



**UNITED REPUBLIC OF TANZANIA
MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT**



TANZANIA LIVESTOCK MODERNIZATION INITIATIVE

JULY 2015





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Dr. Jakaya Mrisho Kikwete
PRESIDENT OF THE UNITED REPUBLIC OF TANZANIA

STATEMENT BY THE PRESIDENT

I feel greatly honored to launch the Tanzania Livestock Modernization Initiative which has been prepared by the world class experts from National institutions, International, academics and field experienced experts. The launching of this livestock initiative is a clear evidence of the efforts and firm commitment of the Government of the United Republic of Tanzania to enhance the development of the livestock sector in the country. I strongly believe that, the livestock resources available and proper use of various expert opinions can be utilized to transform livelihoods among farmers and other stakeholders in the livestock value chain.

It is important to note that, livestock resource, apart from offering direct food products like meat, milk, and eggs, also provides drought animal power as labor saving technologies; manure for crop farming and biogas for electrification or cooking fuel with potential reduction of deforestation.

Let me take this opportunity to extend my sincere gratitude to the Steering Committee of national and international experts led by Dr. Kaush Arha and including Prof. Sarah Cleaveland, Prof. Rudovick Kazwala, Dr. Maria Mashingo, Dr. Amos Omore, Dr. Hamza Mehehe, and Mr. Nathaniel Mbwambo in working the Ministry of Livestock and Fisheries Development to develop the Tanzania Livestock Modernization Initiative. I acknowledge the support of The Royal Danish Embassy and International Livestock Research Institute (ILRI) for funding the preparatory workshop of this initiative. Furthermore, I thank all participants involved, the national institutions including the universities, private sector and the livestock farmers as well as the International Institutions and experts, including: the International Livestock Research Institute (ILRI), International Conservation Caucus Foundation (ICCF), Bill and Melinda Gates Foundation (B&MGF), International Fund for Agricultural (IFAD), Food and Agricultural Organization (FAO) and business communities for their tireless contributions towards the formulation of this important Initiative. I also thank various development partners interested in the livestock sector development including the World Bank and the African Development Bank.

On behalf of the peoples of the United Republic of Tanzania let me reiterate full commitment of the Government of Tanzania to support the implementation of Tanzania Livestock Modernization Initiative (TLMI). The Government of Tanzania is committed to working closely with the private sector from within and outside the country in unleashing the immense potential for developing the livestock sector for the benefit of rural communities and to improve national health and nutritional standards.

Dr. Jakaya Mrisho Kikwete
PRESIDENT OF THE UNITED REPUBLIC OF TANZANIA
July, 2015



Dr. Titus Mlengeya Kamani (MP)
MINISTER FOR LIVESTOCK AND FISHERIES DEVELOPMENT

FOREWORD

It gives me great pleasure to present the Tanzania Livestock Modernization Initiatives (TLMI) for the period 2015/2016 - 2020/2021. First and foremost I wish to acknowledge an excellent job and commitment of TLMI team, staff and special thanks to the national and international experts who contributed in the making of this initiative. Thanks to Dr. Kaush Arha and the TLMI Steering Committee working with Permanent Secretary Dr. Yohana Budeba and Ministry leadership in developing TLMI. Thanks to Dr. Seamus Murphy for assisting the Steering Committee and the workshop.

As it is widely known, the livestock sector is important for poverty alleviation, food security enhancement, employment creation and environment conservation. In spite of the high potential of livestock resource available in the country, the sector is constrained by low genetic potential leading to low production efficiencies, high mortalities, dependency on natural vegetation for grazing. These is reproductive and production wastage makes the livestock sector inefficient and thus not contributing to its potential in the development of the sector. This is an area where experts used all of their expertise to propose scientific based strategies to rectify these inefficiencies and thus inputting into this important initiative.

The Initiative takes into account the importance of the animal feed resources, animal resources genetic improvement, animal disease control, transfer of appropriate technological packages and farmer empowerment. Furthermore, the initiative has taken into consideration livestock marketing, utilization of by-products such as hides and skins, draught power and manure for increased crop production, biogas as a renewable source of energy.

To efficiently implement the initiative, I call upon every one of us to be focused, transparent, accountable and innovative in implementing the activities as outlined in this initiative. I wish, therefore, to urge all government staffs, private and other stakeholders to fully commit themselves to the implementation of the Initiative for the benefit of the people of the United Republic of Tanzania.

Dr. Titus Mlengeya Kamani (MP)
MINISTER FOR LIVESTOCK AND FISHERIES DEVELOPMENT
July, 2015

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Introduction

Tanzania has the third largest livestock population on the African continent comprising 25 million cattle, 98% of which are indigenous breeds, complemented by 16.7 million goats, 8 million sheep, 2.4 million pigs, and 36 million chickens.

The 2012/13 National Panel survey revealed 50% of all households keep livestock (4.6 million households), 62% of which are rural and 23% urban, with ownership patterns dominated by chickens (86% households), goats (48%), cattle (35%), pigs (9%) and other livestock (10%).

Traditional breeds and processes dominate the Tanzania livestock sector. Tanzania Short Horn Zebu is the most widespread cattle breed in the nation. Agro-pastoralists households account for 80% of livestock production, pastoral communities 14% and remaining 6% comes from the commercial ranches and dairy sector. Sheep and goats are widely distributed and adapted to many agro-ecological zones.

Production coefficients are low. In indigenous cattle, the calving rate is 40 – 50%, the calving interval 18 – 24 months, pre-weaning mortality 30– 40%, adult mortality 8 –10%, mature weight 200 – 350 kg, offtake rate 8 – 10% per annum, milk yield 400 liter per lactation and carcass weight 100 – 175 kg. For small ruminants, the offtake rate is 25-15% per annum, lamb/kid mortality 20– 40%, adult mortality 8 – 15% and average carcass weight of 12 – 15 kg.

In addition to supplying food products, livestock play a major role as an engine for rural livelihoods and development. Livestock provide draught power, transport and manure as fertilizer for crop farming activities and potential energy sources through biogas technologies for rural electrification and/or cooking fuel.

The National Livestock Policy of 2006 guides the development of the livestock industry. The instruments for the implementation of this policy come from the Livestock Sector Development Strategy of 2010, the Livestock Sector Development Programme of 2011, and various regulatory frameworks with respect to: Veterinary Act, 2003, Animal Diseases Act, the Dairy Industry Act, the Meat Industry Act, Hides and Skins and Leather Trade Act, Animal Welfare Act, Livestock Identification, Registration and Traceability Act, and the Grazing-lands and Animal Feed Resources Act.

Tanzania has outstanding natural resources for livestock development including resilient livestock breeds, extensive rangelands and diverse natural vegetation. Of 88.6 million hectares of land resources in the country, 60 million hectares are deemed suitable for grazing. Despite these resources, the livestock sector is performing well below its potential. The livestock activities contribute 7.4% to the country's GDP. The annualized growth rate of the sector is low at 2.2%. The growth for the large part reflects increase in livestock numbers rather than productivity gains. The sector is severely constrained by low livestock reproductive rates, high mortality and high disease prevalence.

REALIZING 'TANZANIA VISION 2025' THROUGH LIVESTOCK

EVIDENCE FROM THE 2012/13 NATIONAL PANEL SURVEY



**POLICIES AND INVESTMENTS IN LIVESTOCK ARE ESSENTIAL FOR
"ACHIEVING A HIGH QUALITY LIVELIHOOD FOR PEOPLE ...
AND DEVELOPING A STRONG AND COMPETITIVE ECONOMY"**

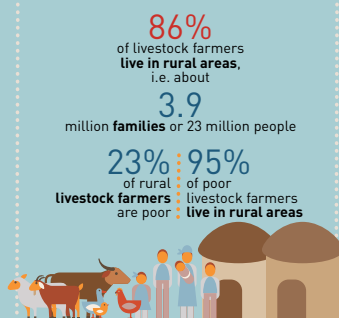
**"from low productivity ... to high productivity in agricultural production which
generates high incomes and ensures food security and food self-sufficiency"**

www.mipango.go.tz

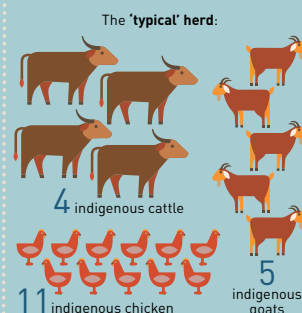
**THE MAJORITY OF
HOUSEHOLDS DEPEND ON
LIVESTOCK FOR
THEIR LIVELIHOODS**



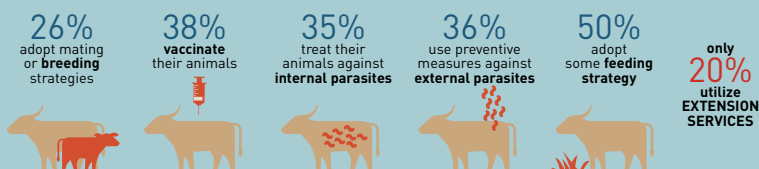
**LIVESTOCK FARMERS ARE
MOSTLY RURAL
MANY ARE POOR**



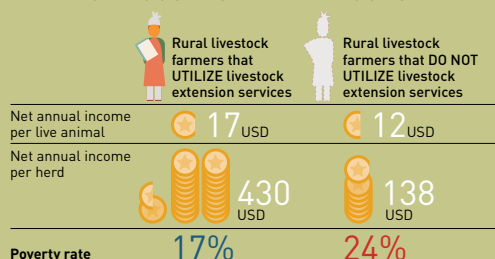
**RURAL
LIVESTOCK FARMERS
HAVE
FEW ANIMALS**



**RURAL LIVESTOCK
FARMERS USE BASIC
HUSBANDRY PRACTICES
AND MAKE LITTLE USE OF
EXTENSION SERVICES**



**POLICIES AND INVESTMENTS
THAT IMPROVE UTILIZATION OF
LIVESTOCK EXTENSION SERVICES
ENHANCE HOUSEHOLD LIVELIHOODS...**



**...AND CONTRIBUTE TO
TANZANIA VISION 2025 ...
TO "HIGH QUALITY
LIVELIHOODS FOR PEOPLE"**

If all livestock farmers utilized extension services:*

- the total aggregate household income would increase by over USD 286 million per year, with a corresponding reduction in poverty levels;
- the value of livestock value added would increase by almost 190 percent

* Estimates based on linear extrapolations assuming a net annual income per live animal of USD 17 for all livestock farmers – 2012 prices

**HOUSEHOLD
INCOME
USD
+286
million**



In collaboration with:



Food and Agriculture
Organization of the
United Nations



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Tanzania Livestock Modernization Initiative

The Tanzania Livestock Modernization Initiative (TLMI) is intended to support the progressive and adaptive development of a vibrant livestock sector which is responsive to growing demands and emerging commercial opportunities, and which is economically, socially and environmentally sustainable.

The TLMI aims to harness the potential of the meat, dairy and poultry sectors for poverty alleviation through improvements across the value chains including improvements in security and access to grazing, supplementary feed and water, genetic potential of traditional livestock, animal husbandry and disease control, access to markets, quality and safety of livestock products, processing and value addition. It will identify the coordinated interventions needed across sectors to support these improvements and the necessary regulatory environments to ensure safe and healthy livestock products.

GOAL

The overall goal of the TLMI is to increase food and nutrition security and food safety, create employment opportunities and contribute to the national economy, social stability and sustainable environment.

PURPOSE

The purpose of TLMI is to improve the livelihoods of traditional and small holder livestock farmers and contribution of the sector to the national economy.

OBJECTIVES

To transform the traditional livestock sub-sector into a modern, responsive, sustainable and environmentally-friendly engine for rural development and improved national health and nutritional standards by:

- guiding and supporting livestock farmers in technology transfer to equip them with appropriate knowledge and skills in livestock keeping;
- delivery of livestock inputs and services;
- improving market infrastructure and marketing systems for livestock and livestock products;
- empowering livestock farming communities and the private sector;
- strengthening national and local government institutions to modernise the livestock sector; and
- streamlining the policy and regulatory environment to provide a conducive environment for private and public sector investments.

THE DESIGN PROCESS

The Tanzania Livestock Modernization Initiative (TLMI) aims to implement the National Livestock Policy (NLP) of 2006 in the context of The National Five Year Development Plan, Agricultural Sector Development Program (ASDP), KILIMO KWANZA, National Strategy for Growth and Poverty Reduction (NSGRP), Rural Development Strategy (RDS), Comprehensive Africa Agriculture Development Programme (CAADP), Tanzania Development Vision 2025.

Key Strategic Areas

The Livestock Modernisation Initiative consist of 13 key strategic areas which are:-

- (i) Tanzania Rangelands Conservation and Management
- (ii) Sustained Genetic Gains in Tanzania Livestock Breeds
- (iii) Improving Tanzanian Beef Cattle
- (iv) Improving Tanzania Poultry Industry
- (v) Improving Tanzanian Dairy Industry
- (vi) Promoting Tanzanian Livestock Markets
- (vii) Responsive Veterinary Systems to Improve Animal Health and Human Welfare
- (viii) Livestock Research & Extension Through Modern Information Systems
- (ix) Resilient Tanzania Pastoral Communities
- (x) Conflict to Coexistence: Livestock & Conservation
- (xi) Investment Drive for Tanzanian Livestock Sector Development
- (xii) Mainstreaming Livestock Sector Development in National Agriculture and Rural Development Initiatives
- (xiii) Cross – Cutting Issues



Tanzania Rangelands Conservation And Management



Context

Tanzanian rangelands are under dual pressure of over-exploitation and land conversion. Domestic livestock populations have been increasing by 5% per annum over the past 15 years. Rangelands are increasingly converted to other land uses by farming or development. Expanse of invasive plant species and shrubby plants continue to degrade native rangeland ecosystems. The expansion of human and livestock populations, coupled with high rates of land conversion and degradation, has resulted in heightened community tensions and conflict in several areas.

Only 2% (1.28 million ha) of the land deemed suitable for grazing is currently protected within village land use plans, which have been implemented in less than 10% of villages in 81 out of 150 districts. Invasive species pose a major problem with 23 of the 30 invasive species found in Tanzania occurring in rangelands.

Resilient rangeland ecosystems are the foundation of productive traditional and modern livestock production systems. Consequently, a primary task of the modernization effort is to secure and strengthen integrity and health of rangelands. Given that more than 50% of Tanzanian households are engaged in livestock production rangeland conservation and management should enjoy commensurate import and profile in national land designation and protection.

Priority Actions

- **Village Rangeland Reserves Initiative**
 - o Establish and secure village rangeland reserves (analogous to village forest reserve) pursuant to existing and new laws and regulations such as Grazing Land and Feed Resources Act #10 2010, and informed by best practices identified in the Sustainable Rangelands Initiative
 - o Give village rangeland reserves high priority in national and local land use plans and afford protection status similar to that given to village forest reserves.
- **Rangeland Rehabilitation and Improvement Program**
 - o Implement invasive species eradication schemes
 - o Improve rangeland production through native seeding, bush clearing and judicious water development and conservation
- **Feed improvements**
 - o Improve livestock feeding through pasture production and management to meet the needs of agro-pastoralists and pastoralists
 - o Improve forage harvesting and conservation, where appropriate
- **Strengthen capacity**
 - o Build technical capacity for rangeland management and platforms for knowledge dissemination
 - o Train and deploy rangeland officers.



Sustained Genetic Gains in Tanzania Livestock Breeds



Context

A priority of the Tanzanian Livestock Modernization Initiative is to improve the quality and performance of Tanzanian livestock populations. Improved breeds need to preserve the resiliency of the indigenous breeds while optimizing performance gains. Conservation of indigenous breed germplasm is imperative.

Low productivity of livestock populations in Tanzania is a high barrier to sector growth. Most effective national livestock improvement strategies involve a dedicated and sustained national effort to drive genetic gains of the livestock herds compatible to the national environment.

National stakeholders should be thoroughly engaged in selection of desired characteristics of resilient and productive improved breeds. Breed improvement should pay due attention to not only cross fertilization for new offspring but also its particular feed, care and handling and processing needs. A whole systems approach is needed to drive genetic gains in a sustained manner. Public-private partnership is critical in wide application of improved breeds and production systems.

Climate change adaptability is desirable and can exploit the genetic heterogeneity in Tanzania's indigenous herd, which provides an important basis for resilience to ecological challenges.

Priority Actions

- **Tanzania Livestock Breed Improvement Program**
 - o Establish a strategy for sustained long-term genetic gains
 - o Articulate an improved breeding and breed dissemination programs to livestock producers including an AI infrastructure
 - o Establish a holistic system to drive and sustain genetic gains with appropriate infrastructure in place to deliver AI, veterinary services and livestock nutrition
 - o Set suitable targets for improved breed herds and flocks, for example, three million improved dairy cattle populations
- **Tanzanian Animal Breeding Act**
 - o Swiftly enact the Tanzania Animal Breeding Act, which incorporates and facilitates the major tenets of the Tanzanian livestock breed improvement program
- **Breed Associations**
 - o Facilitate establishment and propagation of breed associations to provide opportunities for public-private producer partnerships
- **South – South Partnership**
 - o Look to learn from successful breed improvement schemes in other parts of the world, such as dairy enterprises in India and Brazil, the poultry sector in India, Thailand and Bangladesh, and beef production in Brazil and Ethiopia.



Improving Tanzanian Beef Cattle



Context

Cattle are owned by 35% of livestock-producers in Tanzania. Although cattle numbers have increased 5% p.a. since 2003, productivity gains are non-existent or very low. In Tanzania, 98% of red meat products originate from indigenous breeds, with 80% produced by agro-pastoralists and 14% from pastoralists. Average age of off-take for these cattle is 8-10%, with animals harvested at an average of 6-7 years.

Processing of beef is currently inadequate, with six abattoirs in the country operating at 50% capacity, although seven more abattoirs are being built. Only 2% of beef produced is processed, with remainder sold warm and undifferentiated. Most slaughter facilities in Tanzania operate using basic technology and lack tools and cooling facilities, and products carry potential health risks for consumers. There is under-utilisation of hides and skins, but processing and marketing of these products has great potential to add value.

With improved feeding, the indigenous Zebu demonstrates high potential for weight gain and desirable meat quality, offering the highest potential for modernization of the beef sector. Other cattle types, including Boran and Ankole cattle and the Mpwapwa breed, also hold great promise.

Priority Actions

- **Branding Campaign for Tanzania Zebu Beef – TeeZee BEEF**

- o Promote the Tanzanian shorthorn zebu cattle as a high-quality, recognisable brand in domestic, regional and international markets.
- o Use the TeeZee Beef campaign as a driver for holistic development across the beef value chain including:
 - enhanced production through improved feed and disease control, more efficient age off-take and finishing;
 - better slaughter and processing systems, including cold storage and transportation
 - traceability and quality assurance systems;
 - improved care and handling of hides and skins;
 - branding and standard labelling (e.g. free-range TeeZee Beef);
 - marketing systems that focus initially at domestic and regional markets.
- o Support and promote the TeeZee Beef brand through establishment of a TZ Zebu Breed Association.
- o Establish national and regional standardized programs for propagation of Boran, Ankole and Mpwapwa and other suitable breeds.



Improving Tanzania Poultry Industry



Context

Poultry holds high potential for rapid modernization with growing demand in urban and peri-urban and rural areas. In Tanzania, 96% of livestock farmers keep indigenous chickens, usually in small flocks of up to 20 animals, which supply 94% of the poultry meat and eggs in rural areas. There is differentiated demand for chicken type and breed in urban and rural areas.

The growth rate of the industry is low, with an average 2.6% annual growth in mainland poultry population. Egg production was 1.8 billion eggs in 2006, with consumption now equivalent to one egg consumed per person per week, and one chicken per person per year. Consumption is skewed to medium- to high-income populations in urban areas, but demand is high throughout the country.

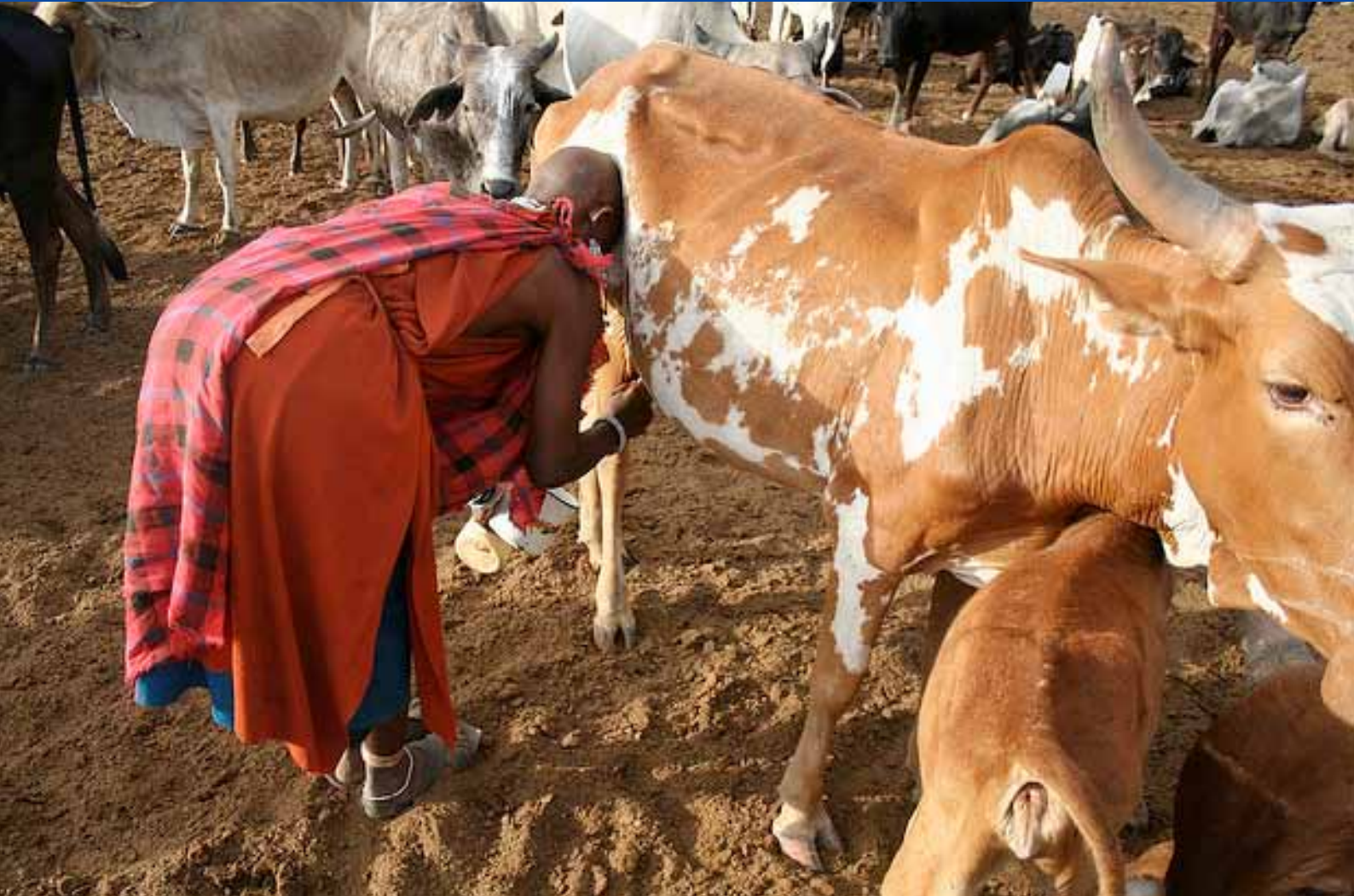
Poultry represent one of the most promising pathways for poverty alleviation – particularly for women's empowerment and employment – and makes a critical contribution to improved nutrition and food security. Modernization of the poultry industry, particularly among smallholders, is important to dispel the notion of poultry primarily as a subsistence activity.

Priority Actions

- **TZ KuKuVera Initiative for accelerated development of the poultry value chain**
 - o Identify key dual purpose breeds suitable for Tanzania free-range conditions
 - o Rapidly disseminate improved breeds to meet agreed targets of household and commercial operators
 - o Strengthen stock management capacity
 - o Support concentrated delivery of vet and extension services
 - o Ensure availability of high-quality improved feeds
 - o Facilitate availability of credit and insurance
 - o Revise regulatory framework to facilitate investments in poultry sector.



Improving Tanzanian Dairy Industry



Context

Dairy is an important subsector to the national food economy with multifaceted benefits ranging from nutrition, health, employment and household income etc. Unlike most agricultural enterprises, its benefits throughout the value chain are generated daily rather than seasonally. It is considered one of the most promising agricultural pathways out of poverty and inclusive development given the control of milk production by women.

Only 3% of the national cattle herd comprises improved dairy breeds. These produce 30% of the 2.5 billion litres of milk produced in the country each year and 70% of the milk that is marketed. Milk production is mostly for household consumption. Marketed milk is sold directly to neighbours (86%) or through small-scale milk traders and collective bulking centres (12%). About 2.4% of marketed milk is in the form of processed products and about half of it is imported.

There are 83 milk processing plants in the country handling 167,000 litres of milk daily, ranging from many micro processing unit that process very small volumes to Tanga Fresh that handles about 60,000 litres daily.

About 180 million litres of marketed milk reaches consumption markets in the form of processed products, of which imports make up 60%. This indicates a gap in the market not being met by the domestic processing sector.

Dairy production is most sensitive and responsive to improved breeds which depend on improved feed. Therefore dairy development is directly related to improved breeds and feed programs. Appropriate dual purpose breeds such as Mruazi type and Mpwapwa breeds are particularly suitable for smallholder production due to their resilience. National regulations standardizing milk quality with enhanced capacity of Tanzanian Dairy Board to enforce those standards would greatly facilitate private investments and market development. A harmonized regulatory framework that lowers the cost of business and enhances milk quality and safety would invite private investments.

Priority Actions

- o Tanzania Dairy Industry Development - Accelerating Market Operations Systems in Dairy Value Chain
 - Establish a system for promoting business linkages for pre-commercial and commercial small-holder dairy producers
 - Set targets for improved breed herds, milk production, quality assurance, policy and institutional strengthening
 - Improve feed systems, involving commercial production of forage and quality feeds
 - Improve infrastructure for milk collection, handling, transportation and storage
 - Improve marketing in areas that produce surplus milk while investing in linkages that promote improved access to input and services with low milk supply
 - Develop dairy hubs, involving farmers' groups/associations, input and service providers and milk buyers, to grow the sector from pre-commercial to commercial
 - Encourage growth of proven dairy operations through cooperatives and associations e.g. Tanga Fresh with enhanced integration where apt (for example Amul of India)
- o Rationalize institutional responsibility and resources for enforcement of regulatory standards for milk quality and safety
- o Set up a campaign to solicit private investment in the dairy sector and take actions to create an enabling environment including human skills development
- o Develop bi-lateral cooperative agreements with appropriate partners for dairy development.

Promoting Tanzanian Livestock Markets



Context

Market development is essential for modernization of the livestock sector. A high proportion of the Tanzanian livestock sector is based on barter or delayed remuneration. Facilitating improved liquidity in livestock exchanges will be conducive to development of sector wide markets and value chain developments.

Farmers hold livestock for multiple purposes including storing capital, social stature, draught, food, and farm income etc. Livestock modernization should strengthen market liquidity and interactions to meet farm family needs and optimize diverse returns.

Market development is essential for investments in the livestock sector. Tanzania and Sub-Saharan Africa demographic and food consumption trends underlie a robust foundation for domestic and regional market in livestock products. For most east and southern African nations the highest returns to investments lie in the development of domestic markets and cross-border markets facilitation.

Injunction of targeted geographical locations and livestock processes for export to distant Asian and European markets can play an important catalytic role in raising the profile and standards of the industry facilitating domestic and regional markets. Tanzania attracts keen interest by multinational livestock product corporations, which need to be encouraged and facilitated.

High prevalence of livestock disease is a significant deterrent to livestock trade. Holistic animal health and human welfare systems are needed to address prevalence of disease in Tanzanian livestock herds in a manner commensurate with capacity and culture of national regulatory systems. Disease free zones for exports are increasingly shown to be prohibitively expensive and unsustainable over time in open mixed-use rangeland systems. A more nuanced approach in certifying the livestock product processes across the entire value chain to meet international sanitary and phytosanitary standards holds higher promise.

National education and information campaigns highlighting the need and benefits of high quality safe milk and meat product is urgently needed in Tanzania to serve the synergistic dual purpose of improved national health and nutritional standards and facilitating growth of livestock markets. Wide availability of unhygienic milk and meat across the nation is worrying.

Priority Actions

- **Chakula Safi Salama Campaign**
 - o Implement a wide-ranging national information and education campaign on healthy and safe food to meet national nutrition and development goals
 - o This campaign will provide an added benefit of creating and driving demand for high quality livestock products
- **Tanzania Meat and Milk Market Drive to:**
 - o Build domestic market for high quality national milk and meat products e.g. TeeZee Beef; Tz Dairy and Tz Poultry
 - o Facilitate rapid development of regional livestock markets
 - Engage EAC and SADC to develop modalities for regional livestock markets
- **Livestock Identification & Traceability Systems:**
 - o Facilitate and implement apt regulatory and voluntary identification and traceability systems appropriate to the needs of domestic and regional markets
- **Targeted Foreign Markets**
 - o Promote the TeeZee Beef Campaign
 - o Introduce product processing based certification to meet international SPS standards
 - o Improve labelling and branding.

Responsive Veterinary Systems to Improve Animal Health and Human Welfare



Context

There is growing demand for livestock products in Tanzania, Africa and the world, which offers an immense opportunity for livestock sector development of Tanzania. The present sector is worth \$ 9 billion with enormous potential for rapid growth over the next 50 years. Improved disease control and SPS standards will drive the nation's ability to capitalize on its livestock assets.

Modernization of the livestock sector requires modernization of a national veterinary services system that is responsive to modern and evolving needs of diverse livestock sectors and within the institutional national capacity to deliver. The World Health Organization's International Health Regulations and the Global Health Security Agenda urges nations to utilize best practices that build upon the synergies between human and animal health systems – referring to the new system as One Health Systems. Such a synergistic system holds high potential for Tanzania.

Existing capacity of the Tanzanian veterinary systems is inadequate to meet present let alone future demands of the national livestock sector. Deficiencies in the quality and quantity of services provided by veterinarians, para-professionals and community animal health technicians in both the public and private sectors are substantial.

Modernization of the veterinarian service systems is urgently needed by clearly integrating global best practices and knowledge in articulating the national goals for animal health and human welfare and building national core veterinary competencies to achieve them. Explicit recognition and engagement of private sector in meeting national needs for veterinarian services is imperative. The strength of Sokoine University of Agriculture Veterinary School and the Tanzania Veterinary Council offers a strong foundation for the development of a modern responsive veterinary services delivery system in Tanzania.

Decentralisation has led to several challenges in delivery and coordination of veterinary services. A further major concern relates to the inappropriate use of veterinary drugs, with antimicrobial resistance widespread in Tanzania.

Priority Actions

- **Drive to Dynamic and Demand-led Veterinary Services to improve animal health and human welfare:**
 - o Incorporating the applicable tenets of global best practices and explicitly encouraging private industry in delivery of veterinary services;
 - Utilize the full suite of government roles of veterinary services within livestock sector development, which include regulatory, servicing and facilitating roles.
 - o Identify the range and scope of veterinary services demanded by different livestock industries in consultation with stakeholders;
 - o Develop cost effective approaches to delivery of high-quality veterinary services;
 - o Improve coordination across sectors and departments, particularly between the Department of Veterinary Services and Tanzania Food and Drug Authority; and
 - o Ensure appropriate chain of command and coordination between national and local authorities.
- **Core veterinary competencies and delivery**
 - o Request OIE to conduct an updated Gap Analysis to assess national veterinary services needed to meet livestock sectorial demands;
 - o Increase the numbers of veterinary professionals in response to needs;
 - o Develop opportunities for sub-contracting private veterinarians to deliver services;
 - o Improve national epidemiology surveillance capacity;
 - o Improve national diagnostics systems from labs to farms;
 - o Ensure an appropriate chain of command to deliver systemic improvements and meet national targets; and
 - o Ensure coordination between veterinary services, local governments and TFDA for inspection and accountability to ensure safety and quality of livestock vaccinations and products through the entire value chain.

Livestock Research & Extension Through Modern Information Systems



Context

In Tanzania, only 20% of livestock producers are able to access extension services, yet studies show that even a slight increase in extension has a disproportionately high dividend in improving livestock production and performance.

Effective research and extension have been essential ingredients of inputs into improvement and modernization of any and all successful livestock sectors across the nations/globe, including Brazil, USA, Europe and India. However, global trends indicate that there are diminished public funds for veterinary and extension services, which requires a serious rethink of national models and approaches for research and extension.

Best global practices emphasize value chain specific and demand-driven research and extension systems based on public-private-producer partnerships. Tanzanian institutions are experimenting with these new approaches such as value chain innovation extension services or solution based research models.

Use of modern technology allows for rapid and effective dissemination of information that can be utilized to improve delivery of extension services. Technology has proven more efficient in dissemination of information, which previously depended solely on inter-personal contact. Further, comprehensive and coordinate extension

services are found to be most efficiently and effectively provided in a targeted manner where animal and animal producers congregate. Tanzania by focusing on the use of technology and targeted delivery of comprehensive extension services can revolutionize its research and extension system to be a major driver of a modernizing national livestock sector.

Priority Actions

- **Tanzania Rapid Response Livestock Information System:**
 - o Collect, correct and certify the existing relevant information on livestock production and processes in an easily accessible secure dynamic data base;
 - o Invite public-private partnerships, including universities to engage in active data and knowledge management of the information collected and certified by the government. Government may certify or license qualified entities for knowledge management of its data banks;
 - o Invite and accept private applicants for dissemination of the livestock information and knowledge in a rapid response manner using the best of modern technologies;
- **Comprehensive Expedited Extension Service Delivery at Livestock and Producer Congregations:**
 - o Dairy market hubs, involving farmers' associations, input and service providers, and milk buyer groups;
 - o Strategic use of agricultural innovation parks, farmer field schools and agricultural experiment stations;
 - o Literal and virtual hubs service delivery to poultry producers; and
 - o Targeted service delivery to stationary or mobile beef cattle herds.



Resilient Pastoral Communities



Context

Tanzanian pastoral communities are part of the national cultural fabric and contribute in diverse ways to national social and economic development. Pastoral systems have evolved to thrive on extensive rangelands in arid or semi-arid climates. Modernity with its emphasis on intensive and concentrated use of lands driven by population growth is often at odds with systems that have evolved at making use of large swaths of arid and semi-arid rangelands of little alternative use in the past. Agricultural and tourism development often offer higher returns on lands previously deemed unfit for both activities. Nonetheless, good reasons remain to conserve traditional pastoral livestock production systems to complement an array of agricultural and rural development initiatives.

Pastoral systems offer dual national benefits. The first benefit is the continuity of the cultural heritage of the nation and the second, pastoral systems - with right signals on animal numbers - offer optimal livestock production systems in arid and semi-arid rangelands. The government role is to enable strong resiliency in pastoral systems to take advantage of their natural competitive advantages. Land security and tenure coupled with good governance of rangeland ecosystems are essential for resilient pastoral communities. Improved breeds, which thrive in extensive and seasonal pastoral systems, and access to markets for pastoral communities is key to thriving resilient pastoral communities.

Priority Actions

- **Tanzanian Resilient Pastoral Communities Initiative:**
 - o Establish Village Rangeland Reserves (VRRs);
 - Manage VRRs under community enforceable guidelines and plans.
 - Foster development of cross-pastoral communities cooperatives or livestock associations to further pastoral interests and products.
 - o Secure national mobility corridors (pursuant to the Grazing Land and Feed Resources Act #10 2010);
 - o Implement Rangeland Improvement and Rehabilitation Programs;
 - o Introduce pastoral-based genetic improvement system e.g. dual purpose large and small ruminant breeds and types such as Mpwapwa and Mruazi;
 - o Establish pastoral-led market systems to facilitate access and response to markets; and
 - o Improve access to education, credit/insurance and social services.



Conflict to Coexistence: Livestock and Conservation



Context

Tanzania is blessed with an extraordinary natural heritage – the wildlife wonders of Serengeti, Ngorongoro, and the Selous, the largest game reserve in Africa, as well as the highest and lowest points in Africa on Kilimanjaro and in Lake Tanganyika. Mwalimu Julius Nyerere enshrined Tanzania's trusteeship of its wildlife resource in the Arusha Manifesto of 1961. Tourism amounts to about 17% of national GDP and is the largest foreign currency earner. Tourism employs largest number of Tanzanians after agriculture generating revenues for about 400,000 people, contributing to rural development and livelihoods including that of pastoralists and agro-pastoralists.

In history and theory, extensive livestock production systems are often the most compatible agricultural enterprise with wildlife conservation. As wildlife and pastoral systems are both threatened by land conversion to large-scale crop agriculture, there are good reasons for both pastoralists and wildlife conservationists to work together.

Conflict today is driven by two main factors – disease management and resource competition. Export-oriented livestock systems have historically required separation of livestock and wildlife to meet international trade

standards to export beef to developed nations. This approach led to extensive fencing in southern Africa with disastrous effects on wildlife health and movements. Disease-free zones are increasingly recognised to be cost prohibitive and unsustainable. They also exclude large numbers of livestock keepers from potential access to international markets. Non-geographically based international trade standards are increasingly being adopted, based on mitigation of disease risks along the value chain, and hold better promise. Tanzania has not embarked on nor has any immediate plans for large scale fencing of its grazing lands.

Conflicts over resource competition and land use have recently been exacerbated as a result of increasing livestock numbers, and a breakdown of the ability of traditional and local governance regimes to maintain harmony in changing times and circumstances. Tanzania's land base is made of 70% village lands, 28% protected areas including national parks and wildlife reserves, and 2% urban or private. Wildlife management areas (WMAs) or village forest reserves have been established on village lands by local communities on a voluntary basis, emphasizing certain land-use activities that offer optimal benefits or returns to communities. In this context village rangeland reserves can serve a similar service in appropriate areas. Pastoral communities of Kitato and neighbouring villages have come together to designate grazing areas and grazing regime to manage shared herds. Such initiatives can be applied elsewhere in the nation.

Priority Actions

- **Reserve Grazing Buffer Initiative**
 - o Prioritise responsible livestock management as the preferred agricultural land use activity in areas buffering national parks and wildlife reserves i.e. buffer outside of the protected areas.
- **Shared Rangeland Rehabilitation & Improvement Programs**
 - o Facilitate National Parks and Reserves and neighbouring villages to coordinate their activities to rehabilitate and improve rangelands in the protected areas and the buffer zones.
 - o Encourage tourism revenues to be utilized to improve rangeland systems e.g. control of invasive species in the buffer zones outside of protected areas, which will create a win-win for both parks and pastoralists.
- **Use of certified livestock production systems to promote beef export**
 - o Branding of Tanzania Zebu cattle as wildlife friendly
 - o Discouraging use of disease free zones for export.

Private Investment Driven Transformation of Tanzanian Livestock Sector



Context

All foundational economic indicators point to dramatic increase in national, regional and global demand for Tanzanian livestock products as populations grow in number and affluence. There is high interest by international investors as indicated by their presence and contribution to the TLMI and frequent inquiries for investment opportunities in Tanzania livestock sector. With demand for meat in Tanzania expected to triple by 2030, there are enormous opportunities for business growth in this sector. Tanzania with its geography linking east and southern Africa and interior nations to the coast is well placed to be a major player in regional livestock market investments.

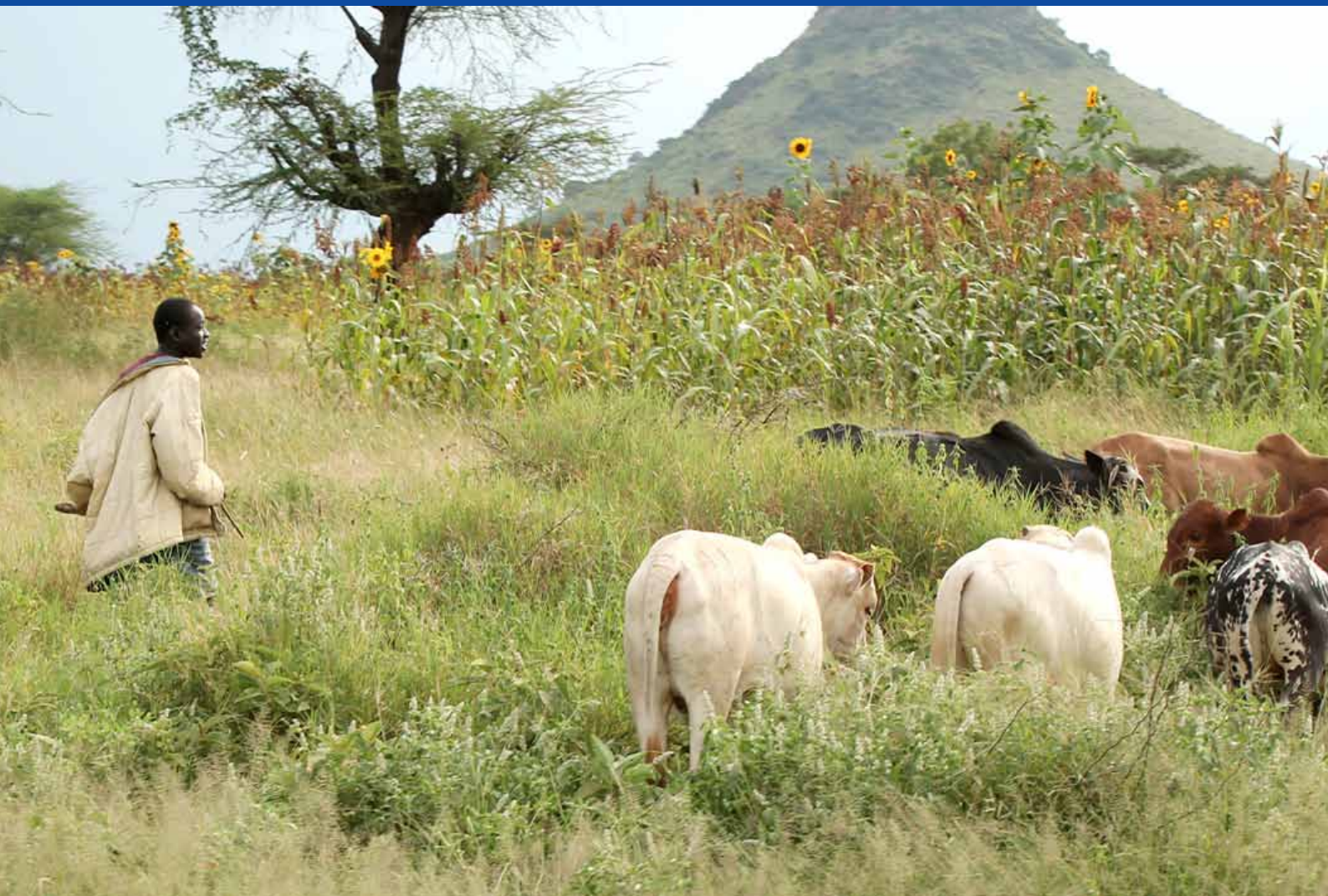
All necessary and sufficient elements for economic development are in place to develop a thriving livestock industry in Tanzania – a large livestock production base, many producers ready to engage and the private sector eager to invest. However the deficient transparency and predictability of the regulatory environment acts as the major barrier to investment. In 2015, the World Bank ranked Tanzania 131 out of 189 economies in terms of ease of doing business.

To unlock the high potential of private investments in Tanzania livestock sector requires a paradigmatic shift in the nation's approach to sector development. Public funds are scarce and will never be enough to address the vast needs of sector development. The government may best transform the traditional livestock sector to a modern one by focusing its efforts to enact a regulatory framework that facilitates rapid private investment in the sector to the benefit of Tanzanian households and economy. In short leading the way to a private investment driven transformation of the Tanzanian livestock sector.

Priority Actions

- **Establish a Tanzanian Livestock Development Investment Facility within the Tanzanian Investment Centre:**
 - o Offer a one stop shop for first tier permitting and orientation of the Tanzanian business environment;
 - o Facilitates regular consultations between public and private investors to identify investment hurdles and provide input for improved regulations;
 - o Identify the needs for skilled labour and facilities;
 - o Facilitate micro finance, credit and insurance schemes including contract farming;
 - o Offer study tours of relevant economies;
 - o Coordinate consumer education campaigns for safe and healthy foods;
 - o Facilitate pairing of interested investors with civil society groups to learn the markets;
 - o Review of laws and unrecorded proclamations; &
 - o Support risk mitigation of private sector entry into the Tanzanian livestock sector.

Mainstreaming Livestock Sector Development in National Agricultural and Rural Development Initiatives



Context

Livestock is one of the most important sectors for Tanzania's national economy and society. With over 50% of households engaged in livestock keeping, the sector has among the widest engagement of any in Tanzania and provides a diverse array of benefits from nutrition, health, social cohesion and gender equality to rural incomes and natural resource conservation. The large numbers of livestock in the country offer excellent investment opportunities with potential to contribute substantially to economic growth and rural development. As such it is imperative that livestock sector development features prominently in all major national agricultural and rural development initiatives and strategies.

The majority of Tanzanian rural households engage in agricultural crop and livestock rearing. Consequently the synergies between crop and livestock production systems should be highlighted and encouraged in national comprehensive agricultural development strategies. Livestock, unlike crop agriculture, offer a diverse array of

household benefits from wealth storage, social stature, draught, consumption, manure and energy needs. Consequently livestock sector is often of high importance in the design of any effective rural development strategies.

These important synergies of livestock sectors with crop agriculture and rural development are to be explicitly institutionalized in national agricultural, economic and rural development plans and strategies.

Priority Actions

- o Tanzania Livestock Modernization Initiative represents one of the major agricultural sector wide initiatives within the Agricultural Sector Development Program (ASDP);
- o Tanzania Livestock Modernization Initiative and its focused priority actions constitute strong consideration in the national Big Results Now efforts underway;
- o Tanzania Livestock Modernization Initiative is an important manifestation of the Agriculture First Initiative - Kilimo kwanza



Cross-Cutting Issues



Cross-cutting issues such as gender, environment, HIV/AIDS, and availability of credit and finance are important in the development of the livestock sector and will be incorporated in the implementation of the Tanzania Livestock Modernization Initiative and its priority actions.





**UNITED REPUBLIC OF TANZANIA
MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT**



TANZANIA LIVESTOCK MODERNIZATION INITIATIVE

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