
• Plant Protection services	<ul style="list-style-type: none"> • Strengthen early warning of pest outbreaks • Train extensionists on field and storage pests control • Strengthen phytosanitary services 	<ul style="list-style-type: none"> • MAFS • MAFS • MAFS

<ul style="list-style-type: none"> • Agro – processing and storage 	<ul style="list-style-type: none"> • Invest in agro processing and storage facilities • Improve rural power, water supply and roads • Provide additional incentives (if needed) 	<ul style="list-style-type: none"> • Private Sector • Sectoral Ministries • MF
<ul style="list-style-type: none"> • Market infrastructure and information 	<ul style="list-style-type: none"> • Improve market information service • Improve livestock market infrastructure • Establish and strengthen cooperatives and farmers organisations 	<ul style="list-style-type: none"> • MCM, MAFS, BET, MWLD • MWLD, LGA • MCM, MAFS, MWLD
<ul style="list-style-type: none"> • Trade barriers 	<ul style="list-style-type: none"> • Remove unnecessary local and cross-border trade barriers • Speed up the restructuring of the commodity boards 	<ul style="list-style-type: none"> • MCM, MIT, LGA • MAFS
<ul style="list-style-type: none"> • Irrigation development 	<ul style="list-style-type: none"> • Implement the National Irrigation Master plan • Invest in new small holder irrigation schemes • Invest in sprinkler and drip irrigation systems • Strengthen O & M functions in existing schemes • Lease out O & M functions to private operators 	<ul style="list-style-type: none"> • MAFS • MAFS, LGA • Private Sector • MAFS, LGA • MAFS, LGA, Private Sector
<ul style="list-style-type: none"> • Rural finance and credit 	<ul style="list-style-type: none"> • Reduce lending interest rates • Establish more Community Banks and SACCOS • Train and strengthen management of financial organisation • Establish a National Agricultural Bank 	<ul style="list-style-type: none"> • MF, BOT • BOT, MCM, LGA • MF, MCM, LGA • MF, BOT
<ul style="list-style-type: none"> • Taxes and Levies 	<ul style="list-style-type: none"> • Reduce further the multiple taxes and levies by central and local governments • Clarify and publicize the remaining taxes and levies 	<ul style="list-style-type: none"> • MF, PO-RALG
<ul style="list-style-type: none"> • Agricultural legislations 	<ul style="list-style-type: none"> • Review and update various agricultural legislations • Reduce cumbersome regulatory procedures (licences, permits etc.) 	<ul style="list-style-type: none"> • MAFS, AG • MAFS, MIT etc

9.0 SUPPORTIVE FACTORS AND RECOMMENDED INTERVENTIONS

57.0 Supportive factors relate to required interventions which are deemed to have **direct but long term** (beyond 2005) impact on the following targeted areas:

- Research and Extension service
- Training and Human capital
- Animal health services
- Agricultural mechanisation
- Soil conservation and land use planning
- Access to land
- Rural infrastructure
- Regulatory institutions
- Environmental issues
- Policy formulation and coordination

58.0 The major constraints (or factors) related to the above listed target areas, together with the recommended interventions, are summarized below:

TARGET AREA	RECOMMENDED INTERVIENTIONS	RESPONSIBLE AGENCIES
<ul style="list-style-type: none"> • Research and Extension Service 	<ul style="list-style-type: none"> • Increase funding for research and extension programmes • Promote and finance demand driven research • Motivate field staff • Provide transport vehicle loans 	<ul style="list-style-type: none"> • MF, MAFS, MWLD • Private Sector, MAFS, MWLD • MAFS,MWLD • MAFS,MWLD
<ul style="list-style-type: none"> • Training and human capital 	<ul style="list-style-type: none"> • Train technical personnel at al levels • Conduct demand driven short courses • Train farmers groups on improved husbandry practices • Improve rural literacy • Incorporate HIV/AIDS and Malaria control in curricula 	<ul style="list-style-type: none"> • MAFS,MWLD, MCM, SUA etc • MAFS,MWLD, MCM, Sua etc • MAFS, MWLD • MEC, LGA • MH, TACAIDS, MAFS,MWLD etc
<ul style="list-style-type: none"> • Animal Health Services 	<ul style="list-style-type: none"> • Strengthen tsetse control measures • Strengthen zoo sanitary services • Promote private veterinary practices • Create disease free zone to promote livestock export trade 	<ul style="list-style-type: none"> • MWLD, LGA, • MWLD • MWALD, Private Sector, Donors • MWLD, Donors, Private Sector
<ul style="list-style-type: none"> • Agricultural mechanisation 	<ul style="list-style-type: none"> • Train farmers on oxenization in suitable areas • Establish tractor hire services 	<ul style="list-style-type: none"> • MAFS • Private Sector
<ul style="list-style-type: none"> • Soils and water conservation and land use planning 	<ul style="list-style-type: none"> • Prepare comprehensive land use maps • Survey and demarcate land for private sector investment (Land Bank) 	<ul style="list-style-type: none"> • MAFS, MWLD, MLHS, LGS • LGA, Private sector

	<ul style="list-style-type: none"> Promote low cost erosion control measures e.g. The vetiver system 	<ul style="list-style-type: none"> MAFS, LGA
<ul style="list-style-type: none"> Legal access to land 	<ul style="list-style-type: none"> Publicise the land bank Stream line and the publicize the procedure for land acquisition for investors 	<ul style="list-style-type: none"> TIC, MLHS TIC, MLHS
<ul style="list-style-type: none"> Rural infrastructure 	<ul style="list-style-type: none"> Expand the rural roads network Maintain feeder roads Improve water supply (borehole, main harvesting etc) Extend rural power supply Expand rural communication 	<ul style="list-style-type: none"> TANROADS, Donors LGA, TANROAD MWLD, LGA, Donors MEM, TANESCO, Donors MCT, Private Sector
<ul style="list-style-type: none"> Regulatory institutions (TBS, TFDA, TPRI etc. 	<ul style="list-style-type: none"> Train specialist staff to carry out efficient regulatory services Provide adequate lab and other equipment for analytical work Provide incentives to retain skilled workers 	<ul style="list-style-type: none"> Sectoral Ministries, Universities, Donors, Sectoral Ministries, Donors Sectoral Ministries
<ul style="list-style-type: none"> Environmental issues 	<ul style="list-style-type: none"> Strengthen the VPO and NEMC to offer better environmental leadership Establish pre investment environmental assessment units in key ministries 	<ul style="list-style-type: none"> MF, Donors Sectoral Ministries
<ul style="list-style-type: none"> Agricultural policy formulation, coordination and monitoring 	<ul style="list-style-type: none"> Establish a high level Tanzania National Agricultural Council (TNAC) Review existing agricultural policies and set priorities Undertake continues monitoring of policy implementation 	<ul style="list-style-type: none"> Presidents office, Sectoral Ministries, Donors TNAC, PO-PC TNAC
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

10.0 RECOMMENDED PRIORITY AREAS FOR INVESTMENT

Seed Production

59.0 About 80% of Tanzanian farmers do not plant improved and certified seeds but rely on their own local cultivars. There is therefore a relatively large untapped market for improved seeds, especially of maize wheat and common beans (previously distributed by TANSEED). The Government liberalized the seed industry in 1990 and a new Seed Act (2003) has just passed through Parliament. The Private Sector is now more free and encouraged to engage in the production, distribution and marketing of improved seeds. With the requisite capital and seed production technology, they will take advantage of the growing local seed market, create farm jobs, promote seed out-growers and may even export to the regional EAC and SADC markets.

60.0 On its part, the government is committed to undertake the following supportive measures:

- i. Continue to fund seed research, quality control, certification, training and the establishment of gene banks.
- ii. Strengthen the Tanzania Official Seed Certification Agency (TOSCA) for better regulation of the seed industry to ensure that only prescribed quality seeds reach farmers.
- iii. Lease out to the Private Sector the inefficient and grossly under-utilized seed farms located in Arusha, Tanga, Morogoro, Iringa and elsewhere.
- iv. In partnership with the Private Sector, to initiate and maintain a strategic seed reserve as a national buffer stock to cater for emergency situations.

Out-growers/Contract farmer Schemes

61.0 Out-grower contract farmer schemes are potentially beneficial because they directly link Agribusiness to the smallholder sector. Often the Investor provides some input credit and extension service. In return, he gains a reliable source of quality produce for raw materials, local or export trade. The out growers benefit from reduced risks of market price fluctuations and increased yields from better crop and animal husbandry practices.

62.0 Successful examples of such schemes already exist in sugar cane, sisal, tobacco, oil seeds, paprika and tea. On its part, the government is now committed to provide the necessary support including the following:

- i. Invest in public infrastructure especially rural roads and power supply (as funds become available).
- ii. Make land available through the TIC - managed Land Bank.
- iii. Lease out to Private Operators the government owned seed farms.

Farm Service Centres

63.0 Farm Service Centres (FSC) located within major farming communities, serve the roles of input supply, tractor and machine hire service, farm machinery repairs, market information, produce storage, marketing etc. Their management require business skills that are best and more efficiently provided by the private sector. Establishment of Farm Service Centres within farming communities will reduce perennial problems of input availability in rural areas. The requisite start-up

capital may be high but financial institutions and commercial banks are likely to be supportive. Strong Cooperatives and successful farmers organisations should be encouraged to engage in FSC ventures for the benefit of their members.

Produce Marketing

- 64.0 Farmers face serious problems in produce marketing as discussed in paragraphs 40.0 above. In addition to a supportive /appropriate policy environment, investors critically require improved marketing systems. The Government should finalise the restructuring of crop/commodity boards and reduce further or even eliminate completely the remaining domestic and cross-boarder trading barriers. Given an improved commercial environment, profitable returns to investment are realisable in the following areas: -
- i. Domestic and export commodity trading
 - ii. Produce transportation (haulage)
 - iii. Crop storage (warehousing) and
 - iv. Livestock and livestock products trading

Agro Processing

- 65.0 Agro-processing is a critical element on overall agricultural development in any country and is probably the weakest link in Tanzania's agriculture. Only an estimated 1% of Tanzania's agricultural produce is processed compared to between 20% and 70% for some medium level third world countries. Agro-processing offers potential economic and social benefits, i.e.
- i. Value addition and higher produce prices
 - ii. Reduction of post-harvest losses estimated at 30% of harvested yields
 - iii. Rural employment creation
 - iv. Laying foundation for rural industrialisation
- 66.0 There is a great and urgent need to reduce Tanzania's economic over-dependency on unprocessed commodity exports. Special incentives may be needed to attract investors into agro-processing as provided to investors in mining sector. In addition the Government in collaboration with development partners should undertake the following: -
- i. Improve and stabilise water and power supply and reduce their tariffs.
 - ii. Establish quickly an internationally accredited laboratory, within Tanzania Bureau of Standards (TBS) or TFAD and
 - iii. Enact a law to curb unfair trade practices which threaten local agro-industries.

Investment in Irrigation Infrastructure

- 67.0 Over dependency on rain-fed farming renders Tanzania's agriculture highly vulnerable and risky. Stable crop and animal yields, higher returns and increased national food security can only be assured through irrigation farming. The current irrigated acreage is about 200,000 ha (only 0.5% of the arable land) producing mainly paddy, maize and vegetables. Potential high value crops include cut flowers, fruits and organic crops, using sprinkler and drip irrigation systems.
- 68.0 Potential national benefits and commercial profits are expected from investments in irrigated agriculture on the basis of the following interventions/observations:-
- i. The government is now ready to implement the National Irrigation Master Plan (T.Shs 2.6 billion allocated for 2003/2004)
 - ii. The government is committed to strengthening the O & M of existing small holder schemes and build additional ones, especially along the major river basins.
 - iii. Newly built schemes ought to be leased to private operators where water users associations (or irrigation cooperatives) are unable to handle the O & M functions efficiently.
 - iv. The Private Sector shall assume greater contract roles in respect to pre-investment studies, scheme designing and construction
 - v. The government ought to consider additional incentives for investments in irrigated agriculture due to their long gestations periods e.g. minimum 10 years tax holiday for new sprinkler and drip irrigation systems.

11.0 CONCLUSION

- 69.0 This study was necessitated by the hesitation and slow response of investors to take hold of investment opportunities in the agricultural sector. The Agricultural Sector Development Strategy (2001) and other recent studies undertaken on the agricultural sector were reviewed. Consultants interviewed and discussed with key senior staff in the agricultural sector ministries and other stakeholder organisations to seek clarification on some pertinent and knotty issues.
- 70.0 This report highlights the major constraints in the crops and livestock sub-sectors. It further defines the envisaged specific roles of the Private Sector, sectoral ministries, donors and other stakeholders in the short and long term periods. It is understood that the Government has successfully created a reasonably conducive and stable macro-economic environment (i.e. inflation rate and exchange rate) although domestic lending interest rates are still particularly high at 15% - 20%. The ASDS recommendations on the review and harmonisation of outdated agricultural legislations and restructure trade policies are being implemented by the relevant government organs. The outcome of these ongoing changes will provide a stronger stimulus to private sector investment, especially in the medium to long term.
- 71.0 The following have been identified and recommended as high potential and high priority investment areas for the Private sector and other stakeholders: -
- i. Seed Production
 - ii. Out-grower/contract farmer schemes
 - iii. Farm Service Centres
 - iv. Produce marketing
 - v. Agro-processing and
 - vi. Investment in irrigation infrastructure
- 72.0 With the exception of the issue of legal access to land, all priority investment intervention proposals contained in this report are consistent with the ASDS potential "*Quick win recommendations*". The knotty issue of land ownership and commercial farmers requires a broader public consensus in order to avoid potential political conflicts in the long term, particularly that this may not necessarily lead to higher economic growth of the agricultural sector nor of the economy in general.