THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT



LIVESTOCK SECTOR DEVELOPMENT STRATEGY

P.O.Box. 9152,
DAR ES SALAAM

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LIST OF ABBREVIATIONS AND ACRONYMS

ADRI	Animal Disease Research Institute
AI	Artificial Insemination
AIDS	Acquired Immune Deficiency Syndrome
ASARECA	Association for Agricultural Research in Eastern and Central Africa
ASDP	Agricultural Sector Development Programme
ASDS	Agricultural Sector Development Strategy
ASLMs	Agricultural Sector Lead Ministries
BSE	Spongiform Encephalopathy
CAE	Caprine Arthritis Encephalitis
CBO	Community Based Organization
COSTECH	Commission of Science and Technology
CSO	Civil Society Organization
CVL	Central Veterinary Laboratory
DADPs	District Agricultural Development Plans
DAFCO	Dairy Farming Company Ltd
DAS	District Administrative Secretary
DDP	District Development Programme
DFZ	Disease Free Zone
ECF	East Coast Fever
FAO	Food and Agriculture Organization of the United Nations
FBO	Faith Based Organization
GDP	Gross Domestic Product
ha.	Hectare
HBU	Heifer Breeding Unit
IFPRI	International Food Policy Institute
ILRI	International Livestock Research Institute
ITK	Indigenous Technical Knowledge
LMU	Livestock Multiplication Unit
LGAs	Local Government Authorities
LGRP	Local Government Reform Programme
LITI	Livestock Training Institutes
LME	Liquid Milk Equivalent
LPRI	Livestock Production Research Institute
LSDS	Livestock Sector Development Strategy
M & E	Monitoring and Evaluation
MoAC	Ministry of Agriculture and Cooperatives
MAFC	Ministry of Agriculture Food Security and Cooperatives
MDG	Millennium Development Goal
MCDGC	Ministry of Community Development Gender and Children
MEVT	Ministry of Education and Vocational Training
MEM	Ministry of Energy and Minerals
MoF	Ministry of Finance
MFI	Micro-Finance Institution
MHSW	Ministry of Health and Social Welfare
MID	Ministry of Infrastructure Development
MITM	Ministry of Industry Trade and Marketing
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania
MLD	Ministry of Livestock Development
MLFD	Ministry of Livestock and Fisheries Development
MLHHSD	Ministry of Lands, Housing and Human Settlements Development

MNRT	Ministry of Natural Resources and Tourism
MOET	Multiple Ovulation Embryo transfer
NACTE	National Council for Technical Education
NAFCO	National Agricultural and Food Corporation
NAIC	National Artificial Insemination Centre
NARCO	National Ranching Company Ltd
NEAP	National Environmental Action Plan
NEMC	National Environmental Management Commission
NGO	Non Governmental Organization
NLP	National Livestock Policy
NLUPC	National Land Use Planning Commission
NSGRP	National Strategy for Growth and Reduction of Poverty
OIE	World Organization for Animal Health
PMO-DMD	Prime Minister's Office-Disaster Management Department
PMO-RALG	Prime Minister's Office-Regional Administration and Local Government
PSRP	Public Service Reform Programme
RAS	Regional Administrative Secretary
RDS	Rural Development Strategy
R&D	Research and Development
RVF	Rift Valley Fever
SACA	Savings and Credit Associations
SACCOs	Savings and Credit Cooperative Societies
SADC	Southern Africa Development Community
SIDO	Small Industries Development Organization
SME	Small and Medium Enterprises
SUA	Sokoine University of Agriculture
TAD	Trans-boundary Animal Disease
TBD	Tick-born Disease
TAMPA	Tanzania Milk Processors Association
TAMPRODA	Tanzania Milk Producers Association
TANESCO	Tanzania Electrical Supply Company
TAS	Tanzania Assistance Strategy
TAWIRI	Tanzania Wildlife Research Institute
TBS	Tanzania Bureau of Standards
TDV	Tanzania Development Vision
TFDA	Tanzania Food and Drug Authority
TFNC	Tanzania Food and Nutrition Centre
TIRDO	Tanzania Industrial Research and Development Organization
TLU	Total Livestock Unit
TPRI	Tropical Pesticides Research Institute
TSZ	Tanzania Short Horn Zebu
URT	United Republic of Tanzania
USA	United States of America
VCT	Veterinary Council of Tanzania
VIC	Veterinary Investigation Centre
VPHFS	Veterinary Public Health and Food safety
VPO	Vice President's Office
WB	World Bank
WTO	World Trade Organization

Executive summary

The Livestock Sector

Livestock farming is one of the major agricultural activities in the country that is contributing towards achieving development goals of the National Growth and Reduction of Poverty (NSGRP). The livestock industry contribution to the Agricultural Gross Domestic product is about 13%, and contributed 3.8 % of the National Gross Domestic product in 2010 compared to 4.0% in 2009. This is mainly due to low growth rates, high mortality rates, low reproductive rates and poor quality of the final products from the industry. Modest improvement of these production coefficients coupled with adding value through processing could significantly increase output and income from the livestock industry.

The livestock sector grew by 3.4% in 2010, compared to 2.3% in 2009. This level of growth is much lower than the 9.0% growth envisaged under NSGRP by 2010. One of the key objectives of the national livestock policy is to "*contribute towards national food security through increased production, processing and marketing of livestock products to meet national nutritional requirements"*. To what extent this objective has been attained is given by the latest available production figures.

The estimated production of livestock products such as meat, milk, and eggs increased between the year 2000/2001 and 2009/2010. Total meat production increased from 323,000 tones in 2000/01 to 449,673 tones in 2009/2010, an increase of 39.2%. During the same period, milk production has increased from 814 million to 1.64 billion litres, an increase of 102% while in the same period egg production increased from 600 million to 2.9 billion eggs.

The estimated per capita consumption of meat, milk and eggs increased from 5.3 kg 22 litres and 19 in 2000/01 to 12 kg, 43 litres and 75 eggs respectively in 2009/2010. That reflects an increase of 140%, 95.4% and 295% equivalent to an annual average growth rate of 11.9, 10.1 and 30.9% for meat, milk and eggs, respectively. Nevertheless, these consumption levels are still lower than those recommended by FAO of 50 kg of meat, 200 litres of milk and 300 eggs per capita needed for sustainable human growth and development. From the data, it shows that, the current per capita consumption of meat, milk and eggs stands at only 24%, 22% and 25%, respectively when compared to recommended levels by FAO.

In view of the importance of the livestock sector to the Tanzanian economy and to the people's livelihoods, the Ministry of Livestock and Fisheries Development commissioned a study to formulate a Livestock Sector Development Strategy (LSDS) for operationalising the National Livestock Policy (NLP) of 2006.

Rationale for Livestock Sector Development Strategy

While the Agricultural Sector Development Strategy (ASDS), was based on the Agriculture and Livestock Policy of 1997, the Government and livestock industry stakeholders elaborated a refined National Livestock Policy (NLP) of 2006 which opens new avenues and challenges for accelerating the growth and contribution of the livestock industry to poverty reduction and the national economy by making more optimal use of available land, animal and human resources. Furthermore, while the ASDS identifies several interventions in the livestock industry such as the demarcation of land and surveys for potential investment zones and grazing lands for pastoralists and agro-pastoralists; development of plans for settling pastoralists; establishment of disease free zones; rehabilitation of livestock holding grounds; watering points; stock routes; livestock markets; slaughter slabs/abattoirs; and establishment of milk collection centres, they are not directly addressed in the Agricultural Sector Development Programme (ASDP). The ASDP cluster strategies target mainly irrigation and water resources management, agricultural research and extension services, technical services and farmer empowerment.

At the LGA level, support of the ASDP issues related to livestock development are expected to be addressed through District Agricultural Development Plans (DADPs) but competing needs for resource allocation have more often than not, tended to relegate livestock to the back seat. The zonal stakeholder consultations held in May 2008 showed that only about 10-20% of projects implemented under DADPs are livestock projects even in regions in which livestock play significant role in the livelihoods of the rural populations. Land use conflicts between farmers and pastoralists persist in several districts in the country in spite of government efforts to resolve them, mainly because the issue of land allocation for pastoralist has not been matched with secure land tenure rights and infrastructure development. The NLP (Section 1.3 (i); pg 6) recognizes that commercialization of the livestock sector will require among other things “proper arrangements to allocate land and give ownership of grazing areas according to traditional or legal procedures”. It addresses other five generic challenges and commodity specific issues backed by policy statements that provide a framework for meeting the broad objective of the NLP, i.e. “to commercialize the industry and stimulate its development while conserving the environment”.

The LSDS is an operation tool for the NLP that spells out actionable interventions required to meet the livestock sector Vision, Mission and Objectives in short, medium and long term. It provides a sector-wide framework for formulation of Livestock Development Programmes (LDP) as well as private sector led commodity/industry (dairy, beef, pork, poultry meat, eggs, hides and skins) specific strategies, programmes and investment plans for implementation in the various stages of the livestock value chains and among the vulnerable groups or actors in the value chains in ways that will define the roadmap for the sector for many years to come. It will also facilitate coordination of livestock development interventions and actions by the various stakeholders in a more focused and coherent manner. During the current phase of implementation of ASDP (up to 2013), the Livestock Sector Development Strategy will complement and deepen further the Livestock aspects of ASDP through direct targeting of Livestock Sector interventions in Districts where livestock farming plays a significant role in the livelihoods of the local population and has therefore great potential for poverty reducing impacts.

Strengths and Weaknesses

Globalization, regional integration and changes in the national economy offer opportunities for rural and urban development by providing markets for live animals and animal products. In addition, there is unexploited domestic market. Tanzania is a net importer of dairy products and to a less extent, of beef, pork, poultry meat and eggs. Tanzania has a comparative advantage of producing various animal species and livestock products for these markets because it has a strong natural resource base and climate favourable to commercial and market oriented livestock production. Prevalence of diseases, poor marketing infrastructure and inefficient production methods limit accessibility to both internal and external markets and will have to be dealt with under the LSDS.

The Strategy

The LSDS is a framework for further coordinated initiatives in the sector. It seeks to deepen the gains, albeit insufficient, made so far under ASDP. The choice of the items in the strategy has inevitably been influenced by the issues raised in the NLP. The strategic framework is designed to accommodate the existing situation with the private sector as the principal target whilst also considering coordination with the local government.

The LSDS has a strong focus on poverty alleviation and on improved sustainable and environmentally friendly livestock production and productivity. It is directed at improving general animal health and mastering better control of livestock diseases. Marketing, trade and value addition including fattening, grading, processing and packaging will be improved through the proposed strategic interventions. The strengthening of institutions and human resources capacity building is in line with the objectives of the public service reform policy.

The issues to be addressed or targeted are grouped into six strategic intervention areas:

(i) Sustainable use of land, water, pastures and rangelands;
(ii) Public/Private sector investments and financing for improvement of livestock value chain productivity and efficiency (production, marketing and processing);
(iii) Control of livestock diseases and public health;
(iv) Livestock Development Services (Research, training, extension services, capacity building, farmer empowerment and related infrastructure);
(v) Cross cutting and Cross-Sectoral Issues; and
(vi) Governance, regulatory and institutional arrangements.

These strategic intervention areas are interdependent and implementation of the strategy should address all of them if it is to be effective. At the local government and community level the LSDS encourages a participatory community development approach. In this manner District Councils or Local Government Authorities (LGAs) and communities will be assisted to enhance their ability to plan and implement appropriate interventions of public goods nature and to address deficiencies in the livestock sector perceived to be important locally. The private sector participation in production, marketing, value addition, animal health delivery systems and marketing of livestock and livestock products will be central to the commercialization of the sector. Bearing the important role played by the smallholder livestock farmer, training and other forms of assistance will be provided to enhance capabilities and farmer empowerment including support to and strengthening of farmers' organisations and institutions.

Institutional Framework for Implementation of the LSDS

The LSDS will be implemented within the context of several major Government reform programmes, including the Macroeconomic Reform Programmes, the Local Government Reform Programme and the Public Sector Reform Programme as well as ASDP. The main actors in the implementation of the LSDS will include private livestock chain actors directly involved in within-chain exchanges (e.g. producers, processors, traders) and external actors who do not directly handle the livestock and livestock products but provide services, expertise and may exert influence on the performance of the livestock chains (e.g. local government, civil society organizations). The direct chain actors are mainly the private sector while the external actors can fall under the public or private sector.

The chain actors who are also the private sector include smallholder livestock keepers, and agri-businesses (medium and large-scale producers, traders, transporters, importers, exporters, processors, supermarkets, marketers and hotels). Other livestock farmers' groups and organizations directly involved in livestock chain exchanges include non-governmental organizations (NGOs), community-based organizations (CBOs) and faith based organizations (FBOs) as well as communities.

The role of the public sector will be as elaborated in the NLP (pg 74-76). Government in collaboration with other stakeholders will provide core public services such as extension, information, research, training and livestock infrastructure, formulating policies, regulatory framework and protection of the environment. Public sector roles in the LSDS will be implemented by the Agricultural Sector Lead Ministries (ASLMs) i.e. Ministry of Livestock and Fisheries Development (MLFD), Ministry of Agriculture Food Security and Cooperatives (MAFC), Prime Minister's Office Regional Administration and Local Government (PMO-RALG), Ministry of Water and Ministry of Industries Trade and Marketing (MITM). Institutions and Commodity Boards under MLFD (NARCO, CVL, TVC, TLRI, TDB, TMB etc) as well as those in other related Ministries (e.g. TFDA, TBS, SIDO, TFNC, CAMARTEC, TIRDO) will also have important roles to play.

Coordination Mechanism

The implementation and coordination of the LSDS interventions will be mainstreamed in existing Government framework for the coordination of the ASDP and NSGRP (MKUKUTA). This includes the coordination of the MLFD with other agricultural sector related ministries, institutions, development partners, agencies and other stakeholders such as livestock farmers, traders, processors and their associations.

Monitoring and Evaluation:

During the lifetime of ASDP (up to 2013), the Monitoring and Evaluation (M&E) System for the LSDS will be linked to the M&E framework laid out in the ASDP and NSGRP, the National Livestock Policy (NLP) and to M&E systems of each participating sectoral Ministry. The Directorate of Policy and Planning of the MLFD will not conduct a separate M&E but rather each intervention will have its own M&E indicators to measure performance and will inform the individual units through the ASDP and NSGRP on issues pertaining to best practices by encouraging selection of simpler and more affordable indicators and ensuring the usability of the results. At the national level, the Directorate of Policy and Planning of the MLFD will ensure

compliance with national poverty monitoring system indicators and therefore contribute to the harmonisation and prioritisation of the poverty monitoring master plan indicators.

Cost and benefits of implementation of LSDS

An indicative budget has been prepared of the likely costs of the interventions that will be required to implement the LSDS. This amounts to around US$ 281 million over a period of five years. The following benefits are expected to accrue from implementation of LSDS over a five year period (2014/2015).

(i) Calf mortality in the traditional sector will decrease from the current 30-45% due to TBD to less than 10%;
(ii) Mortality among local chicken will be reduced from current level of more than 60% to less than 30% ;
(iii) The traditional cattle herd will increase by 3.5% per annum to 21.5 million, 10% of which will be improved beef breeds or Tanzania Shorthorn Zebu finished in commercialised feedlots;
(iv) Cattle off take from the traditional smallholder sector will improve from 8-10% to 12-15% leading to meat production increasing from 449,673MT to 809,000MT ;
(v) Commercial ranching in NARCO and privatised satellite ranches will increase from the present 83,160 cattle to 127,000 cattle with an off-take rate of 22-23% supplying about 10,000 steers equivalent to 1500 MT of beef per annum;
(vi) Number of improved dairy cattle will increase from 605,000 cattle kept by about 150,000 farm households through annual insemination of about 100,000 doses to about 985,000 cattle kept by about 300,000 farmers;
(vii) Milk production growth will increase from current 5-6% per annum to 7% per annum reaching 2.25 billion litres;
(viii) Egg production will increase by 10% per annum from 2.9 billion eggs to 4.7 billion;
(ix) Production of hides and skins will increase by 12% per annum from 5 million pieces worth 21 billion T.shs in 2008 to 9.8 million pieces worth about 40 billion T.shs;
(x) Overall livestock sector growth will improve from the current 2.3% per annum to 4.5% per annum; and
(xi) Overall livestock contribution to the GDP will increase from 4.7% equivalent to 789 million US $ (947 billion T.shs) in 2008 to 7% worth 1.27 billion US $ (1,440.30 billion T.shs).

Priority areas for immediate action

While the full implementation of the LSDS will be done after a comprehensive livestock development programme and plans have been worked out, there are areas that are a pre-requisite for sustainable development of the livestock sector and need immediate attention. These include:

Strategic Intervention Area 1: Issues of Land Water and Rangelands.

Immediate action is required to accelerate ongoing efforts to institute land use planning in all districts at the village level, especially in districts with land use conflicts between pastoralists and crop farmers. Of particular importance is the need to designate certain districts and/or regions for specific livestock commodities especially for ruminant meat and milk production based on agro-climatic conditions, existing infrastructures and opportunities as well as cultural traditions.

Strategic Intervention Area 2: Public/Private Sector Investments in the Livestock Sector Value Chain

In order to commercialize livestock production, strategies and interventions proposed under this Strategic Area need to be given immediate attention especially with regard to improvement of financial services and incentives favourable for private sector participation in production, processing and marketing of livestock and livestock products.

Strategic Intervention Area 3: Control of Livestock Diseases and Public Health

The capacity to handle epidemic and endemic infectious and non infectious diseases hinges on strength of the veterinary services. The control of trans-boundary animal diseases (TADs) and diseases of economic importance and zoonotic diseases is the prime responsibility of Ministry of Livestock and Fisheries Development. The ability to monitor and conduct surveillance of the health and productivity of the animal populations and monitor the health related attributes of animal products and veterinary biologics can be feasible if veterinary services are enabled by sound policy and strategies.

Strategic Intervention Area 4: Livestock Development Support Services

Supportive services outlined under this Strategic Area are important drivers of change and development especially for the majority of smallholder livestock farmers. Adequate extension services, training, research and farmer empowerment interventions are necessary to bring about the technological innovations that are required to transform the livestock sector to become commercialized and environmentally sustainable. These efforts have to be backed up by a continuous and sustained veterinary services delivery, disease surveillance, preparedness and adequate control measures.

1. INTRODUCTION

1.1 Background to the Livestock Sector

Livestock farming is one of the major agricultural activities in the country that is contributing towards achieving development goals of the national Growth and Reduction of Poverty (NSGRP). The livestock industry contribution to the Agricultural Gross Domestic product is about 13%, and contributed 4.0 % of the National Gross Domestic product in 2009 compared to 4.7% in 2008. This is mainly due to low growth rates, high mortality rates, low reproductive rates and poor quality of the products. Modest improvement of these production coefficients coupled with adding value through processing could significantly increase output and income from the livestock industry. However, the contribution of the livestock industry to the economy is not limited to its share in the total GDP but also plays other roles such as supply of food products of animal origin, thus contribute to food security, convert forages and crop residues into edible products, source of income and employment, contribute in crop farming as a source of manure and draught power and fulfils cultural roles in livestock farming communities.

More importantly agriculture supports the livelihoods of 82% of the population, 70% of which is rural (URT, 2001). About 37% (1,745,776 out of 4,901,837) of the households keep livestock. The eight regions of Mwanza, Shinyanga, Mara, Singida, Tabora, Dodoma, Arusha and Manyara, which have 39% of the human population of Mainland Tanzania (33,667,659), account for more than 70% of the total cattle herd in the country (Appendix 1). At the household level, livestock keeping is therefore important and an integral part of agriculture based livelihoods for a significant proportion of the Tanzania population. Livestock contribute to the national food supply directly in the form of meat, milk and eggs and indirectly through providing incomes with which cereals, legumes, roots and tubers can be purchased, particularly in pastoral societies and during crop failures in some parts of the country.

In the last decade the livestock sector has been growing at an average of 2.7% compared to the population growth rate of 2.9% and contributed 5.9% of the GDP in 2005 which has declined further to 4.0% by 2009 mainly due to growth of other sectors such as mining and tourism and the recent recasting of economic performance index data to year 2002 instead of 1999 constant prices. According to NSGRP, livestock industry was expected to grow at the rate of 9% by the year 2010. The gap between what is planned and what is being achieved is too wide and is a major challenge for all livestock sector players.

The estimated production of livestock products such as meat, milk, and eggs increased between the year 2000/2001 and 2009/2010. Total meat production increased from 323,000 tones in 2000/2001 to 449,673 tones in 2009/2010, an increase of 39.2%. During the same period, milk production has increased from 814 million to 1.64 billion litres, an increase of 102% while in the same period egg production increased from 600 million to 2.9 billion eggs. During the period 1995 to 2008, annual meat production increased from 244,000 tones to 449,673 tones (6.5% per annum) while milk increased from 555 million litres to 1.64 billion litres (15.0% per annum), 70% of which was from the traditional sector. During the same period egg production increased from 600 million to 2.9 billion eggs equivalent to 29.5% increase per annum. Per capita consumption of meat and milk increased to 12 kg and 43 litres against the FAO recommended per capita consumption

rates of 50 kg and 200 litres respectively. The estimated per capita consumption of milk and eggs increased from 22 litres and 19 in 2000/01 to 43 litres and 75 eggs respectively during the same period while 5.85 million pieces of hides and skins worth TAS 13.5 billion were collected. About 86% of the hides and skins were exported in raw form. These achievements indicate that, with concerted efforts a lot more can be achieved.

Given the large number of livestock and the fact that the country is endowed with abundant land and forage resources, the contribution of the livestock sector to the growth of the national economy, food security and poverty reduction can be substantial. Out of the total 94 million hectares of land resource, 50 million hectares are rangelands, suitable for grazing. The grazing area has the capacity to support over 20 million Tropical Livestock Units (TLUs)[1] weighing an average of 250 kg each, an equivalent of 5 goats or sheep. Tanzania has a large population of livestock. The 2009/2010 official statistics, show that there are 19.2 million cattle, 13.7 million goats and 3.6 million sheep. Other livestock kept in the country include 1.9 million pigs, 35 million indigenous poultry and 23 million improved chicken and other species.

Despite this large livestock population size, its contribution to the national economy (GDP) has persistently been declining from 18% to only 5.9% between 2001 and 2005 (Economic Survey, 2005), and has declined further to 4.0% in 2009, which is disquieting. Out of this contribution, beef contributes 40%, dairy 30% and the remaining is contributed by small stock. In 2009, the livestock sub-sector grew by 2.3%%, much of the growth emanating from increase in herd size rather than productivity per livestock unit. Even though the livestock industry plays an important role as a source of food (meat, milk and eggs), income and employment, it is possible to improve further the contribution of the livestock to farmers' livelihoods and the national economy in general.

1.2 Rationale for Livestock Sector Development Strategy

In view of the importance of the livestock sector to the Tanzanian economy and to the people's livelihoods, the Ministry of Livestock and Fisheries Development decided to formulate a livestock sector development strategy as a first step towards operationalising the National Livestock Policy (NLP). The policy identifies issues affecting and impacting upon the country's livestock industry including new issues such as livestock identification and traceability, biotechnology and bio-safety, characterisation and conservation of livestock genetic resources and emerging diseases such Avian Influenza which were not previously addressed in the Agriculture and Livestock Policy of 1997. The NLP gives policy statements that provide guidance for achieving the policy objectives and institutional framework for implementing the policy. A comprehensive strategy is therefore required to translate the identified issues and policy objectives into priority areas for strategic interventions and programmes that could bring about the required rapid transformation of the livestock sub-sector.

While the Agricultural Sector Development Strategy (ASDS) was based on the Agriculture and Livestock Policy of 1997, the Government and livestock industry stakeholders elaborated a refined NLP which opens new avenues and challenges for accelerating the growth and contribution of the livestock industry to poverty reduction and

[1] One TLU = 0.5 of standard Livestock Unit (LU) and is the equivalent of adult tropical cattle buffalo of 250 kg live weight or 5 sheep/goats

the national economy by making more optimal use of available land, animal and human resources. Furthermore, while the ASDS identifies several interventions in the livestock industry such as the demarcation of land and surveys for potential investment zones and grazing lands for pastoralists and agro-pastoralists; development of plans for settling pastoralists; establishment of disease free zones; rehabilitation of livestock holding grounds; watering points; stock routes; livestock markets; slaughter slabs/abattoirs; and establishment of milk collection centres, they are not directly addressed in the Agricultural Sector Development Programme (ASDP). The ASDP cluster strategies target mainly irrigation and water resources management, agricultural research and extension services, technical services and farmer empowerment.

At the LGA level, support of the ASDP issues related to livestock development are expected to be addressed through District Agricultural Development Programmes (DADPs) but competing needs for resource allocation have more often than not, tended to relegate livestock to the back seat. The zonal stakeholder consultations held in May 2008 showed that only about 10-20% of projects implemented under DADPs are livestock projects even in regions in which livestock play significant role in the livelihoods of the rural populations. Land use conflicts between farmers and pastoralists persist in several districts in the country in spite of government efforts to resolve them, mainly because the issue of land allocations for pastoralist has not been matched with secure land tenure rights and infrastructure development. The NLP (Section 1.3 (i); pg 6) recognizes that commercialization of the livestock sector will require among other things "proper arrangements to allocate land and give ownership of grazing areas according to traditional or legal procedures". It addresses other five generic challenges and commodity specific issues backed by policy statements that provide a framework for meeting the broad objective of the NLP, i.e. "to commercialize the industry and stimulate its development while conserving the environment".

The LSDS is an operational tool for the NLP that spells out actionable interventions required to meet the livestock sector Vision, Mission and Objectives in short, medium and long term. It provides a sector-wide framework for formulation of Livestock Development Programmes (LDP) as well as private sector led commodity/industry (dairy, beef, pork, poultry meat, eggs, hides and skins) specific strategies, programmes and investment plans for implementation in the various stages of the livestock value chains and among the vulnerable groups or actors in the value chains in ways that will define the roadmap for the sector for many years to come. It will also facilitate coordination of livestock development interventions and actions by the various stakeholders in a more focused and coherent manner. During the current phase of implementation of ASDP (up to 2013) , the LSDS will complement and deepen further the livestock aspects of ASDP through direct targeting of livestock sector interventions in districts where livestock farming plays a significant role in the livelihoods of the local population and has therefore great potential for poverty reducing impacts.

1.3 The LSDS Formulation Process

The Government launched the National Livestock Policy in December 2006. In November 2007, The Ministry of Livestock Development (MLD), now Ministry of Livestock and Fisheries Development (MLFD) floated a tender for the formulation of LSDS.

The process of formulating the LSDS adopted a step-wise consultative approach, involving a wide range of stakeholders with different backgrounds related to livestock development who provided invaluable insights on crucial issues addressed by the strategy. The stakeholders include, among others, Government ministries, departments and agencies, private sector organizations, civil society and non-governmental organizations, development partners, and representatives of different groups of actors in the livestock value chains including livestock producers, traders, processors and consumers.

Following an inception meeting which agreed on the procedures for the preparation of the LSDS, the process started with desk review of literature. This was followed by stakeholder consultations, mainly through field surveys, zonal workshops held in three representative zones (Southern, Lake and Eastern), ASDP Wider Sector Policy Dialogue Meeting and a national livestock stakeholders' workshop. The strategies presented in this document are a reflection of the inputs received through this consultative process and represent the views of a wide range of stakeholders.

2 PERFORMANCE OF THE LIVESTOCK SECTOR

2.1 Livestock production and productivity features

The spatial distribution of livestock in Tanzania depends on the agro-climatological zones: Arid, semi-aid, sub-humid, humid and the highlands. Pastoralism in which traditional cattle, sheep and goats predominate is concentrated in the northern (Arusha and Manyara) savannah plains where climatic and soil conditions do not favour crop production. Agro-pastoralism is found in low rainfall areas of western (Shinyanga and Tabora) and central (Dodoma and Singida) zones where shifting cultivation of sorghum and millet is practiced. Smallholder dairy production include cattle under coconut systems in the coastal regions and stall fed crossbred dairy cattle in the Northern and Southern highlands, Kagera and peri-urban and urban dairying in and around major cities and towns. Commercial ranching (mostly NARCO beef ranches) accounts for about 7% of the marketed milk (FAO, 2005). A number of technical, policy and institutional and specific agro-ecological zone related constraints have influenced the performance of the livestock sector as shown below.

2.1.1 Land and Pastures

Tanzania is endowed with 95.5 million ha of land of which 44 million ha are classified as suitable for agriculture (Table 1). Only 10.6 million ha are under cultivation. About 50 million ha of rangelands are suitable for livestock grazing but only 24 million ha are currently being utilized and are supporting 12.1 million ruminant TLUs (Table 1). The rest (about 40%) of land suitable for ruminant livestock keeping is currently not being utilized due to tsetse flies which are widespread in the country. Control of tsetse flies and typanosomes they transmit to livestock is constrained by uncontrolled livestock movements, proximity of wildlife to grazing areas, development of resistance to insecticides and high cost of control. Eradication of tsetse and development of the necessary infrastructure to support ruminant livestock in new areas in a sustainable manner will require creation of favourable environment for smallholder farmers' or medium and large scale investments in new livestock farms for meat, dairy and egg production.

Regarding land use activities, by 2009, a total of 1,423,201.28 hectares of land spread over 266 villages in 33 districts and 15 regions have been allocated for livestock. Two dams, 1,227 charco dams and 21 deep wells have been constructed for livestock use. The rate of demarcation of land for livestock has been a slow process due to inadequate funding and inadequate survey equipment and personnel at the district level. More land needs to be allocated for the exclusive use of livestock in areas where livestock have been newly introduced such as in Lindi, Coast regions and parts of Morogoro where farmer-livestock keepers conflicts is a recurrent problem.

Table 1: Land resource and livestock population in Tanzania		
Type of Ruminant livestock	**Million ha**	
Total land area	95.5	
Arable land (ha)	44.0	
Cultivated land	10.56*	
Area Suitable for irrigation	29.4	
Area under Irrigation	0.29	
Area under medium and large scale farming	1.5	
Rangeland	50.0	
Land under livestock	24.0	
Per capita land holding (ha/head)	0.1	
Livestock population		
	Millions	**Million Livestock Units)**
Cattle	19.2	9.6
Goat	13.7	1.37
Sheep	3.6	0.36
Pigs	1.9	0.19
Poultry (indigenous +exotic)	58.0	0.58
Total	**96.4**	**12.1**

a) LU Conversion factor: cattle and Buffaloes, 0.5; Sheep and goats 0.1 and poultry 0.01 (FAO, 2003)
** 24% of arable land is currently cultivated (2008)*

2.1.2 Beef Cattle Productivity

The Tanzania Shorthorn Zebu (TSZ) and Ankole breeds kept by traditional agropastoralists (80%) and pastoralists (14%) are the main beef breeds in the country. The traditional sector accounts for about 94% of the beef produced in the country. Commercial ranching and dairy herd account for only 6% of the total cattle herd. The National Ranching Company (NARCO) is the main operator of commercial beef production in the country. Breeds kept on some commercial farms include the Boran, Mpwapwa, Charolais, Chianina, Simmental, Hereford, Brahaman, Santa Getrudes and Aberdeen Angus. The TSZ is well adapted to local conditions but has a small mature live bodyweight ranging from 150 - 250 kg due to low genetic potential and poor husbandry practices. NARCO ranches with a total of 15 ranches with a land holding of 609,164 ha and stocking capacity of 185,000 head have been chronically under stocked at less than 50% of its capacity since 1985 when the number of stock reached an all-time high of 90,000 head. Productivity figures for the traditional sector and NARCO ranches remain well below expected standards (Table 2).

Ranch improvement activities include fencing and bush clearance whereby 23 and 5 km of fencing and 850 and 200 ha have been cleared of bush in Kongwa and Ruvu ranches respectively. Out of 219,930 ha of NARCO ranches, 134 satellite ranches of 2000- 4000 ha each have been demarcated and privatized (Appendix 2). Only 35 of the satellite ranches with a stocking of 48,301 head of cattle and 7,182 head of goats and sheep are operational while 99 have not been developed so far. When fully developed and utilized, the combined capacity of NARCO and the satellite ranches is 183,700 cattle.

Table 2: Beef Cattle Productivity in the Traditional Sector and in Commercial NARCO Ranches

Parameter	Traditional Sector	Commercial NARCO Ranches	Expected standard
Area (ha)	23,376,200	609,164	-
Number of stock (2005) (million)	18.2	0.1	-
Av. Stocking rate (acres/LU)	<3	4-5	4 -5
Calving rate	40-50	55-73	80
Calving interval (months)	18-24	15-21	12
Pre-weaning mortality (%)	25-40	4.3	<5.0
Calf mortality (%)	>25	3.3	<10
Adult mortality (%)	8-10	1.3	<5
Mature weight	200-300	250-300	350-400
Annual off take rate (%)	8-10	12	15
Carcass weight (kg)	100-175	120-175	200-250
Age at slaughter (years)	6-7	2-3	2-3

Source: NARCO Reports and various sources

2.1.3 Productivity of Small Ruminants

About 30% of agricultural households in mainland Tanzania keep small ruminants, which contribute to household income needs and as savings and capital accumulation. The average flock size is 9 goats per goat keeping household and 7 sheep per sheep keeping household. Table 3 shows productivity of goats in the traditional sector. Their spatial distribution largely mirrors that of cattle as they are often herded together.

Table 3: Productivity of goats in the traditional sector

Parameter	Traditional Sector	Expected standard
Age at 1st oestrous (months)	> 20	8-12
Kidding percentage (%)	30-50	75-90
Twinning rate (%)	10-15	>70
Kidding interval	12-16	6-8
Growth rate (g/day)	20-40	70-100
Mortality rate	25-50	5-10
Age to reach slaughter weight (years)	4-5	1-2
Annual off take rate (%)	20 – 28	70-80
Carcass weight (kg)	<13	18-20
Carcass quality (%fat)	<5	8-11

Source: *Mtenga et al. (1990)*

2.1.4 Productivity of Poultry

Traditional chicken contribute over 70% of the poultry meat and eggs produced and consumed in the rural areas and 20% consumed in urban areas of mainland Tanzania. Commercial poultry production is concentrated in urban and peri-urban areas. Popular commercial breeds include White Leghorns, Rhode Island Red, Light Sussex and Plymouth Rock and some hybrids such as Hisex, Hybro and Shavers. The productivity of the local chicken remains low mainly due to diseases, poor quality feeds and feeding, inadequate technical and farmer support services and low genetic potential (Table 4). In the traditional sector various diseases may cause mortality of 80-100%. The introduction of I-2 vaccine against Newcastle disease (NCD) and improved housing and feeding through PADEP and DADPs programmes in some regions (e.g. Lindi and Mtwara) has reduced mortalities to 4%. More work is required to out-scale subsidized vaccination

programmes and adoption of improved husbandry practices such as improved housing and feeding in order to promote commercialization of traditional poultry keeping and improve incomes of poor households with special emphasis on women and youth.

Table 4: Performance of local and exotic chicken in Tanzania

Live weight of meat chicken at (Wks)	Local Chicken (g)	Local Chicken (g)	Exotic [b] (g)	Crosses Local x Meat type exotic (g)
4	62	-	-	
8	334	-	-	
10	-	549	1205	-
12	597	1229	1481	-
14	-	1378	2003	-
16	946	1397	2355	-
18	1652	1442	2795	-
Egg production				
Age at 1st egg laying (sexual maturity) (wks)	24-26[c]	-	17-19 [d]	-
Age at 50% production (wks)	-	-	20-22[d]	29.8
Egg production at 32 weeks (%)	-	42.5	35.5	69.3
Mean egg production (%)	-	16.8	26.1	35.3
Mean egg wt.	-	41.7 (33-66)	53.5 (47-64)	51.4
No. of eggs	118[e]	50-55	-	-

[a]Ali, K.O. 1995;[b] Katule, A.M, 1990; [c] Mbagga, S.H., 1993; [d]Kusolwa, PMK, 2002 (SUA Thesis and Dissertations) [e]French cited by Katule, 1990 (Note: – means data not given)

The modern poultry industry is served by 12 hatcheries located in Dar es Salaam (4), Coast region (4), Arusha (1), Kilimanjaro (2) and Iringa (2) (Appendix 3). Their total production capacity is 1.5 million eggs every three weeks. During 2009/10, 35.6 million chicks were produced in the country while 251,503 chicks and 6.03 million hatching eggs were imported. Total egg production increased from 2.23 billion eggs in 2006/07 to 2.9 billion in 2009/10, an increase of 30%.

2.1.5 Dairy Cattle Productivity

Milk production in Tanzania mainland comes predominantly from traditional cattle which account for 70% of the 1500 million metric tons of milk produced annually. An estimated 560,000 improved dairy herd produces about 471 million litres. The productivity coefficients are low, implying that much of the increase in milk production comes from expansion of the traditional herd and to some extent the improved dairy herd which is expanding rather slowly. Of particular concern are delayed first calving, low calving rates and associated long calving intervals both in traditional and improved dairy cattle herds (Table 5). While the government still retains some Livestock Multiplication Units (LMUs) at Sao Hill, Iringa, Ngerengere, Morogoro; Mabuki, Mwanza; Nangaramo, Mtwara and Kitulo dairy farm, the combined production of heifers from the six LMUs and nine NARCO Ranches between 2001 and 2009 was only 11,561 (average 1,445/annum). Production and distribution of heifers from LMUs, NARCO, NGO's and private sector has increased from 3,546 heifers in 2001 to 10,095 heifers per annum in 2009 compared to an estimated demand of about 58,944 heifers per annum.

Table 5: Dairy Cattle Productivity in the Traditional and Improved Dairy Herd

Parameter	Traditional Sector	Improved dairy cattle (Kitulo)	Small holder dairy (Tanga/Kagera[1])	Ideal standard
Calving rate (%)	30-50	55-73	40-50	80
Calving interval (months)	18-24	15-21	17-18	12
Age at first calving (months)	36-48	30-36	43-46	27-30
Pre-weaning mortality (%)	25-40	4.3	5-6	<5.0
Calf mortality (%)	>25	3.3	5-6	<10.0
Adult mortality (%)	8-10	1.3	<1.0	<5.0%
Mature weight	200-300	250-300		300 – 500
Lactation yield	160-250	2800-3500	1500-2000	2500-3500
Lactation length	200	300	270-300	305

[1]*Source: Smallholder Dairy Support Programme (2005)*

2.1.6 Productivity of dairy goats

There are about 40,000 dairy goats in Tanzania. The common breeds include Toggenburg, Saanen, Anglo-Nubian, Alpine and Norwegian. Dairy goats have become a tool for addressing nutrition insecurity and income poverty among the poorest of the poor who acquire them through goat- in- trust (GIT) schemes. The level of production varies from 180 to 200 litres per lactation. Currently the demand for dairy goats far exceeds the available supply. Dairy goat production is constrained by poor husbandry practices, diseases and inadequate breeding stock. Hence faster multiplication of available germ-plasm through cross breeding is required in tandem with efforts to reduce kid mortalities and improve husbandry practices.

2.1.7 Productivity of Pigs

More than 90% of the 1.9 million pigs in Tanzania are kept by small-scale peasant farmers. Performance of pigs is low due to poor husbandry practices, inbreeding, inadequate support services, diseases and lack of slaughter and marketing infrastructure among others. Table 6 shows typical performance parameters for subsistence and commercial piggeries in Tanzania.

Table 6: Productivity of Pigs

	Local/traditional piggery	Commercial piggery
Litter size (no.)	7	7-12
Average Birth weight (kg)	1.05	1.5- 2.0
Pre-weaning mortality	-	13
Weight at 180 days	10-14	40
Time to reach slaughter weight of 90 kg (days)	-	180-200
Mature body weight	45 -56	81-90

Source Lekule, 1990; 1991

2.1.8 Water Buffaloes and Camels

Water buffaloes and camels are among dairy animals, which produce milk. There are 188 water buffaloes and 93 camels in the country. They can complement cattle in milk supply for areas which cannot support dairy cattle. Major constraints include inadequate knowledge and skills among farmers and inbreeding.

2.1.9 Livestock Marketing and Marketing Infrastructure

Following the adoption of market oriented economic policies in the mid 1980s, the marketing of livestock and livestock products has become a private sector led activity. However, the government is obliged to provide support that will enable the private sector to operate efficiently and effectively. The marketing chain for ruminant stock (cattle, sheep and goats) involves primary, secondary and terminal livestock markets. The performance of these markets has been constrained by poor marketing infrastructure.

The main marketing infrastructures for livestock marketing include stock routes including night camps, holding grounds and dipping facilities. Both primary and secondary markets are equipped with auction rings, purchase pens and weigh bridges. About 300 primary markets are administered by the Local government Authorities (LGAs) and supply animals for local markets and for onward transfer to secondary and terminal markets located at Themi (Arusha), Weruweru (Moshi), Korogwe (Tanga), Lumecha (Songea) and Pugu (Dar es Salaam) which supply urban and export markets served by 10 border markets. The 4 terminal markets are administered by the Ministry of Livestock and Fisheries Development (MLFD). The Pugu market is by far the largest of the terminal markets and handles about 60% of total number of marketed animals (MoAC, 2000: Livestock Subsector Memorandum). There are in addition 13 holding grounds, 10 railway cattle loading ramps, 15 veterinary check points and several modern abattoirs (MLFD, 2008).

Transportation of animals between primary and secondary or terminal markets is done either by rail or by road transport. It costs 25,000 Tshs per head to transport cattle from Kagera/Shinyanga/Tabora cattle markets to Dodoma and 10,000 Tshs by road from Dodoma to Dar es Salaam, a total of 35,000 T.shs per head. Transportation of 10 tons of meat carcass from Dodoma abattoir to Dar es Salaam costs T.shs 1,600,000 (160shs/kg). Due to high transportation cost the landed value of meat from Tanzania in the United Arab Emirates is 3.8 US $ compared to US $ 2.4 for meat originating from Australia. This makes Tanzania meat less competitive in the export markets. Between 2006 and 2009 about 2,572,807 cattle, 2,073,613 goats and 369,625 sheep worth T.shs 767.1 billion were sold in local auction markets for the domestic market while 12,748 cattle and 12,182 goats worth T.Shs 8.0 billion and 645.5 tones of meat worth T.shs 2.0 billion were exported.

2.1.10 Livestock Products Processing and Value Addition

2.1.10.1 Meat

The livestock processing industry in the country is not well developed. There are 10 small and medium scale meat processing establishments located in Dar es Salaam, Iringa, Arusha, Coast, Rukwa, Morogoro and Ruvuma (Appendix 4). In addition, there are three functioning modern abattoirs located in Arusha, Sumbawanga and Dodoma. These facilities are not sufficient to supply quality meat to niche markets (supermarkets and tourist hotels) within and outside the country. Annual slaughter is about 1.5 million cattle, 2.5 million goats, and 550,000 sheep which together produce 330,149 tones of ruminant meat (MLFD, 2008).

Poultry processing is at its infant stage as most poultry are sold alive. There are four poultry processing plants in the country namely Mbarali NAFCO farm in Mbeya with capacity to process 1,500 chickens per day, Inter-chick Co. Ltd (Dar-es-Salaam) with capacity to process 3,000 chickens per day, Mkuza Chicks Limited (Coast) with capacity

to slaughter 16,000 chickens per day and Tanzania Pride Meat (Morogoro) with capacity to slaughter 1500 chickens per day. Total poultry meat production increased from 69,420 tones in 2005/06 to 80,910 tones in 2009/2010. Pig meat production stood at 38,180 tones in 2009/2010 compared to 29,925 tones in 2005/2006.

2.1.10.2 Milk

There are about 40 small scale and medium scale dairy plants out of 48 plants with a total processing capacity of 394,600 litres per day (Appendix 5). A survey done during 2009 showed that an average of 105,380 litres of milk/day was being processed. The amount of milk processed increased from 56,580 litres/day in 2006/2007 to 105,380 litres/day or a total of 38.5 million litres in 2009. There is a narrow product range which is concentrated on liquid and fermented milk while the demand for processed milk products is far from being satisfied. The demand supply gap for processed dairy products is filled by imports of about 15-20 million litres of liquid milk equivalent (LME) per annum worth about US $ 5 million.

2.1.10.3 Hides and Skins

There are 7 tanneries with installed capacity to process about 40 million sq. ft. of hides and skins per year (Appendix 6). During 2007/2008 the country produced 5.9 million pieces of hides and skins worth 13.5 billion Tshs. About 5 million pieces (84.7%) worth about 21.5 billion T.shs, were exported in 2008/2009, an increase of 32.7% compared to 2007/2008. This increase has been a result of implementation of a policy that discourages the export of raw hides and skins and the establishment of a Livestock Development Fund (LDF) whose main source of funds is a 20% levy, charged on exports since 2003/2004 and raised to 40% during 2007/08. The LDF has enabled implementation of a hides and skins improvement programme by 55 local government authorities in collaboration with the Tanzania Leather Association (TLA). About 80% of the hides and skins are exported raw while 20% exported in semi-processed form. More economic value can be added to the livestock industry if more of the hides and skins are processed into finished products for the domestic and export markets. Hides and skins improvement programme is being implemented in 65 district of 13 regions. Strategic interventions in this area such as establishment of a Hides and Skins Training Institute will be required to achieve this objective.

2.1.10.4 Other Livestock Byproducts

Other livestock products that are utilized and add value to the livestock industry include rumen contents, wool, blood, bones, horns, hooves, bristles, feathers, hair and fur. They are used for the manufacture of animal feeds, medicines and garments. Increased use of these by-products could reduce waste and environmental pollutions if they are better utilized than at the moment**.**

2.1.11 Livestock Products Supply and Consumption

While production trends (Table 7) show that except for eggs and milk, the supply of meat has tended to lag behind population increases of about 2.9%. The latest official statistics presented in Table 7 show that average per capita consumption for meat has almost remained at about 11 kg while that of milk increased from 26 litres in 2003 to 43 litres in 2009/2010. Consumption of eggs increased by nearly 20% in three years to 75 eggs per capita in 2009/2010.

While Tanzania is largely self sufficient in meat, trade statistics (FAO, 2005) show that in 2002 there was a net import of 0.04, 1.8, 0.51, 2.41 and 1.90% of beef, pork, poultry meat, milk and eggs respectively consumed in the country. Demand projections which take into account population increases, income changes of +1-3% per annum and demand elasticity of 0.8 for milk (SUA/MoAC/ILRI, 1998) and 1.0 for meat (MOAC, 2000) show that consumption of meat would go up by 60% between 1999 and 2010. If current level of livestock sector performance is not improved the gap between supply and demand is likely to increase especially for milk and milk products (SUA/MoAC/ILRI, 1998). Due to insufficiency in domestic supply of livestock products the importation of livestock products generally has been increasing except for beef and hatching eggs which were decreasing. Meat, milk and day old chicks imports has increased by 66.7%, 116.2% and 254.8%, respectively while the importation of hatching eggs has decreased by 87% for the same period. However, during 2009/2010, 0.2 million day old chicks, 6.03 million hatching eggs, and about 4,000 MT of milk were imported into the country.

Table 7: Production and Consumption of Livestock and Poultry Products from 2005 to 2009

	Unit	**2005**	**2006**	**2007**	**2008**	**2009**	**% Change over 2008**	**Average % annual increase (2005-2009)**
Human population in million	**Persons**	36.2	37.5	38.3	39.3	40	1.8	2.5
Product								
Meat								
Beef	Tons	210,370	180,629	218,976	225,178	243,943	8.3	4.6
Lamb	Tons	78,579	80,936	81,173	82,884	86,634	4.5	2.5
Pork	Tons	29,925	31,721	33,307	36,000	38,180	6.1	6.3
Chicken	Tons	69,420	77,280	77,250	78,168	80,916	3.5	4.0
Total	Tons	388,294	370,566	410,706	422,230	449,673	6.5	5.3
Per capita consumption	**Kgs per year**	**11**	**10**	**11**	**11**	**12**	9.1	
Milk								
Traditional cattle	Litres (000)	920,000	941,815	945,524	980,000	997,261	1.8	2.0
Dairy Cattle	Litres (000)	466,400	470,971	475,681	520,000	652,596	25.5	9.2
Total		**1,386,400**	**1,412,786**	**1,421,205**	**1,500,000**	**1,649,857**	10.0	4.5
Per capita consumption	litres per year	**38**	**40**	**41**	**42**	**43**	2.4	
Chicken eggs	Number (000)	2,145,000	2,230,900	2,690,000	2,806,350	2,917,875	4.0	8.2
Per capita consumption		**53**	**64**	**64**	**72**	**75**	4.2	9.4
Hides and skins								
Cattle	Number	1,660,000	1,980,000	2,500,000	1,650,000	1,500,000	-9.1	0.6
Goats	Number	1,400,000	1,520,000	1,900,000	2,700,000	2,400,000	-11.1	16.1
Sheep	Number	950,000	1,200,000	1,500,000	1,250,000	650,000	-48.0	-3.3
Total	Number	**4,010,000**	**4,700,000**	**5,900,000**	**5,600,000**	**4,550,000**	-18.8	4.7

Source: MLFD

2.1.12 Overall Assessment of Livestock Sector Performance

2.1.12.1 Livestock Sector Productivity

While the livestock sector grew by 4.2% in 2005, this level of growth is less than 50% of the 9.0% growth envisaged under NSRGP (2004). One of the key objectives of the NLP is to "*contribute towards national food security through increased production, processing and marketing of livestock products to meet national nutritional requirements"*. To what extent this objective has been attained is given by the latest available production figures.

The production of livestock products such as meat, milk, and eggs increased between the year 2000/01 and 2009/2010. Total meat production increased from 323,000 tones in 2000/2001 449,673 tones in 2009/2010, an increase 39.2%. During the same period, milk production has increased from 814 million to 1.64 billion litres, an increase of 102% while in the same period egg production increased from 600 million to 2.9 billion eggs.

The per capita consumption of meat, milk and eggs increased from 5.3 kg, 22 litres and 19 eggs in 2000/01 to 12kg, 43 litres and 75 eggs respectively in 2009/2010. That reflects an increase of 130%, 95.4% and 295% equivalent to an annual average growth rate of 11.9, 10.1 and 30.9% for meat, milk and eggs, respectively. These figures are not in tandem with reported overall growth rate of 2.4 - 4.2% cited above. This cast doubt on the accuracy of official estimates given for the sector. Nevertheless, these consumption levels are still lower than those recommended by FAO of 50 kgs of meat, 200 litres of milk and 300 eggs per capita needed for sustainable human growth and development. The data shows that, the current per capita consumption of meat, milk and eggs stands at 24%, 21.5% and 25%, respectively when compared to recommended levels by FAO. Therefore a lot of work remains to be done in order to improve the performance of the livestock sector so that it can supply livestock and livestock products to a level that meets recommended nutritional requirements of the population.

2.1.12.2 Status of Livestock Health in Tanzania

The livestock and livestock products require an efficient system that addresses compliance to WTO/OIE sanitary requirements. The quality of veterinary services in Tanzania meets these requirements. Measures on control and eradication of animal diseases have enabled the country to export to Middle East and neighbouring countries. Tanzania was declared Rinderpest free in 2005. However, challenges remain in creating disease free zones that would enable the country widen its exports of animal products to the SADC region, European markets and the Middle East.

3 CHALLENGES AND OPPORTUNITIES

3.1 Challenges

3.1.1 Land, Water and Pastures

The main cause of the problem of land tenure system, water and pasture resources is lack of proper arrangement to allocate land and give ownership of grazing areas according to traditional or legal procedures. Other causes are frequent changes of grazing areas into crop cultivation, game reserves and the migration of livestock farmers that limit them to develop the areas. Following the transfer of excess livestock from Ihefu Mbeya, to the Southern region of Lindi and the Coast region, demarcation of village land into crop and livestock areas has been done in all the 14 wards in Lindi region. Similar exercise covering 706,785 ha was planned to be carried out in Chamwino, Chunya, Kilwa, Kisarawe, Lindi Rural, Makete, Mbarali, Morogoro, Nachingwea and Rufiji districts during 2007/08 (MLD, 2007). However, challenges remain as to provision of water and communal ownership of grazing vis á vis stocking rates and land carrying capacity. These challenges need to be addressed.

3.1.2 Types of Livestock and Production Systems

Low genetic potential of the indigenous livestock coupled with limited supply of improved livestock has led to poor production and productivity of the livestock industry. This has also been exacerbated by existing extensive, low input-low output production systems practiced by the livestock farmers. Even though indigenous livestock are adapted to marginal areas, their potential has not been fully exploited due to a number of constraints. They include lack of understanding on the production characteristics of indigenous livestock breeds and their variants/strains under improved management. While extensive production system is ideal for cost effective production of beef, dairy; poultry and pig production require more intensive land use systems and are preferred in areas where land is scarce.

3.1.3 Livestock Diseases and Public Health

Livestock diseases are among the most serious constraints limiting development of the livestock industry. The high prevalence of livestock diseases in the country such as transboundary, vector borne, zoonoses and emerging diseases present a big challenge to the development of the livestock industry.

Inability to meet the stringent sanitary and phytosanitary conditions as stipulated by World Organization for Animal Health (OIE) and World Trade Organization (WTO) hampers international trade in livestock, livestock products and byproducts. Failure to set up disease free zones also contribute to low investment in commercial livestock production. Creation of disease free zones (DFZ) for export markets has been an elusive concept for over 30 years now.

Although 816 dips have been rehabilitated and 264 constructed between 2005 and 2009 and handed over to LGAs, only a very small fraction is being utilized countrywide. Yet close to 30-40% of calves die each year due to mainly preventable vector borne diseases (ECF and trypanosomosis). Where subsidized acaricides have been provided, there has been an increase in their use against ticks albeit through knapsack spraying rather than through the use of dips. The use of ECF immunization of cattle in the traditional sector to

control ECF has yielded positive results and need to be more widely applied. The non – use of regular dipping of cattle and shoats is a challenge that needs to be addressed urgently.

New castle disease (NCD) kills 80 -100% of affected flocks. Another priority area is the wider use of vaccination against NCD and other killer diseases which is critical to the commercialization of the traditional poultry which have gained popularity in recent years. The positive results which have been recorded on reduction of mortality rates through vaccination of local chicken against Newcastle disease with thermastable I-2 vaccine (I-2) combined with improved housing and feeding of local chicken under the PADEP and DADPs in various LGAs in the country has shown that it is possible to increase off-take of poultry meat and eggs from the traditional flock to commercial levels. This has a potentially huge impact on poverty alleviation. Outscaling of these success stories should become an integral part of the LSDS.

Zoonotic diseases such as TB, Brucellosis, Rift Valley fever, Rabies, Porcine Cystecercosis, Avian influenza remain a threat to human population. Inadequate and unhygienic slaughter facilities are a problem encountered in most municipalities and towns throughout the country and pose yet another threat to human health. Concerted efforts are required to address them.

3.1.4 Livestock Products Processing and Marketing

There is little value addition in the livestock value chains characterized by lack of grading of livestock and livestock products, lack of fattening of animals to improve quality prior to marketing, inadequate infrastructure for processing and poor handling, presentation and packaging of most livestock products. Also processing costs are high, high cost of packaging materials, inadequate quality control and generally inadequate knowledge and skills among actors in the livestock value chains. The challenge therefore is how to improve value addition in the livestock value chains at affordable cost. On the other hand, livestock and livestock products marketing and trade face several constraints and challenges including:

(i) Poor market infrastructure for livestock and livestock products;
(ii) Poor and costly transportation system for livestock and livestock products;
(iii) Poor or little knowledge (inadequate information) of the markets (domestic and export) for livestock and livestock products;
(iv) Weak livestock producers organizations, which limit the exploitation of economies of scale in marketing of livestock and livestock products, leading to high transaction costs, wastage and inefficiencies;
(v) Weak linkages or coordination among actors in the livestock value chains;
(vi) Inadequate entrepreneurship and business skills including negotiation skills especially among smallholder resource poor livestock producers;
(vii) Competition from other livestock exporting countries for existing and new markets for livestock and livestock products;
(viii) Compliance with livestock trade regulations and international code;
(ix) Overcoming barriers to trade especially non-tariff barriers including bans on import of live animals and products of animal origin;
(x) Competition from subsidized livestock products imported from outside the country that discourage investments;
(xi) Low local demand for livestock products and lack of awareness on the nutritional value and role of foods of animal origin in food and nutrition security.

3.1.5 Livestock Services and Capacity Building

Livestock services include training, research, extension, information and regulatory services. Inadequate livestock farmers' knowledge and skills is one of the limiting factors to the development of the livestock industry. Important knowledge and skills that is inadequate among smallholder livestock farmers include but not limited to technical skills, business and entrepreneurial skills, marketing skills and negotiation skills. Extension staff are better placed to impart such skills but they are few and they are themselves deficient in some of these skills especially business and entrepreneurial skills. Inadequate knowledge and skills in business and entrepreneurship emanate from weaknesses of curricula in training institutions like the Livestock Training Institutes (LITIs). Apart from weaknesses in curricula, the livestock training institutes are constrained by inadequate infrastructure and training facilities and expertise in terms of numbers and their knowledge and skills. Some experts need retooling to up-date their knowledge and skills following global changes taking place.

Livestock research is constrained by several factors including the following:

(i) The long gestation period for livestock compared to crops necessitates high long term investment costs in livestock research which have been difficult to cover from the government budget;
(ii) Inadequate infrastructure and facilities for research especially research that require expensive facilities;
(iii) Inadequate expertise to conduct research in important areas such as animal breeding and biotechnology;
(iv) Little emphasis on demand driven applied livestock research;
(v) Poor coordination of the National Agricultural Research System (NARS) institutions;
(vi) Inadequate public (government) funding for research.

Livestock extension services are generally poor due to insufficient expertise especially at the district, ward, and village levels; inadequate infrastructure and facilities; weak private-public sector partnership in providing livestock extension services and weak livestock research-extension-farmer linkages.

Livestock information is important in facilitating planning, monitoring, coordination and making livestock development decisions. However, data and information on livestock is inadequate and unreliable as it varies from one source to another. The establishment of a centralized and reliable database is constrained by inadequate infrastructure and facilities, insufficient expertise and inadequate financial support.

3.1.6 Investments in Livestock development and Finance

Inadequate finance and low level of private investments are critical weaknesses in the livestock sector. The banking and financial system currently provides inadequate support to livestock production, processing and trade on livestock and livestock products. Apart from problems of collateral for individual livestock producers, processors and traders, loan repayment conditions including high interest rates are prohibitive. Unavailability of credit facilities to large, medium and small-scale livestock entrepreneurs and low capital investments limit the expansion and commercialization of the industry.

3.1.7 Governance, Regulatory and Institutional Framework

The creation of Ministry that is specifically responsible for livestock industry development has demonstrated the Government's resolve to give the livestock industry the priority it deserves in contributing to poverty alleviation and the national economy at large. There are however, still a number of structural, regulatory and institutional gaps that need to be addressed. Laws and regulations are many and some are outdated and need to be rationalized and harmonized or updated. These include the Compulsory Dipping Act, Tsetse Fly Control Act, etc. While a number of new legislations have been enacted in the last few years (the Dairy Industry Act no 8, 2004; the Veterinary Act, No 16, 2003; the Meat Industry Act, No. 6 of 2006, The Grazing-land and Animal Feed Resources Act, 2010; and The Livestock Identification, Registration and Traceability Act, 2010) some of the regulatory institutions (e.g. the Dairy Board, Meat Board) are not yet fully operational. The role of Central Government and its various institutions and employees, Local government authorities and the private sectors in the implementation of the livestock sector needs to be more clearly defined. Services that are public goods need to be clearly discerned from private sector service delivery and adequately supported by the government. Public-Private sector Partnerships need to be rolled out in key strategic interventions such as control of transboundary diseases, zoonoses, animal genetic resources improvement and conservation.

Regulatory frameworks for monitoring various practices are fraught of problems as described below:

- Weak and in some cases contradictory regulatory framework for setting standards and grades (e.g. the TFDA Act and the Animal Diseases Act regarding Slaughter facilities and meat inspection);
- Weak mechanisms for enforcement of laws and regulation at the National and Local government level;
- Outdated legislations;
- Inadequate capacity of regulatory institutions;
- Poor regulation of livestock and livestock products markets and imports of livestock products;

3.1.8 Cross-Cutting and Cross-Sectoral Issues

Livestock development in Tanzania is influenced by several factors that are outside the jurisdiction of the Ministry of Livestock and Fisheries Development. There are cross-cutting and cross-sectoral issues which need to be mainstreamed in livestock development plans. These issues include land tenure, environment, gender and Human Immune-deficiency Virus and Acquired Immunodeficiency Syndrome (HIV and AIDS).

Problems of land tenure lead to low land productivity because of little incentive to invest on land development for livestock production. Land tenure is constrained by low priority accorded to allocation of land for livestock production, inadequate technical expertise in land surveying, low awareness amongst stakeholders on the importance of legal ownership of land and lengthy and cumbersome procedures of acquisition of title deeds.

Overgrazing and uncontrolled movements of large numbers of livestock in rangelands threatens sustainable livestock development which requires proper utilization and

management of the environment. Proper management of the rangelands and pastures is constrained by inadequate land use planning for livestock production, low awareness among livestock keepers, inadequate expertise and weak inter-sectoral coordination.

Gender inequalities exist in most livestock value chains. While women are important actors at the various stages of the livestock value chains (production, processing and marketing), their access to resources and role in decision process is largely limited by social and cultural factors.

HIV and AIDS are considered to be a big threat in many livestock keeping communities due to some traditions and cultural factors that contribute to spread of HIV and AIDS. Livestock and livestock products traders and transporters are potentially at high risk of acquiring HIV and AIDS if they are not adequately sensitized due to the nature of their activities, which necessitate movements over long distances away from home. Efforts to combat HIV and AIDS in the livestock sector are constrained by the social economic and cultural factors, low awareness amongst livestock keepers, livestock traders and other stakeholders, inadequate health infrastructure and facilities and inadequate expertise.
These cross-cutting and cross sectoral issues impact on the livestock sector and need to be addressed in a holistic manner.

3.2 Opportunities

Globalization, regional integration and changes in the national economy offer opportunities for rural and urban development by providing markets for live animals and animal products. However, the exploitation of these markets will depend on the wise use of the available opportunities and access to livestock information resource base and technology to increase production and productivity. These opportunities once properly exploited will greatly improve livestock contribution to the economy. They are:-

(i) A large and diverse herd of indigenous livestock, which once exploited can significantly contribute to the national GDP;
(ii) Rangeland resource base estimated at 50 million hectares which are able to support up to 20 million livestock units;
(iii) Abundant water resource consisting of major rivers, lakes, and underground water;
(iv) Diverse and favourable climate and agro-ecological zones, which can support a wide range of livestock species and activities including free ranging;
(v) Readily available domestic market for livestock and livestock products due to high population growth, increased urbanization and high economic growth all of which stimulate higher demands for animal products;
(vi) Excellent geographical location, which makes the country accessible to potential export markets;
(vii) Availability of trainable human resource and low cost labour;
(viii) Existence of a wide range of valuable Indigenous technical knowledge (ITK) related to livestock production;
(ix) Legislation on land ownership, registration, and rights enacted in 1999 as Land Act No.4 and the Village Land Act No.5;
(x) Responsiveness of the Private Sector participation in livestock development;
(xi) There are well-defined macro policies, plans, programmes and strategies which favour livestock development;
(xii) Political and social stability.

4. THE LIVESTOCK SECTOR DEVELOPMENT STRATEGY

4.1 The Goal of LSDS

The overall goal of LSDS is to contribute to overall GDP growth, national and household incomes and growth in export earnings. The strategy will facilitate achievement of objectives of TDV 2025, ASDS and NSGRP as related to poverty reduction. The NSGRP and ASDS seek to improve the quality of livelihoods for all Tanzanians through various programmes including the Agricultural Sector Development Programme (ASDP) of 2006. Although poverty remains wide spread in Tanzania with about 50% of the population living below the poverty line, it has declined slightly over the last 10 – 15 years. From 1991/92 to 2000/01 food poverty declined from 22% to 19% while basic needs poverty declined from 36% to 30%. Reduction of poverty by half by 2015 will require annual GDP growth of at least 6-7%. Since the sale of food and cash crops accounts for about 70% of rural incomes, much of the poverty reduction efforts must be directed at improving the performance of the agricultural sector. The World Bank (cited by IFPRI, 2007) estimates that every 10% increase in crop yields, leads to a 9% decrease in the percentage of people living on less than US $ 1 per day. Hence in order for agriculture to make a significant impact on poverty reduction the NSGRP envisages a growth rate of about 9% for the livestock sub-sector while ASDS prescribes a 5% growth. Mixed farming systems in which livestock keeping plays an important part of household livelihoods have been shown to be more resilient in the event of food insecurity occasioned by drought and generally contributes significantly to income poverty reduction, organic farming and environmental sustainability.

Various institutional arrangements developed under ASDP especially the participatory elaboration of District Development plans (DADPs) by the local government authorities (LGAs) and lessons learnt so far from implementation of ASDP and decentralisation by devolution (D by D) will be key for the successful implementation of the LSDS. The LSDS will therefore be implemented within the broader framework of the NSGRP popularly known as MKUKUTA and act as a specific stimulus for the socio-economic wellbeing of all livestock keeping households in the country.

The formulation of the LSDS is based on the Vision, Mission and Objectives of the NLP. The Vision is based on the TDV 2025 which states that:

"*By the year 2025, there should be a livestock sector, which to a large extent shall be commercially run, modern and sustainable, using improved and highly productive livestock to ensure food security, improved income for the household and the nation while conserving the environment."*

The mission is: *"To ensure that livestock resource is developed and managed sustainably for economic growth and improved livelihoods"*.

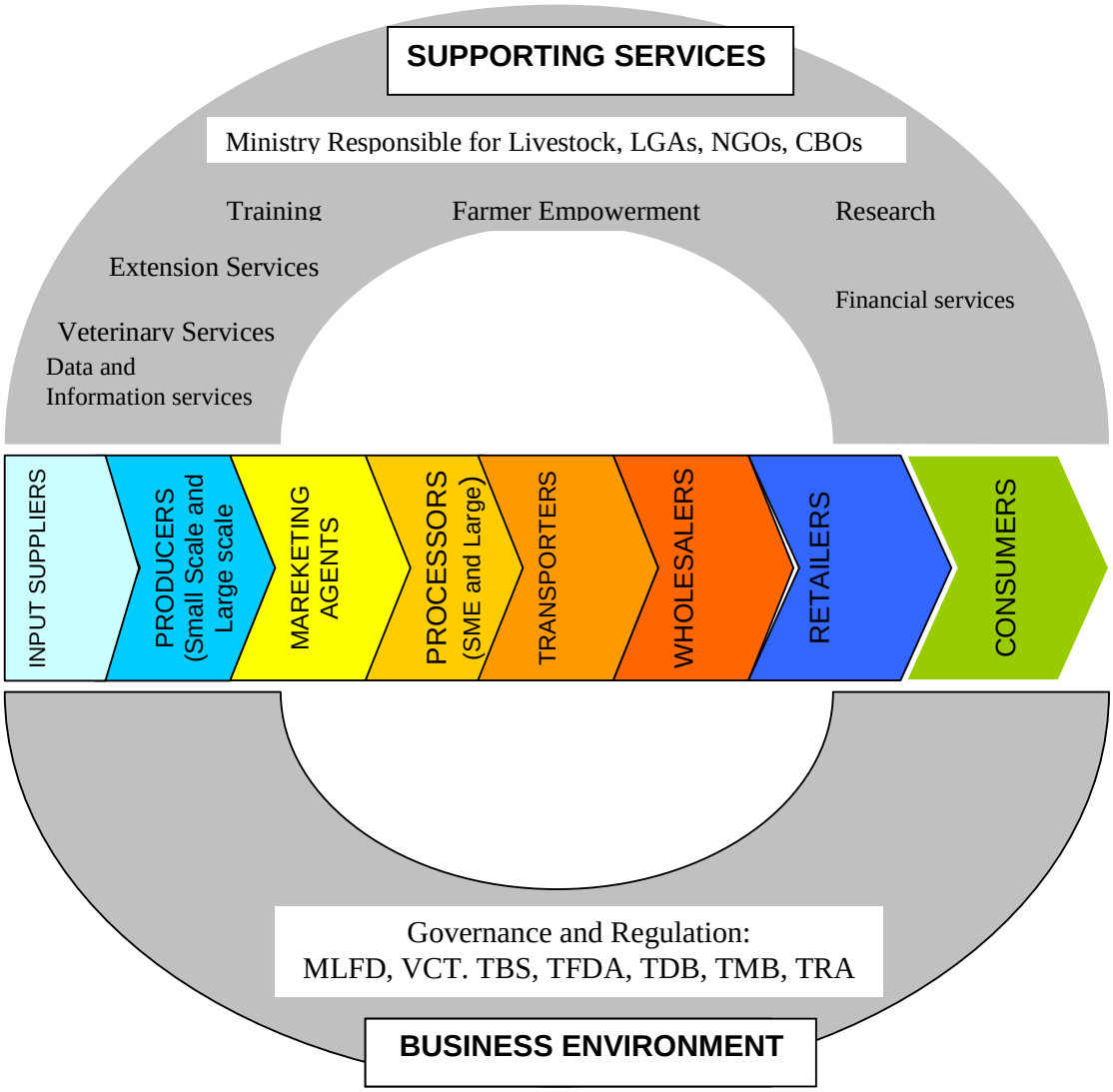
4.2 Objectives of the LSDS

The overall objective of the LSDS is to develop a competitive and more efficient livestock industry that contributes to the improvement of the livelihoods of all livestock keepers and the national economy.

The specific objectives of the LSDS as defined under the NLP shall be to:

(i) Contribute towards national food security through increased production, processing and marketing of livestock products to meet national nutritional requirements;
(ii) Improve living standards of the people engaged in the livestock industry through increased income generation from livestock;
(iii) Increase the quantity and quality of livestock and livestock products as raw materials for local industry and for export;
(iv) Promote integrated and sustainable use and management of natural resources related to livestock production in order to achieve environmental sustainability;
(v) Promote production of safe and quality foods of animal origin in order to safeguard health of consumers;

The objectives of the LSDS stated above will be achieved by developing a coherent, holistic and integrated strategy for the livestock industry in order to implement the NLP as well as defining the roles and responsibilities of all stakeholders and facilitating coordination, monitoring and evaluation of the livestock sector development interventions. The LSDS is a framework for further coordinated initiatives in the sector. The choice of the items in the strategy has inevitably been influenced by the issues raised in the NLP. The strategic framework is designed to accommodate the existing situation with the private sector as the principal actor whilst also considering coordination with the local government and public sector roles as elaborated in the NLP. The strategy is comprehensive in the context of the whole country's ecosystem but has sufficient flexibility to be able to capitalize on zonal preferences and comparative advantages. The LSDS recognizes the importance of the various livestock production systems in the country. It is the strategic objective of the LSDS to utilize available opportunities including the transformation of traditional role of livestock in various communities and associated indigenous knowledge into commercial practices in an environmentally sustainable manner. Whereas increasing productivity of the livestock in the various production systems is generally seen as an important issue to be addressed because of the low productivity currently experienced, other livestock development and related matters need to be addressed in a holistic framework taking advantage of the synergy of public and private sector roles as espoused in the NLP. The strategy takes a value chain approach in addressing the roles of various role players in production, processing, marketing and consumption along with their external environment and boundary partners as depicted below:



The issues to be addressed or targeted are grouped into six strategic intervention areas as follows:

(i) Sustainable use of land, water, pastures and rangelands;
(ii) Public/Private sector investments and financing for improvement of livestock value chain productivity and efficiency (production, marketing and processing);
(iii) Control of livestock diseases and public health;
(iv) Livestock Development Services (Research, training, information, extension services, capacity building, farmer empowerment and related infrastructure);
(v) Governance, regulatory and institutional arrangements;
(vi) Cross cutting and Cross-Sectoral Issues.

These strategic intervention areas are interdependent and implementation of the strategy should address all of them if it is to be effective. At the local government and community

level, the LSDS encourage a participatory community development approach. In this manner District Councils or Local Government Authorities (LGAs) and communities will be assisted in their ability to plan and implement appropriate interventions to address locally perceived constraints in the livestock sector. The private sector participation in production, value addition, animal health delivery systems and marketing of livestock and livestock products will be emphasized. Where necessary, training and other forms of assistance will be provided to enhance capabilities.

4.3 STRATEGIC AREAS FOR LIVESTOCK DEVELOPMENT

4.3.1 Strategic Intervention Area 1: Sustainable Use of Land, Water, Pastures and Rangelands

Land, water and rangelands are the main resources which support this vast system of livestock production. Only 40% of the rangelands is currently available for livestock grazing, the rest is inaccessible due to tsetse fly infestation or lack of adequate water resources. The continued shrinking of land for grazing due to population pressure and conversion of traditional grazing areas to other land uses greatly constrains the sustainability of extensive livestock production system. Moreover, a conflict between crop farmers and migrant livestock keepers in search of water and pastures has been a persistent problem in many regions and districts in the country.

In order to overcome these problems and increase the productivity of the extensive production system, the management of rangelands will be improved through the following strategies and interventions:

4.3.1.1 Provision of Demarcated Land for Livestock Production

Land resource planning, and utilization is important in control and allocation of the land resource. The following are strategies required to sustain land use and reduce conflicts among land resource users:

Strategic interventions:

(i) Finalise the Livestock Grazing-land and Feed Resources Legislation;
(ii) Establish co-ordination mechanisms for land use planning between different Ministries at the National and Local Government levels;
(iii) Build capacity of LGAs and sectoral ministries (MLHS, MAFS, MLFD) to undertake land use and resource management planning;
(iv) Facilitate preparation of management plans for areas set aside and gazetted for livestock use;
(v) Strengthen capacity of LGA to undertake land surveys, demarcate and streamline allocation of land to be used by pastoralists, agro-pastoralists at affordable cost;
(vi) Build the capacity of LGAs in identifying and allocating land to promote peri-urban livestock farming;
(vii) Initiate participatory land use planning at village level in all Districts;
(viii) Build the capacity and empower livestock communities to acquire and manage grazing-land;

4.3.1.2. Tenure for Land Earmarked for Livestock Farmers

Demarcation of land for livestock use alone is not an adequate incentive for land development. Strategies to address land tenure problems are needed.

Strategic interventions:

(i) Sensitise livestock stakeholders and other land users to the Land Act and Village Land Act of 1999 and Land use Act no 6, 2007;
(ii) Enable villages to implement the Village Land Act. 5 of 1999 and Land use Act No. 6, 2007;
(iii) Provide lease or title deeds to livestock farmers with land which has been surveyed and allocated to them.

4.31.3. Control of Incursion into Grazingland by Pastoralists from Neighbouring Countries

Strategic interventions:

(i) Enforce existing laws regarding livestock entering the country without permits;
(ii) Build, equip and operationalise border posts manned by law enforcers to check cross boarder livestock movement;
(iii) Strengthen immigration department at the boarders to curb incursion by pastoralists from neighbouring countries;
(iv) Establish and operationalise the National Livestock Identification and traceability system.

4.3.1.4 Provision of Adequate Water for Livestock

The seasonal and geographical variation in the availability of pastures and water for livestock determines to a large extent the level of production that can be achieved. Livestock in pastoral and agropastoral systems often migrate in search of pastures and water. Strategies are needed to improve water availability so as to reduce migration of livestock is search of water.

Strategic interventions:

(i) Identify the infrastructure needs of pastoralists and agro-pastoralists (water dams, dips, livestock markets);
(ii) Construct and maintain charcoal dams, bore holes, shallow wells and water troughs to provide water for livestock;
(iii) Establish rainwater harvesting schemes to improve water availability for livestock during dry season;
(iv) Develop guidelines for cost sharing and use of rehabilitated/developed livestock infrastructure;
(v) Sensitise livestock keepers to contribute towards the cost of rehabilitation of dams, water wells, conservation of watershed and water catchment areas;
(vi) Establish and enforce by-laws for the conservation of water catchment areas in all villages and LGAs;
(vii) Develop and institutionalise a system for early warning of droughts and floods and impending water shortages for livestock.

4.3.1.5 Sustainable Use of Pasture and Rangelands

(i) Carry out an inventory of available grazing land and update the carrying capacity of various rangelands and devise guidelines for their use;

(ii) Promote and support pastoral and agro-pastoral farmers organizations;
(iii) Promote production and utilization of improved pastures;
(iv) Promote establishment of pasture seed farms including irrigated pasture seed;
(v) Promote forage conservation in the form of hay, silage;
(vi) Conduct environmental impact assessment before animals are moved form area to another.

4.3.2 Strategic Intervention Area 2: Public/Private Sector Investments and Financing for Improvement of Livestock Value Chain Productivity and Efficiency (Production, Marketing and Processing)

Commercialisation of the livestock sector will require mainly private sector investments while the Government in accordance with NLP, will provide a supportive role of creating a service and regulatory environment conducive for effective and competitive private sector participation in production, processing and marketing of livestock and livestock products locally, regionally and globally. Government will make investments in key strategic areas of public goods nature.

4.3.2.1 Investment and Financing Livestock Development

Livestock production, processing and marketing in the country is constrained by inappropriate funding mechanisms and inadequate financing. According to the available data, public sector investment in livestock sector does not reflect the sector's contribution to GDP. Also, private commercial investments in the livestock sector are low compared to other sectors in the economy. Where credit is available, it is on short-term basis with high interest rate. The challenge is to avail public finance and long term affordable credit to the livestock sector that will increase accessibility to financial resources for investment in the livestock sector.

Strategic interventions:

(i) Provide conducive environment (taxes, regulations) for private sector investment in the Livestock industry;
(ii) Provide government guarantee facility so that private commercial banks can give loans to farmers;
(iii) Use leasing Act, 2008 to promote investment in the industry through leasing with special emphasis on enabling privatised and new commercial dairy farms ranches, meat factories and tanneries operate to capacity and competitively;
(iv) Secure funding through government borrowing from international lending banks such as the African Development Bank to fund a comprehensive Livestock Sector Development Programme in key priority areas at national and district level in line with decentralisation by devolution policy;
(v) Support establishment of national investment bank to provide long-term loans for investments in livestock at affordable terms;
(vi) Promote and support establishment of grass-root savings and credit associations for livestock stakeholders;
(vii) Facilitate establishment of linkage between micro-finance institutions and national investment bank;
(viii) Establish linkage between grass-root livestock stakeholders groups and micro-finance institutions;

(ix) Promote provision of credit in kind in the form of inputs for livestock development and livestock in-trust schemes (Heifer in Trust, Goat in- trust schemes) in collaboration with established NGOs and farmers organisations;
(x) Promote establishment of livestock insurance schemes and use of insured livestock as collateral;
(xi) Promote investment in and use of livestock farm machinery and equipment;
(xii) Promote investment in and use of improved livestock breeds and husbandry practices that reduce risk of loss of animals due to diseases, predators, adverse weather etc.

4.3.2 2. Improving Livestock Production and Productivity

The low production and reproductive performance of indigenous and improved breeds of beef cattle, dairy cattle, sheep and goats for meat, dairy goats, poultry, pigs, water buffaloes, camels, non conventional livestock for meat (e.g. guinea fowls, ducks, turkeys, rabbits) can be improved through various measures including adopting appropriate breeding programmes; recording and selection on basis of performance; disease control; better feeding and optimal use of available feed resources. The following strategic interventions will be undertaken in order to achieve the broader objectives of improving livestock productivity per unit of livestock, land and labour.

(i) Develop and adopt a national livestock breeding policy;
(ii) Promote inventorisation, characterization, evaluation and selection of all types of conventional and non-conventional livestock species for increased productivity and conservation;
(iii) Strengthen existing Livestock Multiplication Units (LMUs) for beef cattle, dairy cattle, water buffaloes and establish new ones for camel, dairy goats so that they become centres for technology transfer and source of quality germplasm benefiting neighbouring smallholder farmers;
(iv) Establish human resource requirements for AI services in each district and launch training programme to meet the manpower needs for effective AI field services delivery system;
(v) Promote establishment of Livestock multiplications units for dairy goats, sheep, water-buffaloes and came;
(vi) Encourage establishment of quality poultry breeding farms and hatchery facilities by the private sector;
(vii) Promote establishment of pig breeding farms;
(viii) Strengthen the National Artificial Insemination Centre (NAIC) and establish additional small scale liquid Nitrogen plants and AI sub-centres in the Eastern, Southern, Southern Highlands and Central Zones;
(ix) Develop guidelines and incentives facilitating importation of superior germplasm (semen, breeding animals);
(x) Build and strengthen the capacity of LGAs and private service providers to deliver AI field services (insemination, pregnancy diagnosis);
(xi) Develop incentives including subsidizing the cost of delivery of AI filed services in rural areas by the private sector;
(xii) Promote application of modern techniques for genetic improvement such as MOET (embryo transfer technique);
(xiii) Encourage the formation of breeders societies for Beef cattle, Dairy cattle, dairy Goats, pigs and poultry;
(xiv) Initiate a national recording and selection scheme through breeders societies for beef cattle, dairy cattle and dairy goats, pigs and poultry;

(xv) Promote production of quality animal feeds and utilization of locally available raw materials and feed additives by the private sector;
(xvi) Promote zero grazing and other environmentally friendly husbandry practices for smallholder dairy cattle and dairy goat farmers;
(xvii) Train and sensitise farmers in extensive production systems on the use of proper stocking rates according to land carrying capacity;
(xviii) Encourage farmers to adopt the feedlot systems for fattening beef cattle and other meat animals of appropriate age before slaughter;
(xix) Promote animal welfare compliance;
(xx) Promote the use of appropriate technologies such as draft animal power, solar energy and wind power in the livestock industry and in the protection of the environment from the adverse effects of dependency on non renewable energy sources;
(xxi) Promote investment in and use of livestock farm machinery and equipment;

4.3.2.3 Improving Livestock and Livestock Products Processing and Marketing

In order to meet the Government and other stakeholders' Vision of a commercially run and sustainable livestock industry, a change from subsistence pastoral and agro-pastoral livestock husbandry practices to market oriented small, medium and large scale livestock production methods are required. To ensure sustainability, farmers producing for the market must satisfy consumer demand for quantity, quality and safety of livestock and livestock products. In line with the NLP, the private sector is expected to play a major role in improving commercial processing, marketing and promotion of consumption of meat and meat products, milk and milk products and eggs which meet the quality and safety demands of consumers in conventional and niche markets and for export. In order to meet this objective the government in collaboration with various stakeholders will adopt the following strategic interventions:

a) Strengthen grass root livestock producers and other stakeholders' organizations to improve efficiency of agricultural marketing and lower transaction costs,

Smallholder livestock producers are poorly organized, which result in low bargaining power, limiting their sales prices, and high transaction costs that limit profitability for both producers and buyers. There is need to strengthen existing organization and form new ones where they are absent to increase efficiency and lower transactions costs associated with small volumes of products marketed by individual producers.

Strategic interventions:

(i) Provide support to national level livestock associations (Tanzania Milk Producers Association (TAPRODA), Tanzania Milk Processors Association (TAMPA)) for establishing and strengthening associations of different livestock chains actors (producer groups, traders groups, processors groups) at village and district levels;
(ii) Promote the establishment of meat and dairy processors and consumers associations at district and national levels;
(iii) Support training of groups/associations on organization and management skills;
(iv) Facilitate development of marketing models of livestock products for smallholders' livestock producers groups.

b) Value addition/processing to improve shelf life of livestock products and meet requirements of livestock markets.

There is generally low value addition/poor processing techniques among smallholder livestock producers that result into livestock products that do not meet market requirements including quality of cassava products. There is need to support value addition/processing to extend shelf life and meet buyers requirements.

Strategic interventions:

(i) Support private sector investments in manufacture of processing equipment and production of packaging materials for various livestock products;
(ii) Provide a favourable regulatory and administrative environment for private sector investments in meat, milk, hides and skins, other livestock products (i.e. eggs) and by-products processing and marketing;
(iii) Promote fattening of animals prior to sale to increase value;
(iv) Promote grading of animals sold in primary and secondary livestock markets;
(v) Design and promote establishment of standard abattoirs for cattle, sheep and goats and separate modern slaughtering facilities for pigs, poultry for rural areas, district centres;
(vi) Promote small scale processing especially in rural areas where there are no large scale processors to link farmers to markets.

c) Link smallholder livestock producers and improvement their access to markets for livestock products

Smallholder livestock producers have inadequate information markets for their products and are poorly linked and have poor access to these markets. Interventions are required to link them to various downstream stakeholders and improve their access to livestock markets.

Strategic interventions:

(i) Facilitate establishment of contractual business linkages between livestock producers/processors groups with buyers of livestock and livestock products;
(ii) Support training of livestock producers groups/associations on group marketing, business skills and product handling (packaging, labeling);
(iii) Rehabilitate livestock holding grounds, watering points, stock routes and livestock markets, slaughter slabs and abattoirs;
(iv) Promote establishment of milk collection and cooling centres in rural areas.

d) Ensure quality of livestock to meet standards of niche export markets

Despite the large livestock population, Tanzania exports of livestock products are marginal due to its inability to meet stringent quality standards of export markets. The following are interventions required to improve exports of livestock and livestock products:

- Establish livestock disease free zones to promote export of livestock and livestock products;
- Develop and support implementation of livestock identification, registration and traceability system;
- Formulate and enact legislation to provide for livestock identification and traceability;
- Establish a national livestock registry and traceability data bank;

- Establish and strengthen quality and food safety inspectorate services for meat, milk and hides and skins.

e) Promote local consumption of livestock products

There is generally low local demand for livestock products in the country. Consumption levels for almost all livestock products are far below the levels recommended by FAO. The following are interventions required to promote domestic consumption of locally produced livestock products:

- Carry out regular consumer promotion and sensitization campaigns for dairy, meat and eggs;
- Regulate the importation of meat and meat products, milk and milk products, eggs and other livestock products;
- Establish school milk feeding programmes to expand market for locally produced milk.

4.3.3 Strategic Intervention Area 3: Control of Livestock Diseases and Public Health

Livestock sector in Tanzania is constrained by a number of livestock diseases which include those affecting the human population and shared with wildlife populations. The capacity to handle epidemic and endemic infectious and non infectious diseases hinges on strength of the veterinary services. The control of trans-boundary animal diseases (TADs) and diseases of economic importance and zoonotic diseases is the prime responsibility of Ministry of livestock development. The ability to monitor and conduct surveillance of the health and productivity of the animal populations and monitor the health related attributes of animal products and veterinary biologics can be feasible if veterinary services are enabled by sound policy and strategies.

Tanzania stands the risk of introduction of exotic and emerging diseases that are of serious economic importance and may also affect human health such as Rift Valley Fever (RVF), Highly Pathogenic Avian Influenza, Peste Petis Ruminantes (PPR), Marbugh fevers (Ebola), etc. Zoosanitary inspectorate services are necessary in preventing the introduction and spread of diseases through movement of animals and animal products. The veterinary laboratory system comprises national laboratory and zonal laboratories that are strategically located to provide technical support for disease surveillance, diagnosis, quality control and supervision of field vaccination campaigns. A sound and strong veterinary public health and food safety (VPHFS) is required to deal with monitoring and control of zoonotic diseases and quality of animal products with a view to safeguard human health.

4.3.3.1 Improve Control of Livestock Diseases and Safe Guard Public Health

The NLP has put emphasis on a number of areas including; Animal Health Services Delivery which aim at controlling, eradicating and prevention of animal diseases. Control of Trans-boundary Animal Diseases (TADs) and diseases of economic importance and zoonotic diseases is narrated as a responsibility of the Government, whereas, the control of non-TADs is a responsibility of the private sector and other stakeholders. In realizing impact of animal diseases on livestock productivity and human health, strategies are needed to address them.

Strategic interventions:

(i) Make control of transboundary animal diseases be a public good and government should contribute its resources for its control;
(ii) Establish mechanisms for joint engagement of the ministry responsible for livestock and that responsible for health in the control of zoonotic diseases;
(iii) Establish mechanisms for public and private sectors to share responsibility of controlling non- transboundary infectious diseases;
(iv) Establish technical advisory committees to deal with outbreaks of diseases of major economic impact and public health concern;
(v) Establish mechanism for subsidizing activities for control of tick and tick borne diseases;
(vi) Enhance the capacity of the veterinary laboratory system to conduct surveillance in the country;
(vii) Enable livestock research institutions to investigate the role of Indigenous Technical Knowledge (ITK) in ethno-veterinary medicine;
(viii) Make available vaccines for major epizootic diseases throughout the country in times of outbreaks;
(ix) Ensure Effective control of other ectoparasite;
(x) Establish Control system for Helminths and helmithosis;
(xi) Implement eradication of Tsetse and Trypanosomosis according to Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC);
(xii) Establish a disease early warning system and emergence preparedness unit to deal with epizootics of diseases of major economic and public health importance;
(xiii) Harmonize national and international policies on transboundary animal disease control and eradication;
(xiv) Develop and enforce guidelines and code of conduct for public, semi private and private veterinary services practitioners and paravets;
(xv) Develop and enforce guidelines for veterinary information and diseases outbreak reporting systems including obligations of private practitioners from village to national levels via VICs and DLDO offices throughout the country.

4.3.3 2 Mandatory Vaccination Programmes

Vaccination is one of the major means of control of infectious animal diseases. Lack of vaccination programmes does not only lead to spread of many epizootic diseases across the country, but has also led to high costs of control of such diseases. Strategic interventions are required to address the vaccination problems:

Strategic interventions:

(i) Put in place mandatory annual vaccination programmes for diseases of economic importance and those affecting human health;
(ii) Establish LGA by-laws to govern mandatory annual vaccinations;
(iii) Enable regulatory authorities responsible for inspection of veterinary drugs to carry out regular inspection of veterinary drugs in all LGAs.

4.3.3.3 Provision of Affordable and Quality Veterinary Drugs and Vaccines

The constraints facing control of animal diseases among many include unavailability of veterinary drugs, expensive drugs and poor quality drugs. Strategies are needed to ensure adequate supply of affordable and quality veterinary drugs:

Strategic interventions

(i) Put in place a waver on VAT and exercise duty for veterinary pharmaceuticals and biologicals as it is done for agricultural inputs;
(ii) Facilitate research institutions dealing with animal health research and biotechnology to develop better vaccines;
(iii) Build capacity of the private sector to import or manufacture appropriate veterinary drugs and vaccines in the country;
(iv) Support the private sector to establish veterinary drug stores for the upcountry zones;
(v) Enable the Central Veterinary laboratory to have capacity to produce vaccines for the important epizootic diseases.

4.3.3.4 Improvement in the Delivery of Animal Health Services

The delivery of animal health services hinges on the availability of a pool of qualified service providers at the grass root level. In many of the LGAs there is an acute shortage of such cadre of service providers. It is therefore required to have strategic interventions to address this shortage.

Strategic interventions:

(i) Create a pool of animal health workers by training staff at certificate, diploma, degree levels;
(ii) Enable Local Government to employ qualified animal health workers at district, division, ward and village levels;
(iii) Provide resources towards in-service training and continuous professional development for the existing animal health workers.

4.3.3.5 Enforcement of the Existing Laws and Regulations for Control of Animal Diseases

Control of animal disease can only be achievable with sound regulatory framework and enforcement mechanisms. It has often occurred that authorities for enforcement of laws are not aware of the existing laws governing control of animal diseases. In order to curb such situations the following strategic interventions should be put in place:

Strategic interventions:

(i) Enable law enforcers with current legal instruments providing for animal health and public health issues to carry out their duties effectively;
(ii) Create awareness among stakeholders of the livestock sector on existence of laws and regulations governing animal health issues;
(iii) Establish mechanisms for enforcement of the existing laws and regulations at LGA and central government level.

4.3.3.6 Improvement in Livestock Dipping System

Ticks and tick-borne diseases (TBDs) are among the most important constraints limiting livestock production in the country. It is estimated that 72% of cattle mortalities are due to TBDs namely East Coast Fever (ECF), Anaplasmosis, Cowdriosis (Heart water) and Babesiosis (Redwater). Although the central government and LGA have participated in construction and rehabilitation of dip tanks, often these dips are not utilized fully. The following are strategies required in order to control TBDs:

Strategic interventions:

(i) Make LGAs take responsibility of construction and rehabilitation and operation of dips for wards;

(ii) Establish mechanisms for proper supervision of Ward/Village Dip Tank Committee by ward animal health workers;
(iii) Enforce compulsory dipping by enacting ward or village by-laws under the Animal Disease Act;
(iv) Educate livestock farmers on importance of dipping.

4.3.3.8 Improvement of Livestock Farmers' Skills and Knowledge

Low education among livestock keepers particularly in the rural areas hampers their ability to adopt new technologies pertaining to livestock production and animal health. Strategic interventions are needed by the LGAs to circumvent this problem.

Strategic interventions:

(i) Strengthen livestock extension services at grass root levels;
(ii) Establish knowledge gaps and training needs for the livestock farmers in the villages;
(iii) Establish divisional livestock farmers training centres;
(iv) Conduct farmer field schools for livestock activities at every division or ward on regular basis.

4.3.3.9 Control of Incursion of Livestock from Neighbouring Countries Carrying Infectious Diseases

Zoosanitary inspections are necessary in preventing introduction of exotic animal diseases. Diseases such as CBPP are rolled into the country through uncontrolled boarder movement of cattle in Arusha and Kagera regions. Strategies are required to ensure proper control of animal diseases from neighbouring countries.

Strategies:

(i) Enable government authorities responsible for zoosanitary inspection of imported animals to carry out their duties in all LGAs;
(ii) Enable law enforcers to take their full responsibility in ensuring that stern measures are taken against culprits;
(iii) Harmonise national with regional policies on zoosanitary inspectorate services.

4.3.4 Strategic Intervention Area 4: Livestock Development Services, Capacity Building and Farmer Empowerment

4.3.4.1 Livestock Training

The role of the training section is to impart appropriate knowledge and skills to a broad range of stakeholders including farmers. After successful training, they could either engage in self-employment or seek employment in the public or private sectors in order to achieve sustainable growth in the livestock sub-sector.

In order to continue turning out increased numbers of such graduands strategies are needed to address the following constraints: inadequate infrastructure, poor training facilities, insufficient expertise, low participation of other stakeholders and weak research-training-extension-livestock farmers' linkage.

Strategic interventions:

(i) Review and update all curricular for livestock training to make them responsive to client needs;
(ii) Build capacity of LITIs to conform to NACTE requirements;

(iii) Retool livestock tutors through short and long term training courses to march the needs of livestock stakeholders to be trained (including courses on business management and entrepreneurship and livestock products processing);
(iv) Train large scale commercial farmers in order to meet national demand for livestock products;
(v) Develop demand driven instructional materials;
(vi) Rehabilitate and equip livestock training institutes;
(vii) Promote private sector participation/investment in livestock training;
(viii) Determine training needs for livestock producers and other stakeholders in the livestock value chains;
(ix) Develop demand driven training programmes for livestock producers and other stakeholders in the livestock value chains;
(x) Strengthen research – training – extension - farmer linkages.

4.3.4.2 Livestock Research

Research in livestock will be carried out mainly by the public sector through the National Livestock Research Institute and Central Veterinary Laboratory and the Sokoine University of Agriculture while the private sector as well as the NGOs will be involved, where feasible, in such activities as studies involving testing of drugs (pharmaceutical companies), development of specific technologies needed by NGOs involved in developmental ventures. International and regional research institutions namely; ILRI, ASARECA and SACCAR will continue to be key collaborators through their networking activities.

Livestock research will focus on the following areas:-
(i) Milk – Dairy cattle, dairy goats and other milch animals improvement;
(ii) Meat – Beef cattle, sheep, goats, poultry and pigs improvement;
(iii) Livestock by-products – hides and skins, bones, blood, hooves, hair preservation, processing methods and utilization;
(iv) Animal feed resources, pasture, forages, compounded supplementary feeds and feeding of ruminant and non-ruminant livestock;
(v) Animal genetic resources characterization, conservation and improvement, promotion and utilization of non conventional livestock species;
(vi) Animal diseases surveillance, prevention and control, diagnostics, vaccine development and testing;
(vii) Draught power, animal drawn implements, biogas and animal welfare;
(viii) Value addition, marketing, consumption and trade as well as policy.

Strategic interventions:
(i) Strengthen research infrastructure and provide facilities for livestock research in livestock research institutes;
(ii) Strengthen the human resource capacity in livestock research by supporting training in disciplines with inadequate staff;
(iii) Establish a system of remuneration to motivate and retain trained livestock researchers;
(iv) Promote research to generate new knowledge and technologies responding to client needs;
(v) Promote participatory action research with stakeholders in livestock value chains;
(vi) Strengthen coordination and collaboration among stakeholders in livestock research including private sector;

(vii) Broaden funding base for research and promote participation of the private sector in funding livestock research through establishment of National Livestock Research Fund (NLRF);
(viii) Build capacity of researchers in packaging of technologies and information generated from research for use by stakeholders.

4.3.4.3 Livestock Extension Services

Livestock extension services deal with the transfer of knowledge and skills from experts to livestock farmers and the sharing of information and experiences amongst stakeholders in order to increase livestock production and productivity. Several approaches have been used in delivering livestock extension services including training and visit, livestock farmer field schools and livestock product promotion. Other approaches include study tours, farmer field days, mass media, agricultural shows, residential training, and demonstration units/plots.

Currently, the Central Government is responsible for livestock policy formulation, guidelines and technical backstopping. Major actors in the delivery of extension services to the livestock farmers are Local Government Authorities (LGAs) and the private sector.

Livestock extension service is constrained by weak collaboration amongst stakeholders, insufficient expertise, weak research-training-extension-farmer linkage, inadequate incentives, infrastructure and facilities.

Strategic interventions are required to address the following:
(i) Coordination and collaboration amongst stakeholders' extension delivery system;
(ii) Research- Extension- Farmer linkages;
(iii) Capacity building of extension staff and farmers empowerment;
(iv) Communication and information management.

Strategic interventions:
(i) Improve incentives to extension staff working in remote areas;
(ii) Strengthen capacity of livestock extension services by training, retraining and deploying adequate qualified extension staff at district, ward and village levels;
(iii) Rehabilitate the Rural Livestock Centres and establish a mechanism of operating them in a sustainable manner;
(iv) Improve efficiency and effectiveness of extension services through greater participation of stakeholders in all stages of technology development;
(v) Strengthen Research – Extension - Farmer linkages;
(vi) Strengthen coordination and collaboration amongst stakeholders in livestock extension services;
(vii) Promote private sector participation in provision of livestock extension services;
(viii) Promote use of participatory approaches and methodologies in delivery of livestock extension service;
(ix) Promote information sharing on good practices in livestock advisory/extension services and lessons learned;
(x) Promote market-oriented, farmer-led and demand-driven extension/advisory services;
(xi) Establish National Livestock Extension Fund (NLEF).

4.3.4.4 Livestock Information Service

Up to date, relevant and quality information on livestock is crucial for the management and development of the livestock sector. Apart from lack of harmonization and coordination, the existing livestock information system is limited by inadequate infrastructure and facilities, high cost in data collection, insufficient expertise and absence of centralized database system.

A well managed livestock sector requires a credible data and information system. The policy direction is to strengthen infrastructure and facilities for livestock information services, harmonize and coordinate livestock data, provide technical support, establish comprehensive management information system and ensure and support regular livestock census in the country. Strategies are needed to establish a credible livestock information system in the country.

Strategic interventions:

(i) Establish a comprehensive livestock management information system;
(ii) Strengthen collection, management, harmonization and dissemination of data and information system;
(iii) Build capacity of personnel on livestock data base and information system development;
(iv) Facilitate establishment of reliable and updated livestock census and database;
(v) Promote communication between the ministry responsible for livestock development and the public.

4.3.4.5 Farmer Empowerment

(i) Support establishment of Farmers Field Schools (FFS) to enhance dissemination of livestock technologies;
(ii) Carryout technology dissemination an on-farm demonstrations;
(iii) Empower farmers through training, entrepreneurship skills development and farmers organisation and institutional development;
(iv) Facilitate farmers operating livestock projects to acquire legal status in the form of registered associations and/or co-operative societies or private partnership companies;
(v) Promote, streamline and ease registration procedures for farmers organisations at grassroots level;
(vi) Build financial management capacity of livestock sub-sector grassroots organisations.

4.3.5 Strategic Intervention Area 5: Governance, Regulatory and Institutional Arrangements

4.3.5.1 National Level Institutional Co-Ordination

The LSDS will be complementary to the ASDS (2001) and ASDP (2004) and not their substitute. It provides a framework for implementation of the NLP (URT, 2006). LSDS seeks to deepen government and stakeholder response to the development needs of the rural communities whose livelihoods depend on livestock and to enhance the contribution of livestock sector to the national economy and food self sufficiency. Therefore, the implementation of LSDS will involve the Ministry of Livestock and Fisheries Development and the Local Government Authorities (LGAs) under the Prime Minister's Office-Regional Administration and Local Government (PMO-RALG). Furthermore

implementation of the LSDS will require close co-ordination among agriculture sector lead ministries (ASLMs), i.e. the Ministry of Agriculture Food Security and Co-operatives (MAFC), Ministry of Trade and Industry (MTI), Ministry of Lands and Human Settlements (MLHS), Ministry of Community Development Women Affairs and Children (MCDWC), the Presidents Office Planning and Privatisation (PO-P&P) and the Vice Presidents Office (Environment).

The LSDS will be mainstreamed in existing national level, inter-ministerial level co-ordination committee for ASDP. The Coordination with development partners will similarly be mainstreamed existing Agriculture Sector Working Group (ASWOG)

4.3.5.2 Strengthening the Ministry Responsible for Livestock Development

The 4th phase government has enhanced the status of the livestock industry by according it a fully fledged Ministry including Fisheries. The organisational structure of the Ministry is still evolving and will require strengthening in key result areas in order to improve performance and co-ordination with key livestock sector related ministries including PMO-RALG (TAMISEMI). In order to achieve this objective, the following concerted actions are proposed:

- Expand the human resource base of the Ministry to enable it face up to the challenges of spearheading the development of the livestock industry;
- Expand the budgetary allocation to the Ministry in order to implement policies espoused in the NLP and in the LSDS;
- Strengthen links between different stakeholders.

4.3.5.3 Establish a Proper Information Flow from Ministry to the Grass Root Livestock Service Providers

Proper planning, monitoring, coordination and decision making requires a well developed information flow amongst various players within the livestock sector. Unavailability or inadequate livestock data system compromises the development of the livestock sector. In order to avail credible data and information to stakeholders the following strategic interventions are necessary:

(i) Establish and put into use by various stakeholders a National Livestock sector database;
(ii) Establish a system of stakeholders' registration and reporting mechanism under various Livestock Boards (TDB, TMB, TVC etc);
(iii) Promote record keeping by all livestock value chain actors (farmers, livestock traders and processors);
(iv) Train government and LGA staff on how to input and retrieve data from national livestock data base;
(v) Carry out national livestock census at least every decade;
(vi) Identify and train other stakeholders on record and data keeping;
(vii) Establish Livestock identification and Traceability system.

4.3.5.4 Improve coordination of livestock activities between ministry and LGAs

Under the Local Government Reform Programme (LGRP) activities of the livestock sector in DALDOs office are coordinated by the district council. This arrangement has not addressed fully the linkages of DALDOs office to the MLFD hence weak/non existent the technical co-ordination between the LGAs and MLFD

Proper coordination will be achieved through the following strategic interventions:

(i) Devise better mechanisms of access to LGAs in implementation of technical matters;
(ii) Set up a desk officer dedicated to handle livestock matters at TAMISEMI headquarters for co-ordination with MLFD;
(iii) Mainstream inspectorate services (M&E) into sectoral ministry or at the Regional Secretariat rather than being part of LGA;
(iv) Enable livestock department at LGA level with its dedicated budgetary allocations;
(v) Employ staff within the livestock department according to their professional background;
(vi) Put in place appropriate enabling environment for various cadres employed in the Ministry responsible for livestock development;
(vii) Establish data recording and feedback mechanisms within LGAs and Ministry/Boards.

4.3.5.5 Improve the Engagement of LGAs in Promotion of Livestock Development

The livestock departments are understaffed in most of the LGAs and therefore unable to provide the required services at the ward and village level. There is a dire need to strengthen the human capacity of LGAs to delivery satisfactory livestock services, The following interventions will be required especially in regions/districts where livestock play a significant role in the livelihoods of the people.

Strategic interventions:

(i) Establish livestock subject matter specialist teams within each LGA at the district level under the DALDO or DLDO;
(ii) Deploy adequate livestock extension staff at village and ward levels;
(iii) Build Capacity of Livestock extension staff in strategic planning and project management Land use planning and range; Livestock legislations, regulations, standards , compliance monitoring, supervision and evaluation;
(iv) Carry out regular livestock extension service delivery and performance monitoring and evaluation and reporting to Regional secretariats.

4.3.5.6 Strengthen Livestock Products Boards

(i) Provide budgetary support livestock Boards to empower them;
(ii) Employ core staff in the VCT, TDB, TMB;
(iii) Establish stakeholders registration and reporting mechanism under various Livestock Boards (TDB, TMB VCT) etc;
(iv) Mainstream livestock Boards in Ministry's MTEF budgets;
(v) Develop mechanisms and capacity of Boards to work with LGAs through authorized officers;
(vi) Build capacity of Livestock Boards and farmers organization and institutional building, industry promotion and advocacy.

4.3.5.7 Harmonise and Rationalise Various Laws and Regulations which Oversee Livestock Industry and Natural Resources

Implementation of conservation policies have often resulted into frequent changes of livestock grazing areas into other uses particularly for wildlife. This has lead to livestock keepers migrating to marginal areas and other places of the country. The consequences of such immigrations are conflicts among land users and diminishing land for livestock

production. In order to avoid such situations the strategy addresses the following interventions:

(i) Organize inter-ministerial meetings to harmonise issues which cause conflicts in implementation of laws governing the two sectors;
(ii) Review outdated laws and regulations;
(iii) Rationalise and harmonise multiple laws and regulations impacting on the livestock industry;
(iv) Rationalise regulatory bodies involved in regulation of the livestock sector to improve business environment;
(v) Educate and sensitise stakeholders on land use and planning in line with global policies.

4.3.5.8 Promote the Use of Qualified Public and Private Service Providers at the Grass Root Level (Villages and Wards)

The delivery of livestock extension services will only be successful if there is a pool of qualified service providers at the grass root level. In many of the LGAs there is an acute shortage of such cadre of service providers. Strategies are required to address this shortage:

Strategic interventions:

(i) Create a pool of livestock extension workers by training staff at certificate, diploma, degree levels;
(ii) Enable Local Government to employ qualified livestock extension workers at district, division, ward and village levels;
(iii) Provide resources towards in-service training and continuous professional development for the existing livestock extension workers;
(iv) Establish mechanisms for accountability of private service providers to LGAs;
(v) Provide motivation for service providers working in difficult (remote) areas.

4.3.6 Strategic Intervention Area 6: Cross Cutting and Cross-Sectoral Issues

Cross cutting and cross-Sectoral issues are issues that are outside the mandate of the MLFD that influence livestock development. Cross cutting issues include gender, HIV/AIDS and environment while cross-sectoral issues include infrastructure, and electrification and communication.

4.3.6.1 Gender Mainstreaming in Livestock Development

The Government, through MCDWC, has developed a *Gender Policy*, and is promoting the use of gender analysis in community-based development programmes. Besides the Gender policy it is important to mainstream gender in the different sectors of the economy. Gender mainstreaming refers to the process of integrating needs of men and women and all vulnerable groups at all levels in policy, strategic plans, programmes, rules, procedures, reforms and circulars.

Gender mainstreaming in livestock development is the strategy to achieve sustainable gender equality in the livestock industry. It focuses on aligning with and influencing the designs, formulation and implementation of policy, programmes, strategic plans and operational practices. The strategy aims at bringing about equity and equal chances to access opportunities and control over resources for both men and women at all levels.

Strategies are required to address constraints to gender mainstreaming including low awareness among stakeholders, inadequate expertise, cultural practices and traditions.

Strategic interventions:

(i) Promote and strengthen capacity for gender mainstreaming in the livestock sector;
(ii) Promote development of gender specific technologies in livestock sector;
(iii) Establish gender specific programmes for gender empowerment and access to land, technology, credit and markets.

4.3.6.2 HIV/AIDS, Malaria and Tuberculosis

HIV/AIDS is a national disaster affecting particularly young men and women. According to the National Policy on HIV/AIDS (2001), Tanzania is among the most affected countries in Sub-Saharan Africa. Besides HIV/AIDS, Malaria and Tuberculosis are also important diseases that drain resources and cause shortage of skilled and unskilled labour as well as livestock farmers and other actors in the different livestock value chains thus affecting the livestock industry. In addition, these diseases deplete financial resources in the form of diagnosis and treatment costs of associated diseases.

Concerted efforts are being directed towards creating awareness among the stakeholders on the importance of controlling the rate of new infections. However, efforts to combat HIV/AIDS in the livestock sector are constrained by socio-economic and cultural factors, low level of awareness among stakeholders, inadequate health infrastructure and facilities especially in the pastoral communities.

Strategic interventions:

(i) Promote staff awareness on HIV/AIDS;
(ii) Promote voluntary counselling and testing services;
(iii) Strengthen care and support to employees living with HIV/AIDS;
(iv) Promote HIV/AIDS management capacity;
(v) Promote collaboration with other stakeholders in the fight against HIV/AIDS and related opportunistic diseases.

4.3.6.3 Environmental Conservation

The livestock sector attaches strong emphasis on environmental conservation as it has effects on land, water and forage which may affect social and economic factors influencing the lives of livestock farmers.

Strategic interventions:

(i) Promote environmental conservation in the livestock industry;
(ii) Strengthen capacity on environmental conservation;
(iii) Promote proper land use planning in livestock production for environmental conservation;
(iv) Promote indigenous technical knowledge and conventional technologies for sustainable livestock production and environmental conservation;
(v) Enforce laws and regulations to control movement of large livestock herds;
(vi) Promote de-stocking and encourage pasture establishment;
(vii) Promote rehabilitation programmes on degraded grazingland;
(viii) Promote integrated land resource use plans.

4.3.6.4 Rural Infrastructure

A well-developed and maintained rural infrastructure is essential for livestock development and overall rural development. Investments in rural roads, water supply, transportation, storage, cattle dips, rural markets, electrification, communication, water management schemes, charcoal dams, stockholding grounds, stock auction markets, stock routes and abattoirs are critical to stimulating increased livestock production.

Not only is the stock of rural infrastructure in poor condition and inadequate for the development of the rural economy, it is also unevenly distributed, leaving some high livestock potential areas with inadequate or no infrastructure at all.

Some rural infrastructure such as dips, charcoal dams, stockholding grounds, livestock markets, stock routes and abattoirs fall directly within the livestock sector and interventions to rehabilitate and improve these are the mandate of the Ministry of Livestock and Fisheries Development and LGAs. However, a significant proportion of key infrastructure lies outside the sector including rural roads, communication and electrification. Development of this infrastructure under the relevant Ministries will take account the needs of livestock development and will be undertaken within the framework of the RDS.

Strategic interventions:

(i) Establish rural infrastructure needs for development of the livestock and agriculture sector as a whole;
(ii) Devise and implement a mechanism to ensure incorporation of demand driven livestock infrastructure requirements in development plans of ministries responsible for infrastructure development and in District Development Plans;
(iii) Develop and implement a programme for promoting the use of alternative sources of energy such as solar, wind and biogas;
(iv) Promote private investments in rural infrastructure.

5 INSTITUTIONAL FRAMEWORK FOR IMPLEMENTATION OF THE LSDS

5.1 Main Actors

The main actors in the implementation of the LSDS will include livestock chain actors directly involved in within-chain exchanges (e.g. producers, processors, traders) and external actors who do not directly handle the livestock and livestock products but provide services, expertise and may exert influence on the performance of the livestock chains (e.g. local government, civil society organizations). The direct chain actors are mainly the private sector while the external actors can fall under the public or private sector.

The chain actors who are also the private sector include livestock keepers, and agri-businesses (medium and large-scale producers, traders, transporters, importers, exporters, processors, supermarkets, marketers and hotels). Other livestock keepers groups and faith organizations directly involved in within-livestock chain exchanges include non-governmental organizations (NGOs), community-based organizations (CBOs) and faith based organizations (FBOs) as well as communities.

External actors which fall under the public sector include the Agricultural Sector Lead Ministries (ASLMs) i.e. Ministry of Livestock and Fisheries Development (MLFD), Ministry of Agriculture, Food Security and Cooperatives (MAFC), Ministry of Water (MoW), Ministry of Industries, Trade and Marketing (and MITM), and Prime Minister's Office - Regional Administration and Local Government (PMO-RALG).

Others include President' Office - Planning Commission, Vice President's Office (VPO), Prime Minister's Office, Disaster Management Department (PMO-DMD), Ministry of Health and Social Welfare (MHSW), Ministry of Natural Resources and Tourism (MNRT), Ministry of Community Development, Gender and Children (MCDGC), Ministry of Lands, Housing and Human Settlements Development (MLHHSD), Ministry of Finance (MoF), Ministry of Communication Science and Technology, Ministry of Infrastructure Development (MID), Ministry of Education and Vocational Training (MEVT), Ministry of Energy and Minerals, Ministry of Justice and Constitutional Affairs (MJCA) and Ministry of Home Affairs, Tanzania Food and Nutrition Centre (TFNC), Tanzania Food and Drugs Authority (TFDA), Tanzania Bureau of Standards (TBS), National Environmental Management Council (NEMC), Higher Learning and Research Institutions, and Local Government Authorities (LGAs), National Land Use Planning Commission (NLUPC), Small Industries Development Organisation (SIDO), and Tanzania Industrial Research and Development Organisation (TIRDO).

The private organizations that fall under external actors include non-governmental organizations (NGOs), community-based organizations (CBOs) and faith based organizations (FBOs).

5.2 Roles and Responsibilities

5.2.1 Agricultural Sector Lead Ministries (ASLMs)

The Agricultural Sector Lead Ministries currently constitute the Ministry of Livestock and Fisheries Development (MLFD) which will have the coordinating role for LSDS, the

Ministry of Agriculture, Food Security and Cooperatives (MAFC), Ministry of Water and Irrigation (MoWI), and Ministry of Industries, Trade and Marketing (MITM); and the Prime Ministers Office – Regional Administration and Local Government (PMO-RALG). These are also the Ministries responsible for implementing the ASDS and ASDP.

The PMO-RALG will oversee the implementation of the LSDS at the LGA level, and the other ministries will oversee its implementation at national level.

5.2.1.1 Ministry of Livestock and Fisheries Development (MLFD)

The MLFD will:

(i) Have a leading role of coordinating and monitoring the implementation of the LSDS;
(ii) Ensure that livestock development activities are properly integrated into the various sectors;
(iii) Evaluate the impact of livestock related activities in the country;
(iv) Ensure that all stakeholders are informed of their roles and responsibilities and interact adequately in livestock development issues;
(v) Develop indicators for evaluation and monitoring livestock development activities in line with the framework of the NSGRP M&E;
(vi) Develop and disseminate appropriate technologies that will enhance livestock production;
(vii) Promote capacity building of LGAs as stipulated in the ASDP;
(viii) Promote value addition on livestock products;
(ix) Promote the application of good livestock husbandry practices;
(x) Provide and supervise the implementation of regulatory services;
(xi) Set technical standards and guidelines for service providers; and
(xii) Maintain and disseminate appropriate information on livestock and livestock products.

5.2.1.2 Ministry of Agriculture, Food Security and Cooperatives (MAFC)

The MAFC will:

(i) Promote integration of crop and livestock production activities in smallholder farming systems;
(ii) Promote use of animal waste/manure for crop production; and
(iii) Promote use of animal power for cultivation and transportation.

5.2.1.3 Ministry of Industry and Trade (MIT)

The MIT will:

(i) Promote agro-processing through the Rural Industrialization Strategy;
(ii) Establish legal and institutional framework conducive to facilitate both local and international trade for livestock and livestock products, which is fair to both producers and consumers;
(iii) Develop guidelines on grades and standards; and
(iv) Provide regulatory services on quality standards for livestock products.

5.2.1.4 Ministry of Water (MoW)

The MoW will:

(i) Ensure conservation of water catchments areas;
(ii) Strengthen mechanisms for sustainable utilization of water resources and conflict resolution by user communities (water rights and associations); and
(iii) Ensure integrated water resources management.

5.2.1.5 Prime Minister's Office – Regional Administration and Local Government (PMO-RALG)

PMO-RALG will:

(i) Facilitate inter-sectoral coordination on matters related to livestock development;
(ii) Facilitate smooth exchange of information between the LGAs and central ministries; and
(iii) Ensure financial control of all the resources allocated to the LGAs.

5.2.2 Sectoral Ministries

The roles and responsibilities of the sectoral ministries are as highlighted below:

5.2.2.1 Ministry of Finance (MoF)

The MoF will:

(i) Promote and monitor the implementation of the Micro-Finance Policy;
(ii) Review taxation system to stimulate economic development including livestock development;
(iii) Allocate adequate funds for livestock development;
(iv) Promote legal and policy environment for private sector participation in various activities related to distribution and marketing of inputs and agricultural products;
(v) Monitor and evaluate livestock development in line with NSGRP monitoring system indicators;
(vi) Analyse the contribution of livestock in growth and poverty reduction; and
(vii) Provide regulatory services for financial institutions so as to encourage increased private sector investment.

5.2.2.2 Ministry of Community Development, Gender and Children

The Ministry of Communication Development, Gender and Children will:

(i) Conduct research and training on healthy eating and diets;
(ii) Advocate and promote labour-saving technologies, particularly where women are mostly involved in all the livestock systems; and
(iii) Mobilize and sensitize the public towards more equitable gender division of labour and decision-making on matters related to livestock management at the household level.

5.2.2.3 Ministry of Land, Housing and Human Settlements Development

The Ministry of Land, Housing and Human Settlement Development will:

(i) Streamline the procedures for land acquisition for different livestock production systems such as pastoralism, agropastoralism and ranching;
(ii) Ensure land security for farmers and marginalized groups including women, to produce livestock products for subsistence and for the market; and
(iii) Designate areas for potential investors willing to invest in ranching and large scale production of other livestock types.

5.2.2.4 Ministry of Natural Resources and Tourism

The Ministry of Natural Resources and Tourism will:

(i) Promote sustainable utilization of forestry, wildlife, freshwater and marine products;
(ii) Ensure conservation of forest reserves and water catchment areas; and
(iii) Strengthen mechanisms for harmonious and sustainable coexistence of wildlife and neighbouring pastoral communities.

5.2.2.5 Ministry of Infrastructure Development

The Ministry of Infrastructure Development will:

(i) Expand transportation networks at all levels, roads infrastructure;
(ii) Provide regulatory services on transportation infrastructure; and
(iii) Expand and maintain transportation system so as to enhance efficient transportation and distribution of livestock and livestock products.

5.2.2.6 Ministry of Transport

The Ministry of Transport will

(i) Strengthen the meteorological services and maintain proper information system for weather forecasting;
(ii) Expand communication and transportation networks at all levels including railways, ports/harbours and airports;
(iii) Provide regulatory services on communication infrastructure

5.2.2.7 Ministry of Health and Social Welfare

The Ministry of Health and Social Welfare will:

(i) Advise and promote appropriate diets and other nutritional practices for all people and especially those suffering from HIV/AIDS, Malaria, and other common diseases;
(ii) Maintain and disseminate proper health and nutritional status information;
(iii) Strengthen measures to control communicable and infectious diseases;
(iv) Set guidelines on health, hygiene and sanitation for service providers;
(v) Formulate food safety policy; and
(vi) Provide and supervise the implementation of relevant regulatory services on health, hygiene and sanitation.

5.2.2.8 Ministry Home Affairs

The Ministry of Home Affairs will:

(i) Facilitate enforcement of by-laws, laws and regulations in the livestock sector;

(ii) Facilitate resolution of conflicts between livestock farmers and crop growers; and
(iii) Enhance control of illegal cross border livestock movements.

5.2.2.9 Ministry of Constitutional Affairs and Justice (MCAJ)

The MCAJ will:
(i) Facilitate formulation of livestock legislations;
(ii) Facilitate the conduct of court proceedings; and
(iii) Advice the Livestock Sector on legal and contractual issues.

5.2.2.10Higher Learning and Research Institutions

Higher Learning Institutions will:
(i) Carry out livestock research;
(ii) Develop and disseminate appropriate livestock production and value addition technologies;
(iii) Develop training programmes and modules for livestock; and
(iv) Provide advisory services on issues related to livestock.

5.2.3 Other Public Institutions

5.2.3.1 Tanzania Meat Board (TMB)

Tanzania Meat Board will:
(i) Regulate activities in the meat industry;
(ii) Promote processing, marketing and consumption of safe and quality meat and meat products;
(iii) Regulate importation and exportation of meat and meat products;
(iv) Promote collection and dissemination of information on meat and meat products;
(v) Support and promote research on meat technology;
(vi) Promote establishment of meat and processors associations; and
(vii) Liaise with the Tanzania Food and Drugs Authority (TFDA) to ensure compliance with food safety standards.

5.2.3.2 Tanzania Dairy Board (TDB)

The Tanzania Dairy Board will:
(i) Regulate activities in the dairy industry;
(ii) Search and develop markets and commission market research;
(iii) Ensure availability of appropriate dairy technology;
(iv) Promote and facilitate formation of associations or other bodies of stakeholders within the dairy sub-sector;
(v) Promote and co-ordinate the development of small, medium and large scale dairy keepers and processors; and
(vi) Liaise with the Tanzania Food and Drugs Authority (TFDA) to ensure compliance with food safety standards.

5.2.3.3 Tanzania Bureau of Standard (TBS)

TBS will:
(i) Promulgate national food standards;

(ii) Work with small and medium enterprises (SMEs) to promote and monitor implementation of standards for sustainable industrial, social and economic development; and
(iii) Ensure livestock products brought in the country conform to standards.

5.2.3.4 Tanzania Food and Drugs Authority (TFDA)

TFDA will:
(i) Monitor safety of all food imports of animal origin as well as local food items offered for sale at retail outlets;
(ii) Advise the Government on the use of genetically modified foods, food supplements and nutrient enhanced foods;
(iii) Inform the public about necessary food safety matters and enforce national and international standards; and
(iv) Establish risk base control measures that will enhance food safety.

5.2.3.5 National Environmental Management Council (NEMC)

NEMC will:
(i) Advise on appropriate management of the environment to prevent and control degradation of land, water, vegetation and air, which constitute life support systems for sustainable livestock production; and
(ii) Promote conservation of agro-biological diversity and ecosystems of Tanzania, which are relevant to food security.

5.2.3.6 National Land Use Planning Commission (NLUPC)

NLUPC will:
(i) Ensure compliance with approved land use plans; and
(ii) Provide training and advisory services to issues related to land use practices.

5.2.3.7 Small Industries Development Organisation (SIDO)

SIDO will:
(i) Promote the development of agro-food and related small industries, as well as plan and co-ordinate their activities;
(ii) Provide technical assistance, management and consultancy services to small agro-processing enterprises in Tanzania; and
(iii) Provide and promote training facilities for persons engaged in or employed or to be employed in small agro-processing industries and to assist and co-ordinate activities of other institutions engaged in such training.

5.2.3.8 Tanzania Industrial Research and Development Organisation (TIRDO)

TIRDO will:
(i) Carryout and promote the carrying out of applied research designed to facilitate the evaluation, development and use of local materials in agro-food industrial processes;
(ii) Carryout research in various local and foreign agro-food industrial techniques and technologies and evaluate their suitability for adoption and alternative use in industrial production; and

(iii) Promote or provide facilities for the training of local personnel for carrying out scientific and industrial research related to food security.

5.2.3.9 Tanzania Commission for Science and Technology (COSTECH)

COSTECH will:

(i) Seek appropriate means of utilising selected research results; promote technology development; and mobilise financial and academic support in favour of livestock research;
(ii) Advise the Government on all matters relating to scientific research and technology development related to livestock; and
(iii) Coordinate and promote research activities in agriculture and livestock, public health, forestry, fisheries, marine sciences, industry and wildlife in the country

5.2.3.10 Regional Secretariats (RS)

The RS will:

(i) Coordinate planning and implementation of district level livestock development programmes;
(ii) Establish a mechanism for communication and reporting between the PMO-RALG, MAFC and districts;
(iii) Strengthen the capacity of districts to plan and implement livestock development programmes and activities; and
(iv) Establish regional livestock development committees to coordinate the implementation of the LSDS at regional level.

5.2.4 Local Government Authorities (LGAs)

LGAs will:

(i) Interpret livestock development strategies according to local context and the livestock production systems existing in their areas;
(ii) Build capacity at division, ward and village levels by providing technical support and skills development on matters related to livestock development;
(iii) Coordinate livestock development activities in the district including those being implemented by NGOs/CBOS/FBOs/CSOs and donor supported programmes;
(iv) Establish livestock sector development committees, which will be responsible for focusing attention on livestock development issues in the District;
(v) Mobilise and allocate resources for implementation of livestock development programmes and activities;
(vi) Establish a mechanism for livestock information exchange within and outside the district;
(vii) Strengthen capacity of wards and villages in developing, planning and executing livestock development activities; and
(viii) Establish a system of monitoring and reporting livestock disease outbreaks within the District.

5.2.4.2 Wards and Villages/Sub-villages

Wards and villages will:

(i) Coordinate all livestock development activities in the ward;

(ii) Mobilise human, capital and financial resources for implementation of livestock development activities;
(iii) Monitor and evaluate livestock development activities;
(iv) Sensitise communities on matters related to livestock development;
(v) Coordinate and monitor livestock development activities being implemented by NGOs/CBOs in the wards and villages; and
(vi) Mobilize communities for the rehabilitation and maintenance of livestock infrastructure like dips, livestock holding grounds and markets.

5.2.5 Civil Society Organisations (NGOs, CBOs, FBOs, etc)

CSOs will :

(i) Target vulnerable groups, including resource-poor households and marginalized groups in society with assistance to facilitate livestock production, processing and marketing of livestock and livestock products;
(ii) Intervene in emergency situations to address problems of livestock caused by natural calamities such as disease outbreaks;
(iii) Work to improve organizational capacity of farmers so that they can better access services like extension, research, markets, credit and inputs for livestock related activities;
(iv) Collaborate with other stakeholders in formulation, implementation and review of livestock development policies, strategies, programmes, projects and activities;
(v) Mobilise and enhance household and community participation in livestock programmes and activities; and
(vi) Assist livestock communities susceptible to communicable diseases (including HIV/AIDS) to acquire life skills for prevention of transmission of diseases.

5.2.6 Private Agri-businesses

Private agribusiness will:

(i) Participate in the development and adoption of profitable technologies and practices for livestock production, processing and preservation;
(ii) Develop diversified range of livestock products being produced, processed and consumed;
(iii) Exert demand, through their associations, for livestock services including extension, animal health, marketing, credit and others;
(iv) Stock, distribute, and retail livestock inputs, buy, warehouse and transport livestock and livestock products, and export livestock and livestock products;
(v) Invest in large-scale livestock production, for example, ranching, as well as in value addition including processing of livestock products;
(vi) Provide employment opportunities, hence increase income and improve food security;
(vii) Provide credit facilities for livestock producers and small-scale entrepreneurs;
(viii) Advocate for legal land ownership that can be used as collateral for loans;
(ix) Participate in the formulation and implementation of national and international standards for livestock products; and
(x) Enhance capacity of small-scale livestock producers.

5.2.7 Cooperatives and Associations

Cooperatives and Associations will:

(i) Establish production inputs and equipment hire and service centres;
(ii) Mobilise members to establish processing facilities for livestock products;
(iii) Negotiate for fair prices of livestock production inputs and livestock products;
(iv) Assist members to sell their livestock and livestock products; and
(v) Mobilise savings among members and organise credit facilities within the community (e.g. SACCOS).

5.2.8 Livestock Farming Households

Livestock keeping households will:
(i) Participate in livestock programmes and activities according to their specific livestock production system;
(ii) Mobilise resources (material, financial and human) for implementing livestock production activities;
(iii) Endeavour to promote practices for sustainable livestock production without destroying the environment; and
(iv) Participate in generating information on livestock production and related activities.

5.3 Coordination Mechanism

The implementation and coordination of the LSDS interventions will be mainstreamed in existing Government framework for the coordination of the ASDP and NSGRP (MKUKUTA). This includes the coordination of the MLFD with other agricultural sector related ministries, institutions, development partners, agencies and other stakeholders such as livestock farmers, traders, processors and their associations. Coordination of the LSDS will be done at national, regional, district, ward and village levels as described below:

5.3.1 National level

At the national level there will be three organs: 1) the National Steering Committee**,** which will be chaired by the Permanent Secretary MLFD, and comprised of representatives of all relevant ministries, representatives from other relevant public institutions, international agencies, higher learning institutions, the private sector (farmers, livestock keepers and agribusinesses) as well as representatives from the CSOs; 2) the National Livestock Development Technical Committee comprising of a few selected members of the Steering Committee and which will act as its sub-committee; and 3) the Directorate of Policy and Planning in the Ministry of Livestock and Fisheries Development.

The Steering Committee will provide the overall guidance and coordination in the implementation of the LSDS, while the Technical Committee will provide technical support to the Steering Committee, Regions, Districts and other relevant actors in the process of implementing and monitoring the various interventions under the LSDS. The Directorate of Policy and Planning will provide overall supervision and will act as the Secretariat for all issues related to the implementation of the NLP and the LSDS. It will act as the Secretary of the Steering and Technical Committees.

5.3.2 Regional level

At the Regional level the Regional Livestock Development Committee will be chaired by the Regional Commissioner and will comprise of RAS, Regional Advisors in the sectors of agriculture, livestock, cooperatives, community development, infrastructure and health; and representatives from the private sector and CSOs. This Committee will be responsible

for coordinating and monitoring all livestock development related interventions in the Region, promoting initiatives to achieve sustainable livestock development in the Region and facilitate reporting on livestock development situation and interventions to appropriate organs.

5.3.3 District level

At the District level the District Livestock Development Committee will be chaired by the District Commissioner and will comprise the District Executive Director, DAS, all members of DMT, as well as representatives of agribusinesses, farmers, livestock keepers and CSOs. It will perform the same roles as the Regional committee but at District level.

5.3.4 Ward level

At the ward level the Ward Livestock Development Committee will be chaired by the Ward Executive Officer. The committee will comprise village chairpersons, Village executive officers, extension workers, leaders from religious organizations, representatives from NGOs and CSOs operating in the ward as well as influential people (business people, and livestock keepers). The committee will be responsible for identifying and mapping livestock development problems in the ward, promoting activities/initiatives to develop livestock, prepare plans for implementing livestock interventions, mobilise resources for implementing livestock production activities, coordinate and monitor livestock development activities in the ward and liaise with the district authorities on livestock development issues.

5.3.5 Village

At village level the Village Livestock Development Committee will be chaired by the village chairman. It will comprise the Village Executive officer, who will be the secretary to the committee, village extension workers (livestock, community development, trade and industry), and representatives from NGOs and CSOs operating in the village, leaders of religious denominations, livestock keepers, processors of livestock products and livestock traders.

The responsibilities of the Village Livestock Development Committee will be similar to those of the Ward Livestock Development Committee.

5.4. Monitoring and Evaluation

The monitoring and evaluation (M&E) system for the LSDS will be linked to the M&E framework laid out in the NSGRP, the NLP and to M&E systems of each participating sectoral ministry. The Directorate of Planning and Policy of the MLFD will not conduct a separate M&E but rather each intervention will have its own M&E indicators to measure performance and will inform the individual units through the NSGRP on issues pertaining to best practices by encouraging selection of simpler and more affordable indicators and ensuring the usability of the results. At the national level, the Directorate of Planning and Policy of the MLFD will ensure compliance with national poverty monitoring system indicators and therefore contribute to the harmonisation and prioritisation of the poverty monitoring master plan indicators. The logframe in Table 9 shows the indicators that will be used to monitor progress in the implementation of the LSDS.

5.5. Indicative Cost and Benefit for implementation of LSDS

The LSDS covers nine strategic areas which are considered the major STRATEGIC AREAs for livestock sector development. An indicative budget for each STRATEGIC AREA given in the table below is derived from estimates of costs of implementing the various interventions under each STRATEGIC AREA over a period of five years (2011 – 2015). The budget indicates funds which will be required to implement the strategy as a whole over a five year period. Budgetary allocation between MLFD and other key Ministries and institutions will depend on roles each will play in the implementation of LSDS. The total indicative budget is US $ 281 million (Table 8). A detailed Livestock Development Programme over five years should be able to show that there will be a positive return on the investments in the strategic areas elaborated in the LSDS and significant contribution to the overall goals of Vision 2025, MKUKUTA and the MDG 1 and 2. The following benefits are expected from implementation of the LSDS during the five year period (2011/2012-2015/2016):

(i) Calf mortality in the traditional sector will decrease from the current 30-45% due to TBD to less than 10%;
(ii) Mortality among local chicken will be reduced from current level of more than 60% to less than 30%;
(iii) Cattle off-take from the traditional sector will improve from 8-10% to 12-15% leading to meat production increasing from 449,673 MT to 809,000 MT;
(iv) Commercial ranching in NARCO and privatised satellite ranches will increase from the present 83,160 cattle to 127,000 cattle with an off-take 22-23% supplying about 10,000 steers equivalent to 1500 MT of beef per annum;
(v) Number of improved dairy cattle will increase from 605,000 cattle kept by about 150,000 farm households through annual insemination of about 100,000 doses to about 985,000 cattle kept by about 300,000 farmers;
(vi) The traditional herd will increase by 3.5% per annum to 21.5 million;
(vii) Milk production growth will increase from current rate of 5-6% per annum to 7% per annum reaching 2.25 billion litres;
(viii) Egg production will increase by 10% per annum from 2.69 billion eggs to 4.7 billion eggs per annum;
(ix) Production of hides and skins will increase by 12% per annum from 5 million pieces worth 21 billion Tshs in 2007/08 to 9.8 million pieces worth about 40 billion Tshs;
(x) Overall Livestock sector growth will improve from the current 2.3% per annum to at least 4.5% per annum;
(xi) Overall livestock contribution to the GDP will increase from 4.0% equivalent to 789 million US $ (947 billion Tshs) in 2009/10 to 7% worth 1.27 billion US $ (1,440.30 billion Tshs).

Table 8: Indicative budget for implementation of LSDS (Million US$)

Strategic Intervention Area	Strategic Area	Estimated Cost (US $)
Intervention Area 1	Sustainable use of land, water, pastures and rangelands	25
Intervention Area 2	Public/Private sector investments and financing for improvement of livestock value chain productivity and efficiency (production, marketing, processing and consumption promotion)	110
Intervention Area 3	Control of Livestock diseases and public health	46
Intervention Area 4	Livestock Development Services (Research, training, extension services, capacity building, farmer empowerment and related infrastructure)	45
Intervention Area 5	Governance, regulatory and institutional framework	40
Intervention Area 6	Cross cutting issues and Cross-Sectoral Issues	15
	Total	**281**

5.6 Priority areas for immediate action

While the full implementation of the LSDS will be done after a comprehensive livestock development programme and plans have been worked out, there are areas that are a pre-requisite for sustainable development of the livestock sector and need immediate attention. These include:

5.6.1 Strategic Intervention Area 1: Issues of Land Water and Rangelands

Immediate action is required to accelerate ongoing efforts to institute land use planning in all districts at the village level, especially in districts with land use conflicts between pastoralists and crop farmers. Of particular importance is the need to designate certain districts and/or regions for specific livestock commodities especially for ruminant meat and milk production based on agro-climatic conditions, existing infrastructures and opportunities as well as cultural traditions.

5.6.2 Strategic Intervention Area 2: Public/Private Sector Investments in the Livestock Sector Value Chain

In order to commercialize livestock production, strategies and interventions proposed under this STRATEGIC AREA need to be given immediate attention especially with regard to improvement of financial services and incentives favourable for private sector participation in production, processing and marketing of livestock and livestock products.

5.6.3 Strategic Intervention Area 4. Livestock Development Support Services

Supportive services outlined under this STRATEGIC AREA are important drivers of change and development especially for the majority of smallholder livestock farmers. Adequate extension services, training, research and farmer empowerment interventions are necessary to bring about the technological innovations that are required to transform the livestock sector to become commercialized and environmentally sustainable. These efforts have to be backed up by a continuous and sustained veterinary services delivery, disease surveillance, preparedness and adequate control measures.

6.0 The LSDS Log frame

LIVESTOCK SECTOR DEVELOPMENT STRATEGY (LSDS) 2010-2015			
Narrative description of Goal, Purpose, Objectives, outputs and interventions	**OBJECTIVELY VERIFIABLE INDICATORS**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
OVERALL GOAL Contribute to overall GDP growth, national and household incomes and growth in export earnings	Real Livestock GDP growth from 2.6 to 9% per annum by 2015	• Annual economic Review reports • National Bureau of Statistics	Political will and economic stability sustained
PURPOSE: To stimulate and facilitate livestock sector growth and reduce rural poverty	Real Livestock GDP growth from 2.6 to 9% per annum by 2015	• Annual economic Review reports • National Bureau of Statistics	Political will and economic stability sustained
STRATEGIC OBJECTIVE: *Develop a competitive and more efficient livestock industry that contributes to the improvement of the livelihoods of all livestock keepers and the national economy while preserving the environment.*			
OUTPUTS AND INTERVENTIONS			
STRATEGIC AREA 1.0: Sustainable use of land, water, pastures and rangelands			
Output 1.1 Availability of grazing land for livestock improved			
INTERVENTIONS: 1.1.1 Finalise the Livestock Grazing land and feed resources ACT	Enacted Law by Parliament	MLFD Reports, Bunge Hansard	Political will and initiatives already being taken sustained
1.1.2 Establish co-ordination mechanisms for land use planning between different Ministries	Number of Districts with land use Co-odination committees	TAMISEMI Reports	Inter-Ministerial co-operation committee/task force available
1.1.3 Build the capacity of LGAs and sectoral ministries (MLHS, MAFS, MLFD) to undertake land use and resource management planning	Number of LGA trained and equipped to perform land use and resource use management planning	MLFD Reports	Inter-Ministerial co-operation committee/task force available
1.1.4 Facilitate preparation of management plans for areas set aside and gazetted for livestock use	Number of villages/ districts with areas gazetted for exclusive livestock use	MLFD Reports	Relevant Laws and Regulations in place
1.1.5 Strengthen capacity of LGA to undertake land surveys, demarcate and streamline allocation of land to be used by pastoralists, agro-pastoralists at affordable cost.	Number of communities allocated land for grazing	LGA Reports	Demand for individual and group ranch ownership by livestock keepers exists
1.1.6 Build the capacity of LGAs in identifying and allocating land to promote peri-urban livestock farming.	Number of LGA with peri-urban areas allocated land for livestock production activities.	LGA reports	LGAs able and willing o allocated land for livestock activities

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
1.1.7 Initiate participatory land use planning at village level in all Districts	Number of villages with proper land use plans	LGA Reports	LGAs able and willing to allocated land for livestock activities
1.1.8 Build the capacity and empower livestock communities to acquire and manage grazing land.	Number of villages with well managed grazing land	LGA Reports	Livestock farmers willing to change some cultural attitudes
Output 1.2 Tenure of land earmarked for livestock secured			
INTERVENTIONS: 1.2.1 Conduct sensitization programmes on the land Act no. 4 of 1999 and the Village Act No 5 of 1999; Land use Act 2007	Number of seminars held and number of grassroots participants	MLFD Reports	LGAs able and willing to allocated land for livestock activities
1.2.2 Enable villages to implement the Village Land Act. 5 of 1999 and Land use Act No. 6 of 2007,	Number of villages implementing the act	LGA records	LGAs able and willing to allocated land for livestock activities
1.2.3 Provide lease or title deeds to livestock farmers with land which has been surveyed and allocated to them.	Number of livestock keepers with title deeds	LGA records	Demand for land allocation by livestock farmers exists Livestock farmers willing to change some cultural attitudes.
1.3 Incursion into grazing land by pastoralists from neighbouring countries controlled			
1.3.1 Build, equip and operationalise border posts/livestock markets manned by law enforcers to check cross boarder livestock movement.	Number of border points/markets with law enforcement personnel.	MLFD Reports LGA Reports	Regional harmony and co-operation of law enforcing agents across borders exists.
1.3.2 Enforce existing laws regarding livestock entering the country without permits.	Number of cases of involving illegal import/export of live animals.	Police Reports LGA reports.	Regional harmony and co-operation of law enforcing agents across borders exists.
1.3.3 Strengthen immigration department at the boarders to curb incursion by pastoralists from neighbouring countries.	Number of cases of involving illegal import/export of live animals.	Police Reports LGA reports.	Immigration and Health inspectors at border points willing to co-operate.
1.3.4 Establish and operationalise the National Livestock Identification and traceability system.	Number of livestock registered in NLIT System	MLFD Reports LGA reports	Human and technical capacity to implement NLIT system available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Output 1.4: Infrastructure for livestock production and marketing improved			
1.4.1 Identify the infrastructure needs of pastoralists and agro-pastoralists (water dams, dips, livestock markets).	Number of documented requirements of various livestock infrastructure per district.	LGA reports	LGAs willing to support livestock development in respective areas
1.4.2 1.4.2 Construct/ rehabilitate water dams, water wells and conserve watershed and catchments areas.	• Number of water dams, dips, stock routes, livestock markets rehabilitated/ constructed • Number of livestock units produced/ marketed per district	LGA Reports	LGAs willing to support livestock development in respective areas
1.4.3 Establish rainwater harvesting schemes to improve water availability for livestock during dry season	Number villages with functioning chaco dams	LGA Reports	LGAs willing to support livestock development in respective areas
1.4.4 Develop guidelines for cost sharing and use of rehabilitated/developed livestock infrastructure	• Number of communities using guidelines on cost sharing basis • Number of communities with rehabilitated infrastructure.	LGA reports	LGAs willing to support livestock development in respective areas
1.4.5 Sensitize livestock keepers to contribute towards cost of rehabilitated/developed livestock infrastructure	Number of villages with operational cost sharing livestock services	LGA Reports	Livestock farmers willing to contribute towards cost of operation of rehabilitated facilities
1.4.6 Establish and enforce by-laws for the conservation of water catchment areas in all villages and LGAs	Number of villages with by-laws for water catchment areas	LGA Reports	Livestock farmers willing to change some cultural attitudes
1.4.7 Develop and institutionalize a system for early warning of droughts and floods and impending water and forage shortages for livestock	Mainstreamed LEWS in National Early warning and Disaster Risk Reduction	• MLFD reports • PMO Disaster unit Reports • Tanzania Meteorological Agency reports.	PMO and TMO willing to incorporate LEWS in NEWD Risk Reduction
OUTPUT 1.5: Sustainable use of pasture and rangeland resources promoted			
1.5.1 Carry out an inventory available grazing land and update the carrying capacity of various rangelands and devise guidelines for their use	Number of Districts with documented rangeland inventories and maps	• MLFD Reports • LGA Reports	Rangeland legislation in place

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
1.5.2 Promote and support pastoral and agro-pastoral farmers organizations.	Number of registered pastoral and agro-pastoral organizations	LGA Reports	Pastoralists willing to co-operate
1.5.3 Promote production and utilization of improved pastures.	Number of farms with improved pastures	LGA Reports	Improved pasture seeds available
1.5.4 Promote establishment of pasture seed farms including irrigated pasture seed production	• Number of farms established • Quantity of pasture seeds produced and distributed (sold).	• LGA Reports • MLFD	Private sector willing to invest in pasture production
1.5.5 Promote forage conservation in the form of hay, silage	• Number of farms making and using hay and silage • Volume of hay produced per district per year	LGA Reports	Production of hay and silage is cost effective
1.5.6 Conduct environmental impact assessment before animals are moved form area to another.	Number of LGA with EIA approved areas for livestock farming	LGA Reports	LGA willing and able to allocate resources towards EIA for livestock
STRATEGIC AREA 2.0: Public/Private sector investments and financing for improvement of livestock value chain productivity and efficiency (production, marketing, processing and consumption promotion)			
OUTPUT 2.1 Investment in and financing of livestock production, marketing processing and consumption promotion improved			
2.1.1 Provide conducive environment (taxes, regulations) for private sector investment in the Livestock industry	Number of private investors in the livestock industry	MLFD records	Private sector players available and demanding incentives
2.1.2 Provide government guarantee facility for private sector borrowing from commercial banks	Guarantee facility in place Number of private investors accessing guarantee facility	BOT Reports	Private investors willing to borrow
2.1.3 Use leasing Act, 2008 to promote investment in the industry through leasing with special emphasis on enabling privatised and new commercial dairy farms, ranches, meat factories and tanneries operate to capacity and competitively	Number of privatized livestock infrastructure operating efficiently	• BOT Reports • TIC Reports • MLFD Reports	Private businesses willing to invest in livestock enterprises
2.1.4 Support establishment of national investment bank to provide long-term loans for investments in livestock at affordable terms.	Number of livestock farmers accessing long term loans	MLFD reports	Political and favourable macro economic policies sustained

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.1.5 Promote and support establishment of grass-roots savings and credit associations for livestock stakeholders	Number of livestock SACCOS	MLFD reports	Farmers willing to join SACCOS
2.1.6 Facilitate establishment of linkage between micro-finance institutions and national investment bank	Number of SACCOS utilizing accessing financial credit	MLFD reports	Farmers willing to join SACCOS
2.1.7 Establish linkage between grass-root livestock stakeholders groups and micro-finance institutions	Number of CBO obtaining finance from MFIs	MLFD reports	Farmers willing to join SACCOS
2.1.8 Promote provision of credit in kind in the form of inputs for livestock development and livestock in-trust schemes (Heifer in Trust, Goat in trust schemes).	Number of farmers accessing HIT/GIT credits	LGA reports	Farmers willing to join farmers associations/groups
2.1.9 Promote investment in and use of livestock farm machinery	Number of farms using modern farm machinery and equipment	• LGA Reports • MLFD Reports	Private businesses willing to invest in livestock enterprises
2.1.10 Promote investment in and use of improved livestock breeds and husbandry practices that reduce risk of loss of animals due to diseases, predators, adverse weather	Growth in number of farmers keeping improved livestock breeds	MLFD Reports	• Private businesses willing to invest in livestock enterprises • Traditional livestock farmers willing to change production methods
2.1.11 Promote establishment of livestock insurance schemes and use of insured livestock as collateral.	Number of livestock farmers with insured livestock	LGA reports/ MLFD reports	Financial institutions willing to accept livestock as collateral
2.1.12 Secure funding (government) from international lending institutions to finance livestock development programme in key priority areas of LSDS.	Level of funding made available for Livestock public/Private sector investments	MLFD Reports	Political and favourable macro-economic policies sustained
Output 2.2Genetic potential of all livestock species improved			
2.2.1 Develop and adopt national livestock breeding policy	Enacted legislation	• MLFDReports • Parliamentary Hansard	Expertise on livestock genetics available
2.2.2 Carryout inventorisation, characterization, evaluation, and selection of all types of conventional and non-conventional livestock species	Type and number of livestock species inventorised and characterised	MLFD Reports	Expertise on animal breeding and genetics available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.2.3 Establish human resource requirements for AI services in each district and launch training programme to meet the manpower needs for effective AI field services delivery system	Number of LGAs with known requirements for AI services	LGA Reports	Farmers willing to improved the genetic potential of their traditional stock
2.2.4 Strengthen existing Livestock Multiplication units (LMUs)	Number of breeding stock produced per year	MLFD Reports	Government policy continues to support LMUs
2.2.5 Develop guidelines and incentives for importation of superior germplasm (semen, breeding animals)	Quantity and quality of imported semen	NAIC Reports	Farmers willing to improved the genetic potential of their traditional stock
2.2.6 Promote establishment of LMUs for dairy goats, sheep, water-buffaloes and camels.	Number of Multiplications units established	MLFD Reports	• Private sector willing to invest in breeding farms • Demand for the products exists
2.2.7 Encourage establishment of quality poultry breeding farms and hatchery facilities	• Number of new poultry breeding farms and hatcheries established • Number of day old chicks produced per annum	MLFD Reports	Government willing to provide incentives for Private sector to invest in parent stock production
2.2.8 Promote establishment of pig breeding farms	Number of farms established	MLFD Reports	Demand for pork exists
2.2.9 Strengthen the National Artificial Insemination Centre (NAIC) and establish additional small scale liquid Nitrogen plants and AI sub-centres in the Eastern, Southern, Southern Highlands and Central Zones.	Number of AI doses produced and distributed per year Number operation AI regional sub-centres	NAIC Reports	Farmers willing to improve the genetic potential of their traditional stock
2.2.10 Promote use of AI in the country by subsidizing the cost of delivery of AI field services in rural areas	• Number of semen doses produced and sold per year • Number of successful inseminations per year • Number of new small scale LN plants and AI sub-centres	NAIC Reports LGA Reports	Farmers willing to use AI service
2.2.11 Build and strengthen the capacity of LGAs and private service providers to deliver AI field services	• Number active AI field service providers • Number of successful inseminations per year	LGA Reports	Demand for AI services sufficient to attract private service providers

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.2.12 Encourage the formation of breeders societies for Beef cattle, Dairy cattle, dairy Goats, pigs and poultry,	Number and types registered Breeders Associations/ Societies	MLFD Reports Dairy Board and Meat Board Reports	Livestock producers willing to form breeders association
2.2.13 Initiate a national recording and selection scheme through Breeders Societies and establishment of national database/Registry	Number of animal under recoding schemes National Data base established	National Data base records	Livestock registration and Traceability Act in place National Breeding Act in place
2.2.14 Promote application of modern techniques for genetic improvement such as MOET (embryo transfer technique)	Number of superior cows recruited in MOET programmes Number of MOET calves produced per year	NAIC Reports MLFD Reports	Demand for superior producing stock exists in sufficient numbers to sustain cost of production
OUPUT 2.3: Animal husbandry practices for all livestock improved			
2.3.1 Promote production of quality animal feeds and utilization of locally available raw materials and feed additives.	Number of animal feed plants Volume of industrial feeds produced per year	MLFD Reports	Government puts in place animal feed quality assurance guidelines, inspection and control
2.3.2 Promote zero grazing and other environmentally friendly husbandry practices for smallholder dairy cattle and dairy goat farmers.	Number of farmers practicing zero grazing	LGA Reports	Farmers willing to adopt zero grazing production system
2.3.3 Train and sensitise farmers in extensive production systems on the use of proper stocking rates according to land carrying capacity	Number of farmers trained Number of farmers practicing improved pasture/rangeland management	LGA Reports	Measures to reduce calf deaths and livestock marketing system promoting off-take in place
2.3.4 Encourage private farmers to adopt the feedlot systems for fattening beef cattle of appropriate age before slaughter	Number of farms/ranches practicing feed lot system	LGA Reports	Marketing system based on livestock grades and weight in place
2.3.5 Promote animal welfare compliance	• Number of defaulters • Number of animal welfare audits	LGA Reports MLFD reports	Animal welfare legislation place
2.3.6 Promote the use of appropriate technologies such as draft animal power, solar energy and wind power in the livestock industry	• Number farmers using draft animal power • Number Farmers using solar power • Number of farmers using biogas	LGA Reports MLFD Reports	Technologies available and affordable

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.3.7 Promote investment in and use of livestock farm machinery and equipment	Number of farms using modern farm machinery and equipment.	LGA reports/ MLFD reports	Equipments available and affordable
OUTPUT 2.4: Grassroots Stakeholders Associations promoted and strengthened to improve marketing efficiency and lower transaction costs			
2.4.1 Provide support to national level livestock associations in establishing and strengthening associations of different livestock chains actors at village and district levels	Number of associations/groups established	National Associations reports LGA reports	Farmers willing to cooperate
2.4.2 Promote the establishment of meat and dairy processors and consumers associations at district and national levels.	Number of associations established	MLFD reports	Farmers willing to cooperate
2.4.3 Support training of groups/associations on organization and management skills	• Number of farmer groups receiving training • Number of farmers trained	LGA reports	Farmers willing to participate
2.4.4 Facilitate development of marketing models of different livestock products for smallholders' livestock producers groups.	Number of marketing associations	LGA reports	Farmer groups willing to bulk their products for marketing
OUTPUT 2.5: Value addition/processing promoted to increase value of livestock products and meet requirements of livestock markets			
2.5.1 Support private sector investments in manufacture of processing equipment and production of packaging materials for various livestock products.	Number of private firms producing processing equipment and packaging materials	LGA reports Ministry of Industry, trade and marketing reports	Conducive environment for investments exists
2.5.2 Provide a favourable regulatory and administrative environment for private sector investments in meat, milk, hides and skins, other livestock products (i.e. eggs) and by-products processing and marketing	Number of livestock products processing plants	LGA reports Ministry of Industry, trade and marketing reports	Political will to sustain favourable macro-economic policies available
2.5.3 Promote fattening of animals prior to sale to increase value	Number of high grade animals sold in livestock markets	MLFD reports	Feeds for fattening readily available and affordable
2.5.4 Promote grading of animals sold in primary and secondary livestock markets	Number of primary and secondary livestock markets practicing grading	MLFD reports	Strong and coercive farmers demand for grade based livestock marketing systems exists

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.5.5 Design and promote establishment of standard abattoirs for cattle, sheep and goats and separate modern slaughtering facilities for pigs, poultry for rural areas, district centres	Number of standard abattoirs in use Number of modern slaughter facilities for pigs and for poultry	LGA reports	Regulations requiring slaughter of animals in approved premises in place and enforced
2.5.6 Promote small scale processing especially in remote rural areas where there are no large scale processors	Number of cottage industries in rural areas	LGA reports	Source of power available
OUTPUT 2.6: Access to livestock products markets for smallholder livestock producers improved			
2.6.1 Facilitate establishment of contractual business linkages between livestock producers/processors groups with buyers of livestock and livestock products	Number of farmer groups/associations with business contracts	LGA reports	Buyers and farmers association are willing to respect conditions of contracts
2.6.2 Support training of livestock producers groups/associations on group marketing, business skills and product handling (packaging, labeling)	• Number of farmer groups/association received training • Number of farmers trained	LGA reports	Farmers are willing to participate
2.6.3 Rehabilitate livestock holding grounds, watering points, stock routes and livestock markets, slaughter slabs and abattoirs	Number of functional and utilized facilities	LGA reports	LGA willing to develop livestock industry in respective areas
2.6.4 Promote establishment of milk collection and cooling centres in rural areas	Number milk collection and cooling centes	LGA reports	Power for cooling available and affordable
OUTPUT 2.7: Quality of livestock to meet standards of niche export markets ensured			
INTERVENTION			
2.7.1 Establish livestock disease free zones to promote export of livestock and livestock products	Number of farms/ranches with status of disease free	MLFD reports	Willingness to invest in improved livestock production
2.7.2 Develop and support implementation of Identification Registration and Traceability system	• IRT System in place • Number of registered farms • Number of registered animals	MLFD Reports	IRT Act in Place

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.7.3 Formulate and enact legislation to provide for livestock identification, registration and traceability	Legislations enacted	MLFD reports	Political will exists
2.7.4 Establish a national livestock registry and traceability data bank	Registry established	MLFD reports	Political will exists
2.7.5 Establish and strengthen quality and food safety inspectorate services for meat, milk and hides and skins.	Number of inspectors of livestock and livestock products	LGA reports MLFD repots	Government willing to improve livestock sector
OUTPUT 2.8. Local consumption of livestock products promoted			
2.8.1 Carryout regular consumer promotion and sensitization campaigns for dairy, meat and eggs	Number of campaigns	MLFD Reports Board reports	Stakeholders willing participate
2.8.2 Regulate the importation of meat and meat products, milk and milk products, eggs and other livestock products	Volume of imports	Board Reports TRA Reports	Requisite regulatory instruments in-place Adequate inspectorate staff in place
2.8.3 Establish school milk feeding programme to expand market for locally processed milk.	Number of children involved in SMFP	Board Reports MLFD reports	Various ministries, and TAMISEMI willing to participate
STRATEGIC AREA 3.0: Control of livestock diseases and public health and those of Public Health Importance (Zoonoses)			
OUTPUT 3.1; Livestock diseases and Zoonoses controlled to safe guard public health			
INTERVENTION:			
3.1.1 Make control of transboundary animal diseases a public good and government should be responsible for their control.	Incidences of transboundary diseases	MLFD reports	Regional co-operation in transboundary animal diseases in-place
3.1.2 Establish mechanisms for joint co-ordination of control of zoonotic diseases between the MLFD and MoH	• Agreements between MLFD, MoH and MNRT • On Incidences of zoonoses	MLFD reports LGA MoH Reports MNRT Reports	Inter-ministerial committee on control of epizootics in place
3.1.3 Establish mechanism for Public and private sectors sharing of responsibility to control non-transboundary infectious diseases	Developed guidelines	MLFD reports	Inter-Ministerial committee on control of Zoonoses in place

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
3.1.4 Establish a mechanism (e.g., fund) for subsidizing activities for control of tick and tick borne diseases by LGAs including ECF immunisation.	• Reduced Cost of dipping • Number of ECF immunized animals • Number of immersions • Reduced TBD mortalities	MLFD reports LGA and NGO reports	Control of TBD accepted as a shared public-private good in the short to medium term Continued allocation of funds for acaricide subsidy programme by govt.
	• Improved quality of hides and skins and absence of tick bite lesions • Acaricide Subsidy Funds in Budget		
3.1.5 `Ensure effective control of other ectoparasite	Reduced effect and losses attributed to other ectoparasites such as Mange mites, and other biting flies.	Survey reports MLFD, LGAs reports	Continued interest by farmers in controlling other ectoparasites
3.1.6 Establish Control of Helminths and helmithosis	• Formulations of strategies for the control of different classes of helminths according to epidemiological patterns • Number of ecological surveys conducted • Reduced mortalities that are attributed to Helminths	Survey reports MLFD, LGAs and NGO's reports	Interest by farmers to control helminths Availability of affordable and effective antihelmintics
3.1.7 Implement eradication of Tsetse and Trypanosomosis according to Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC)	• Tsetse and trypanosomosis control strategy formulated • Tsetse and trypanosomosis control and eradication regulations formulated • Number of livestock community trainings on tsetse control techniques. • Number of tsetse distribution surveys • Number of harmonization and stakeholders meetings	Reports Up todate Tsetse and Trypanosomosis distribution map and information	• Willingness of livestock communities and Private Sectors to participate in eradication of Tsetse and trypanosomosis • Availability of funds

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
3.1.8 Enhance the capacity of the veterinary investigation laboratory system to conduct disease surveillance in the country	• Number of operation VICs • Surveillance report • Improve data handling and analytical capacity	MLFD reports	Disease surveillance, monitoring remains public good as per OIE guidelines
3.1.9 Enable livestock research institutions to investigate the role of Indigenous Technical Knowledge (ITK) in ethno-veterinary medicine	Number of research in ITK	MLFD reports	Veterinarians competent in Ethno-botany available
3.1.10 Make available vaccines for major epizootic diseases throughout the country in times of outbreaks	• Number of animals vaccinated • Reports on the type and extent of spread of the different disease pathogens/strains in the country	LGA reports	Disease surveillance, monitoring remains public good as per OIE guidelines
3.1.11 Establish a disease early warning system and emergence preparedness unit to deal with epizootics of diseases of major economic and public health importance	• Unit established • Diagnosis capacity in place • Timely Reports • Improved information flow • Operational Contingency plans for TADs and TBD • VIC outreach activity reports	MLFD reports	Disease surveillance, monitoring remains public good as per OIE guidelines
3.1.12 Harmonize national and international policies on transboundary animal diseases control and eradication	Regional agreements and protocols on Transboundary disease control	MLFD reports	Regional co-operation in transboundary animal diseases in-place
3.1.13 Develop and enforce guidelines and code of conduct for public, semi private and private veterinary services practitioners and paravets.	Guidelines on Services provision	VCT reports MLFD Reports	Government support and incentives for vet practioners exists
3.1.14 Develop and enforce guidelines for veterinary information and diseases outbreak reporting systems including obligations of private practitioners from village to national levels via VICs and DLDO offices throughout the country.	Guidelines on veterinary services information and reporting procedures	VCT Reports	Government support and incentives for vet practitioners exists

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
OUTPUT 3.2 Mandatory Vaccinations and disease surveillance programmes carried out			
INTERVENTIONS			
3.2.1 Put in place mandatory annual vaccinations programmes for diseases of economic importance and those affecting human health (zoonoses)	Number of animals vaccinated	MLFD reports	Disease surveillance, monitoring and control remains public good as per OIE guidelines
3.2.2 LGA establish by-laws to govern mandatory annual vaccinations	Number of LGAs with bylaws	LGA reports	Disease surveillance, monitoring and control remains public good as per OIE guidelines
3.2.3 Carry out regular inspection of veterinary drugs in all LGAs	Number of inspections carried out	VCT Reports LGA reports	Veterinary council has enough personnel
OUTPUT 3.3 Provision of affordable and quality veterinary drugs and vaccines enhanced			
INTERVENTION			
3.3.1 Put in place a waiver on VAT and excise duty for veterinary pharmaceuticals and biological as is the case for agricultural inputs	Level of taxation on veterinary drugs	MLFD reports	Disease surveillance, monitoring and control remains public good as per OIE guidelines
3.3.2. Government facilitate research institution dealing with animal health research and biotechnology to develop better vaccines	Number of researches in vaccine biotechnology	MLFD reports	Disease surveillance, monitoring and control remains public good as per OIE guidelines
3.3.3 Government to build capacity of the private to import or manufacture appropriate vaccines in country	Number of private firms manufacturing vet drugs and vaccines locally	MLFD reports	Incentives to encourage private sector investment in livestock diseases vaccine production in place
3.3.4 Enable the Central Veterinary laboratory to have capacity to produce vaccines for the important epizootic diseases.	Number of vaccine vials produced and used	MLFD reports	Disease surveillance, monitoring and control remains public good as per OIE guidelines
3.3.5 Support the private sector to establish veterinary drug stores for the upcountry zones	Number of drugs stores/shops established by private sector in regions	LGA reports	Incentives for private sector in place
OUTPUT 3.4 : Delivery of animal health services at grass root level enhanced			
INTERVENTION			
3.4.1 Government to create a pool of animal health workers by training staff at certificate, diploma, degree levels.	Number of veterinarians trained	MLFD reports	School leavers attracted to join veterinary profession

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
3.4.2 Local Government to be enabled to employ qualified animal health workers at district, division, ward to village levels	Number of veterinarian extension staff deployed	LGA reports	Government plans to provide extension staff at ward and village level sustained
3.4.3 Local Government provide resources towards in-service training and continuous professional development for the existing animal health workers.	Number of employees receiving in-service training	LGA reports	Government plans to provide extension staff at ward and village level sustained
OUTPUT 3.5 : Enforcement of the existing laws and regulations for control of animal diseases enhanced			
INTERVENTIONS			
3.5.1 Create public awareness on existing laws and regulations governing animal health issues	Number of people ware of regulations	MLFD reports	Adequate LGA staff available
3.5.2 Establish mechanisms for enforcement of the existing laws and regulations at LGA and Central government	Number of operational laws and regulations	MLFD reports	Adequate LGA staff available
3.5 3 Enable law enforcers of current legal instruments providing for animal health and public health issues to carry out their duties effectively.	Number of operational laws and regulations	MLFD reports	Adequate LGA staff available
OUTPUT 3.6 Livestock dipping system improved			
INTERVENTIONS			
3.6.1 Carry out a thorough review of dipping as a strategy for control of Ticks and TBDs		MLFD reports	Availability of funds
3.6.2 Make LGA, through the livestock development fund take responsibility of construction , rehabilitation and operation and supervision of dips for wards without dip tanks	Number of operational dips	MLFD reports	Government adopts policy of ploughing g back Livestock development funds to the livestock sector
3.6.3 Educate livestock farmers on importance of dipping	• Number of farmers dipping their animals regularly • Number of animals dipped	MLFD reports	Adequate LGA staff available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
3.6.4 Establish a system of proper supervision of Ward/Village Dip tank committee by ward animal health workers	Number of villages/wards with operation committees	MLFD reports	Adequate LGA staff available
3.6.5 Enforce compulsory dipping by enacting ward or village by-laws	Number of farmers dipping their animals regularly	LGA reports	Village level leadership willing to enforce by-laws
OUTOUT 3.7 Livestock farmers skills and knowledge and control improved			
3.7.1 Strengthen livestock extension services at grass root levels	Number of framers receiving extension advices		Adequate LGA extension staff available at ward and village level
3.7.2 LGA establish knowledge/skill gaps and training needs for the livestock farmers in the villages	Training curricular developed	MLFD reports	Farmers willing to be trained
3.7.3 LGA establish divisional livestock farmers training centres	Number of divisional livestock centres	LGA reports	Farmers demand for new skills exists
3.7.4 Conduct farmer field schools for livestock activities at every division or ward on regular basis	Number of farmer filed schools	LGA reports	Farmers demand for new skills exists
OUTPUT 3.8 : **Control of incursion of livestock from neighbouring countries enhanced**			
INTERVENTION			
3.8.1 Enable government authorities responsible for zoosanitary inspection of imported animals to carry out its duties in all LGAs	Number of border posts with zoosanitary inspectors	LGA Reports	Adequate LGA extension staff available at ward and village level
3.8.2 Enable law enforcers to take their full responsibility in ensuring stern measures are taken against culprits	Number of cases prosecuted	LGA Reports	Adequate LGA extension staff available at ward and village level
3.8.3 Harmonise national with regional policies on zoosanitary inspectorate services (Sanitary and Phytosanitary -SPS).	Number of cases prosecuted	LGA Reports	Adequate LGA extension staff available at ward and village level
STRATEGIC AREA 4.0: Livestock Development Services (Research, training, information, extension Services, capacity building, farmer empowerment and related infrastructure)			
OUTPUT 4.1 Livestock training improved			
INTERVENTIONS			
4.1.1 Review and update all curricula for livestock training to be responsive to client needs	No. of developed curricula	LTI Reports MLFD reports	Stakeholders make their needs known to Government

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4.1.2 Build capacity of LITIs to conform to NACTE requirement	Number of LITI meeting NACTE requirements	MLFD reports	NACTE embraces LITIS in its regulatory role
4.1.3 Retool livestock tutors through short and long training courses	• Number short course carried out • Number of Tutors trained	MLFD Reports LITI Reports	Qualified tutors available
4.1.4 Rehabilitate and equip livestock training institutes	Number of LITIs rehabilitated and equipped	MLFD reports	NACTE's requirements in place
4.1.5 Promote private sector investment in livestock training.	• Number of private sector investments in livestock training • Numbers of privately sponsored candidates trained	MLFD Reports	Demand for trained livestock staff exists
4.1.6 Strengthen research – training – extension - farmer linkages.	Number of technologies adopted by farmers	MLFD reports Research institutes reports	Farmers willing to adopt new methods
OUTOUT 4.2 Livestock farmers skills and knowledge improved			
4.2.1 Determine training needs for livestock producers and other stakeholders in the livestock value chains	Number of training needs assessment carried out	LITI Reports	Competent staff available
4.2.2 Develop demand driven training programmes for livestock producers and other stakeholders in the livestock value chains	• Number of new demand driven curses developed • Number and type of stakeholders trained	LITI Reports	Farmers demanding to be trained exist
4.2.3 LGA establish divisional livestock farmers training centres	Number of divisional livestock centres	LGA reports	Farmers demand for new skills exists
4.2.4 Support establishment of farmer field schools (FFS) to impart technical skills in various aspects of livestock production	Number Farmer field schools established	LGA Reports	Farmers demanding to be trained exist
OUTPUT 4.3 Livestock research strengthened			
INTERVENTIONS			
4.3.1 Establish National Livestock Research Fund (NLRF)	Amount of funds channeled through the NLRF	MLFD Reports	A pool of qualified research staff exists
4.3.2 Promote participation of the private sector in funding livestock research through NLRF	Number of researches funded/supported by the private sector		Private sector actors willing to collaborate with govt.

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4.3.3 Strengthen research infrastructure and provide facilities for livestock research in livestock research institutes.	Number of research institutes and centres equipped with facilities for livestock research	MLFD Reports	Training institutes manned by competent staff
4.3.4 Support training of researchers in disciplines with inadequate staff	Number of staff trained in rare strategic disciplines in animal breeding, animal biotechnology	MLFD Reports	Qualified staff available
4.3.5 Establish a system of remuneration to motivate and retain trained livestock researchers.	Number highly trained staff retained per annum	MLD F Reports	Qualified staff available
4.3.6 Promote research to generate new knowledge and technologies which respond to client needs	Number of new technologies generated and adopted by farmers per annum	MLFD and LGA reports	Qualified staff available
4.3.7 Promote participatory action research with stakeholders in livestock value chains	Number of participatory action research carried out per annum	MLFD Reports	Qualified staff available
4.3.8 Strengthen coordination and collaboration among stakeholders in livestock research including private sector.	Number of private-public sector collaboration	MLFD Reports	Stakeholders willing to co-operate
4.3.9 Build capacity of researchers in packaging of technologies and information generated from research for use by stakeholders	Number of researchers trained	MLFD Reports	Trainable/ Qualified staff available
OUTPUT 4.4 Livestock extension services strengthened			
INTERVENTIONS			
4.4.1 Improve incentives for extension staff working in remote areas	Type and number of incentives Number of extension staff willing to work in remote rural areas	LGA Reports	Qualified staff available
4.4.2 Strengthen capacity of livestock extension services by deploying adequate qualified extension staff at district, ward and village levels	Number of extension staff deployed	MLFD Reports	Appropriately trained staff available
4.4.3 Rehabilitate the Rural Livestock Centres	Number of functional rural livestock centres (e.g. Kagera)	LGA reports	Rural centres available and needed by farmers

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4.4.4 Improve efficiency and effectiveness of extension services through greater participation of stakeholder in all stages of technology development.	Number of technologies developed and in use	MLFD Reports	Adequate competent staff available
4.4.5 Strengthen Research – Extension - Farmer linkages.	• Number of technologies adopted by farmers • Number of farmers using new technologies	LGA Reports	Trained and equipped Researchers and extension staff available
4.4.6 Strengthen coordination and collaboration amongst stakeholders in livestock extension services.	Number of joint activities conducted	LGA reports	Stakeholder organizations exist
4.4.7 Promote private sector participation in provision of livestock extension services.	Number of private sector service providers	LGA reports	Adequate demand by willing to pay for services farmers exists
4.4.8 Promote use of participatory approaches and methodologies in delivery of livestock extension service.	Number of farmers using improved technologies	LGA reports	Trained and equipped Researchers and extension staff available
4.4.9 Promote information sharing on good practices in livestock advisory/extension services and lessons learned.	Number of farmers using improved technologies	LGA Reports	Trained and equipped Researchers and extension staff available
4.4.10 Support establishment of Farmers Field Schools (FFS) to enhance dissemination of livestock technologies.	Number of operation FFS for livestock	LGA reports	Trained and equipped Researchers and extension staff available
4.4.11Promote market-oriented, farmer-led and demand-driven extension/advisory service.	Number of private service providers active in the livestock industry	LGA reports	Adequate demand by willing to pay for services farmers exists
OUTPUT4.5: Livestock information service strengthened			
INTERVENTIONS			
4.5.1 Establish a comprehensive livestock management information system.	Functioning LIS	MLFD reports	Demand for livestock information exists
4.5.2 Strengthen collection, management, harmonization and dissemination of data and information system.	Data collected analysed and published	MLFD Reports	Trained staff available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4.5.3 Build capacity of personnel on livestock data and information system.	Number of personnel trained	MLFD reports	Qualified/trainable staff available
4.5.4 Facilitate reliable and updated livestock census and database.	Census carried out	MLFD reports	National livestock registry and traceability system in place
4.5.5 Promote communication between the ministry and the public	Number of publications	MLFD reports	Qualified personnel available
OUTPUT 4.6 Livestock farmers empowered			
INTERVENTIONS			
4.6.1 LGAs and NGOs Facilitate formation of livestock farmers organisations at grassroots level	Number of livestock farmers organizations at district level	Stakeholder organization records	Farmers willing to co-operate Government support and incentives available
4.6.2 LGAs and NGOs Carry out technology dissemination and on-farm demonstrations	Number of villages with on farm demonstration units	MLFD reports LGA reports	Government support and incentives available
4.6.3 Streamline and ease registration procedures for farmers organisations	Number of registered farmers organizations	MLFD reports LGA reports	Government support and incentives available
4.6.4 Build Financial management capacity of grassroots organisations	Number of organizations able to manage their finances properly	MLFD reports	Government support and incentives available
STRATEGIC AREA 5.0: Governance, regulatory and institutional framework			
OUTPUT 5.1 Co-ordination of national and regional secretariats improved			
INTERVENTIONS			
5.1.1 Mainstream LSDS into existing national level, inter-ministerial level co-ordination committee for ASDP	Presence of Inter-ministerial committee	MLFD Reports	Political will to cooperate exists
5.1.2 Mainstream LSDS coordination with development partners into existing Agriculture Sector Working Group	Inclusion of LSDS in ASWG agenda	MLFD Reports TAMISEMI Reports	Political will and Government support exists
OUTPUT 5.2 Ministry responsible for livestock development strengthened			
5.2.1 Expand the human resource base of the Ministry to enable it face up to the challenges of spearheading the development of the livestock industry	Number and quality of staff in MLFD and related institutions	MLFD reports	Qualified personnel available
5.2.2 Increase the budgetary allocation to the Ministry in order to implement policies espoused in the Livestock Policy 2006	Increase in budgetary allocation to the MLFD	MLFD reports	Political will to promote the livestock sector exists

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
OUTPUT 5.3: Information flow between Ministry and the grass root livestock service providers improved			
5.3.1 Deploy additional staff at Regional secretariats and provide the necessary facilitation to enable them provide effective support to the LGAs	Number of additional staff	TAMISEMI reports	Qualified staff available
5.3.2 Improve communication and information flow between the Regional Secretariats and the Ministry of Livestock and Fisheries Development	Number of RS delivering information to MLFD	MLFD reports	Qualified staff available
5.3.3 Train government and LGA staff on how to input and retrieve data from national livestock data base	Number of staff trained	TAMISEMI Records	Qualified staff available
5.3.4 Develop performance standards and framework for assessing performance of service providers at the LGA level	Number and type of performance guidelines developed	TAMISEMI Records	Service providers available and providing services
5.3.5 Promote record keeping by all livestock value chain actors (farmers, livestock traders and processors)	Number of stakeholder keeping records	MLFD records	Incentives for keeping records in place
5.3.6 Government expedite establishment of Livestock identification and Traceability system.	Number of districts using LITS	MLFD records	Political will available
OUTPUT 5.4 Engagement of LGAs in livestock development activities improved			
INTERVENTIONS			
5.4.1 Establish livestock subject matter specialists teams in every LGA under the DALDO or DLDO	Number of LGAs with livestock subject matter specialists team	TAMISEMI records MLFD records	Qualified staff available
5.4.2 Deploy adequate livestock extension staff at village and ward levels	Number of livestock extension staff at ward and village level	TAMISEMI Records	Qualified staff available
5.4.3 Capacity building of Livestock extension staff in strategic planning and project management; Land use planning and range; Livestock legislations, regulations, standards , compliance monitoring, supervision and evaluation.	Number of livestock extension staff trained in strategic planning	LGA Records	Qualified staff available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
5.4.4 Carry out regular livestock extension service delivery and performance monitoring and evaluation and reporting to Regional secretariats.	Number of M&E tasks carried out	TAMISEMI Records	Adequate and qualified staff available
OUTPUT 5.5: Livestock products Boards strengthened			
INTERVENTIONS			
5.5.1 Employ core staff in the VCT, TDB, TMB	Number of staff employed in institutions under MLFD	Institutional records	Budgetary allocations available Qualified personnel available
5.5.2 Provide budgetary support to Boards	Level of budgetary support	MLFD Reports Board reports	Political will exists
5.5.3 Establish stakeholders' registration and reporting mechanism under various Livestock Boards (TDB, TMB TVC etc).	Number of stakeholders registered	Institutional records	Requisite regulatory instruments in place
5.5.4 Mainstream livestock Boards in Ministry's MTEF budgets	Level of government subventions to livestock Boards/Institutions	MLFD records	Political will and government support available
5.5.5 Develop mechanisms and capacity of Boards to work with LGAs through authorized officers	Number of authorized officers appointed	Institutional records	Requisite regulatory instruments in place
5.5.6 Build capacity of Livestock Boards and farmers organization and institutional building, industry promotion and advocacy	Number of persons and institutions trained	Institutional records	Qualified staff employed
OUTPUT 5.6 Livestock public institutions strengthened			
INTERVENTIONS			
5.6.1 Strengthen the human and financial capacity of NAIC, CVL, VICs, NARCO and the National Research Institute to execute their mandates.	Number of activities successfully carried out	Institutional records	Political will available
OUTPUT 5.7 Various livestock laws and regulations rationalised and harmonised			
INTERVENTIONS			
5.7.1 **Establish** Inter-ministerial meetings to harmonised issues which cause conflict in implementation of laws governing the two sectors	Number of meetings held	MLFD Records	Ministries willing to co-operate
5.7.2 Identify and Review outdates laws and regulations	Number of outdated laws identified and reviewed	MLFD records	Competent staff available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
5.7.3 Identify and Rationalise and harmonise multiple laws and regulations impacting on the livestock industry	Number of laws rationalized/ harmonized	MLFD Reports	Competent staff available
5.7.4 Rationalise regulatory bodies involved in regulation of the livestock sector to improve business environment	Reduction in number of days in starting business Reduction in cost of regulation for the private sector	MLFD reports Stakeholder bodies Reports Board Reports	Stakeholders demand and advocate strongly for improvement of business environment
OUTPUT 5.8. Use of qualified public and private service providers at the grass root level (villages and wards) promoted			
5.8.1 Create a pool of livestock extension workers by training staff at certificate, diploma, degree levels	Number of new staff trained at certificate and diploma levels	LGA Reports	Political will and support by government sustained
5.8.2 Enable Local Government to employ qualified livestock extension workers at district, division, ward and village levels	Number of qualified livestock technicians and extension staff employed by LGAS	LGA Reports	Political will and support by government sustained
5.8.3 Provide resources towards in-service training and continuous professional development for the existing livestock extension workers	Number of staff undertaking retraining and continuous training courses	LGA Reports	Political will and support by government sustained
5.8.4 Establish mechanisms for accountability of private service providers to LGAs	Guidelines for accountability of private service provides to LGA (Reporting,)	LGA Reports	Political will and support by government sustained
5.8.5 Provide motivation for service providers working in difficult (remote) areas	Incentive packages for extension staff	LGA reports	Political will and support by government available
STRATEGIC AREA 6.0: Cross cutting and cross sectoral issues			
OUTPUT 6.1 Gender mainstreamed in all livestock development activities			
INTERVENTIONS			
6.1.1 Promote and strengthen capacity for gender mainstreaming in the livestock sector.	Number of personnel trained in gender issues	Institutional records	Both men and women qualified and willing to serve in the livestock industry
6.1.2 Promote development of gender specific technologies in livestock sector.	Number of men and women farmers accessing land, credit etc	Institutional records	Both men and women willing to participate in growing the livestock industry

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
6.1.3 Establish gender specific programmes for gender empowerment and access to land, credit technology and markets	Number of men and women farmers accessing land, credit etc	Number of men and women farmers accessing land, credit etc	Both men and women willing to participate in growing the livestock industry
OUTPUT6.2 HIV/AIDS, Malaria and Tuberculosis			
INTERVENTIONS			
6.2.1 Promote staff awareness on HIV/AIDS.	Decrease in rate of new infections	Institutional records	Peer educators available
6.2.2 Promote Voluntary Counselling and Testing services.	Number of personnel using VCT	Institutional records	VCT services available and functional
6.2.3 Strengthen care and support to employees living with HIV/AIDS.	Number of PLWA supported	Institutional records	Adequately sensitized leadership available
6.2.4 Promote HIV/AIDS management capacity.	Number of personnel trained to be peer educators	Institutional records	Adequately sensitized leadership available
6.2.5 Promote collaboration with other stakeholders in the fight against HIV/AIDS and related opportunistic diseases.	Number of collaborating institutions	Institutional records	Adequately sensitized leadership available
OUTPUT 6.3 Environmental conservation enhanced			
INTERVENTIONS			
6.3.1 Promote environmental conservation in livestock industry.	Number of farms adopting conservation measures	MLFD Records	Farmers adequately sensitized/trained
6.3.2 Strengthen capacity of LGA on environmental conservation.	Number of personnel trained on environmental conservation	LGA records	Qualified staff available
6.3.3 Promote proper land use planning in livestock production for environmental conservation.	Number of villages with land use plans that accommodate livestock	LGA Records	Qualified staff available
6.3.4 Promote indigenous technical knowledge and conventional technologies for sustainable livestock production and environmental conservation.	Number of farmers applying ITK	MLFD/LGA Records	Staff knowledgeable in ITK available
6.3.5 Enforce laws and regulations to control movement of large livestock herds	Decrease in number of livestock migration	MLFD/LGA records	Requisite regulatory instruments available

Narrative description of Goal, Purpose, Objectives, outputs and interventions	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
6.3.6 Promote de-stocking and encourage pasture establishment	Level of annual offtake from the traditional sector	MLFD Records	Incentives that encourage destocking available
6.3.7 Promote rehabilitation programmes on degraded grazing land.	Hectares of previously degraded land rehabilitated	LGA/MLFD records	Staff adequately trained in environmental restoration
6.3.8 Promote integrated land resource use plans.	Number of villages with integrated land use plans	Ministry of Land Records	Staff trained in land use planning

Appendix 1: Livestock Population Distribution in Tanzania (2009/2010)

REGION	CATTLE	GOATS	SHEEP	PIGS	POULTRY
Arusha	1,688,096	818,082	795,398	12,289	950,374
Dar es Salaam	33,096	76,147	7,557	19,425	531,203
Dodoma	1,162,669	713,867	172,539	64,669	1,884,582
Iringa	501,834	371,249	99,621	285,770	2,319,362
Kagera	1,012,798	893,671	64,972	240,031	938,170
Kigoma	513,330	494,000	43,482	35,422	801,069
Kilimanjaro	553,268	630,844	270,185	237,586	1,615,226
Lindi	56,675	100,860	8,065	8,130	1,363,936
Manyara	1,263,436	1,000,300	429,206	81,664	694,064
Mara	1,234,177	684,660	197,277	3,759	1,666,251
Mbeya	1,061,400	364,012	70,423	409,408	2,631,437
Morogoro	655,064	305,579	58,235	80,982	2,238,996
Mtwara	20,451	263,787	22,168	10,458	719,861
Mwanza	1,916,927	909,647	168,637	1,016	2,995,983
Coast	187,772	70,957	7,976	7,088	1,493,873
Rukwa	588,186	261,426	13,146	87,097	1,191,900
Ruvuma	165,057	938,838	59,737	264,652	1,595,297
Shinyanga	2,966,172	1,258,719	459,372	12,695	3,122,539
Singida	1,411,360	2,162,456	341,762	3,312	1,697,764
Tabora	1,784,166	1,047,637	227,115	10,465	2,773,813
Tanga	433,970	333,262	83,127	9,244	1,848,564
Total	**19,209,904**	**13,700,000**	**3,600,000**	**1,885,162**	**35,074,264**

Source: MLFD

Appendix 2: Privatization of Ranches under NARCO

S/N	Name of Ranch	Total Area (Ha)	Area under Main Ranches(Ha)	Area under Satellite Ranches (Ha)	No. of Satellite Ranches	No. of Livestock under NARCO, June 2009	Number of cattle under Satelite Ranches	Number of Goats and Sheep under Satellite Ranches
1	Mkata	62,530	19,446	43,084	11	2,453	3,210	873
2	Usangu	43,727	0	43,727	16	0	2,206	677
3	West Kilimanjaro	30,364	19,910	10,354	10	955	0	0
4	Uvinza	56,175	0	56,175	21	0	13,702	0
5	Mzeri	41,246	21,236	20,010	9	3,696	3,304	3,411
6	Kalambo	64,650	23,588	41,062	13	1,772	6,220	593
7	Misenyi	60,851	23,998	36,853	21	7,545	2,678	253
8	Kitengule	41,700	0	41,700	9	0	4,877	322
9	Kikulula Complex (Kikulula, Mabale, Kagoma	76,940	30,752	46,188	22	6,726	12,104	1,053
10	Kongwa	38,000	38,000	0	0	7,935	0	0
11	Ruvu	43,000	43,000	0	0	3,777	0	0
12	Dakawa	49,981	0	49,981	2	0		
Total		**609,164**	**219,930**	**389,134**	**134**	**34,859**	**48,301**	**7,182**

Source: MLFD

Appendix 3: Hatcheries in Tanzania

S/N	Region	Hatchery	Capacity (No of Chicks per 3 weeks)
1	Dar es Salaam	Amadori/Polo Italia	160,000
		Interchick	260,000
		Twiga Hatcheries	120,000
		Ideal chicks	120,000
2	Coast	Kibaha Education centre	120,000
		Ruvu JKT	30,000
		Kiluvya Poultry Products	30,000
		Mkuza Chicks	360,000
3	Arusha	Tanzania Popultry farms	180,000
4	Kilimanjaro	Kilacha	30,000
		Kibo Hatcheries	60,000
5	Iringa	CEFA/Matembwe Njombe	30,000
		Total	**1,500,000**

Source: MLFD

Appendix 4: Meat Processing Plants

S/N	Processing Plants	Region
1	Mekela Foods	
2	Tanzania Meat Company (TANMeat)	Dare es salaam
3	Arusha Meat	
4	Happy Sausage	
5	Meat King	ARUSHA
6	CEFA/Boma la Ngo'mbe Village Company	Iringa
7	Peramiho Mission	Ruvuma
8	Sumbawanga Agricultural and Animal Feeds Industries (SAAFI) -Meat processing	Rukwa
9	Tanzania Pride Meat	Morogoro
10	Best Beef – Mlandizi	Coast

Source: MLFD

Appendix 5: Milk Processing Plants in Tanzania

S/N	Region	Processing Plants	Capacity (litres per day)	Status	Current Production (litres per day)	% Capacity Utilisation
1	Dar es Salaam	Azam Dairy	3,000	Operating	2,000	67
		Tommy Dairy	15,000	Not operating	0	0
		Tan Dairies	15,000	Operating	6,000	40
2	Tanga	Tanga Fresh Ltd	40,000	Operating	30,000	75
		Ammy Brothers Ltd	2,000	Operating	500	25
3	Arusha	Brookside (T) Ltd	45,000	Not operating	0	0
		International Dairy Products	5,000	Operating	3,000	60
		Mountain Green Dairy	1,500	Operating	500	33
		Arusha Dairy Company	5,000	Operating	2,400	48
		Kijimo Dairy Cooperative	1,000	Operating	300	30
		Longido (Engiteng)	500	Operating	300	60
4	Manyara	Terrat (Engiteng)	500	Operating	250	50
		Orkesumet (Engiteng)	500	Operating	400	80
		Naberera (Engiteng)	1,000	Operating	450	45
5	Kilimanjaro	Nronga Women	3,500	Operating	930	27
		West Kilimamnjaro	1,000	Operating	300	30
		Mboreni Women	1,000	Operating	300	30
		Marukeni	1,000	Operating	450	45
		Ng'uni Women	1,000	Operating	350	35
		Kalali Women	1,000	Operating	550	55
		Same (Engiteng)	500	Operating	300	60
		Fukeni Mini Dairies	3,000	Operating	800	27
		Kondiki Small Scale Dairy	1,200	Operating	600	50
6	Mara	Musoma Dairy	120,000	Operating	30,000	25
		Utegi Plant (Ex TDL)	45,000	Not operating	0	0
		Makilagi SSDU	1,500	Operating	1000	67
		Baraki Sisters	3,000	Operating	2,100	70
		Mara Milk	15,000	Operating	6,000	40
7	Mwanza	Mwanza Mini Dairy	3,000	Operating	1,000	33
8	Kagera	Kagera Milk (KADEFA)	3,000	Operating	400	13
		Kyaka Milk Plant	1,000	Operating	450	45

S/N	Region	Processing Plants	Capacity (litres per day)	Status	Current Production (litres per day)	% Capacity Utilisation
		Del Food	1,000	Operating	300	30
		Bukoba Market Milk Bar	500	Operating	300	60
		Bukoba Milk Bar - Soko Kuu	500	Operating	300	60
		Mutungi Milk Bar	800	Operating	180	23
		Salari Milk Bar	800	Operating	170	21
		Kashai Milk Bar	800	Operating	200	25
		Kikulula Milk Processing Plant	1,000	Operating	500	50
		Kayanga Milk Processing Plant	1,000	Operating	300	30
		MUVIWANYA	1,000	Operating	350	35
9	Morogoro	SUA	3,000	Operating	200	7
		Shambani Graduates	4000	Operating	750	19
10	Tabora	New Tabora Dairies	16,000	Operating	200	1
11	Iringa	ASAS Dairy	12,000	Operating	6,000	50
		CEFA Njombe Milk Factory	10,000	Operating	2,700	27
12	Mbeya	Mbeya Maziwa	1,000	Operating	500	50
		Vwawa Dairy Cooperative Society	900	Operating	600	67
13	Dodoma	Gondi Foods	600	Operating	200	33
	Total		**394,600**		**105,380**	27

Source: MLFD

Appendix 6: Tanning Industry in Tanzania

	Region	Tannery Plant	Capacity	Status
1	Mwanza	African Trade Development (ATD)	10 million sq. ft per annum	closed
2	Morogoro	African Trade Development (ATD)	11 million sq. ft per annum	operating
3	Kilimanjaro	Moshi Leather Industries (IPS)	12 million sq. ft per annum	operating
		Afro Leather Industries	100 hides per day	operating
		Himo Tanners	250 hides, 3000 skins per day	operating
4	Coast	Kibaha Tannery	500 hides, 3000 skins per day	operating
5	Arusha	Salex Tanners	Raw hides exporter constructing Tannery	
6	Dodoma	Sata 2003 tannery	New/NA	

Source: MLFD