

Feed Priorities in the Tanzania Livestock Master Plan

Investment in livestock in Tanzania has the potential to significantly reduce poverty, improve the food security of rural people and make livestock an increasing contributor to GDP growth. Yet animal feed shortages is perhaps the most critical constraint to increasing livestock productivity. Poor feeding limits the ability of an animal to reach its genetic potential, so livestock grow slowly, produce little milk, are susceptible to diseases, and produce fewer calves. Moreover, poor feed reduces the impact of other interventions designed to boost livestock productivity, such as artificial insemination and oestrus synchronization. To meet its targets, the Tanzania livestock master plan (LMP) gives feed availability and quality a high priority.

There are currently not enough animal feed resources in the country, even in a good weather year of forage production. Increasing livestock production requires significant improvements in fodder production and conservation, the carrying capacity of rangelands, and the adoption of suitable technologies in animal herds.

These interventions will require the development and implementation of strategies to improve intensification in feeding programs, as well as breeding programs to increase the genetic potential of livestock, and thereby productivity. Several livestock value chains—dairy, poultry, pork and red meat. These are designed to meet rapidly-growing demands for agricultural commodities. The 2022 targets aim to increase red meat; chicken and pig meat; and milk and egg production by 50%; 666% and 69%; 77% and 40% above 2017 totals. These can only be met through secure year-round feed supplies. These increases, as well as the expected rise of the crossbred cattle population to nearly three million, will require enhanced forage and feed production and feeding services, including improved pasture productivity practices, and training for farmers on livestock feeding and forage use.



Moving targets

The LMP sets out ambitious targets for the year 2022 for

Background

Tanzania is endowed with abundant natural resources, such as rangelands, etc., from where natural forages and legumes are found. Cultivated land is also an important source of feeds in the form of crop residues and subsequently industrial by-products. The availability and use of feeds to a large extent depends on rainfall, temperature and humidity variations which in turn vary depending on the agro-ecological zone—highlands; humid to sub humid; sub humid to semi-arid; and semi-arid—and livestock production systems—traditional extensive, semi-intensive and commercialized intensive production systems.

The intensive commercialized system, though limited in size, has received more investment and improvement due to its contribution to the market-oriented economy. But the traditional extensive system, comprising agro pastoralism and pastoralism, remains the dominant production system despite its dependence on seasonal availability of forage and water. The third category,

The semi-intensive production system, combining the intensive and extensive production systems and allowing for the partial confinement of animals or free-ranging, is found in areas where mixed livestock–crop farming is practiced.

Approximately 98% of Tanzania's ruminant population is kept under traditional systems of management, using communal grazing practices mostly in natural pastures which are characterized by low productivity and have low feed value. Indigenous forage legumes, which have higher feed quality than grasses, are in short supply in the dry season, resulting in the low productivity of animals foraging on these pastures.

Only 4% of the country's ruminants are raised under semi-intensive and intensive production systems. The semi-intensive ruminant production takes places mostly on large-scale ranches and dairy farms, while ruminants in the intensive commercial system are kept in feedlots (for beef cattle) or under zero-grazing (dairy cattle). Non-ruminant farming, mainly poultry and pigs, also takes place in traditional extensive and commercial intensive production systems. The extensive or traditional poultry system comprises over 50% of the flock and supplies most poultry meat and eggs consumed in rural areas and about 20% of such consumption in urban areas. Intensive poultry and pig production is mostly practiced in urban and peri-urban areas and relies on compounded feeds or formula feeds, which are expensive due to the demand for crops as both human and animal foods.

Future scenarios

Assuming a 'business as usual' scenario for feed resources (without major feed development interventions), the future outlook for feed availability is a great cause of concern.

Table 1: Current and projected feed supply as a percentage of demand in the three livestock production zones in Tanzania

	National average	Central	Coastal and lake	Highlands
Current feed supply as a % of demand				
Average year	26	18	27	51
Bad year	13	9	15	21
Good year	44	31	44	87
Projected feed supply as a % of demand in 15 years				
Average year	15	11	16	20
Bad year	8	5	9	8
Good year	25	18	27	34

Source: LMP Tanzania

Table 2: Average feed balance assessment

Time period	Feed resources	Tonnes of dry matter	Supply as a % demand
2015	Domestic supply	20,964,780	
2015	Domestic demand	80,557,716	
2015	Balance	-59,592,936	26
2030	Domestic supply	20,964,780	
2030	Domestic demand	139,409,651	
2030	Balance	-118,444,871	15

Source: LMP Tanzania

With estimates calculated by the Tanzania livestock sectoral analysis (LSA) foreseeing no change in the rates of animal growth or dry matter requirements per animal, the total feed requirements 15 years from now will rise to more than 139 million tonnes of dry matter per year. The LSA findings indicate that feed requirements would not be met under any condition or in any ecological zone. The only feasible options are to increase the availability of feeds and the productivity of feeding practices.

As indicated in the above tables, feed resources available to livestock nationally in 2015 is 26%, 13% and 44% of the quantities required in average, bad and good weather years, respectively. The observed feed insufficiency, if no action is taken, could lead to poor nutritional health and high mortality rates. The feed balance is relatively good in the highlands zone and this is the main reason why dairying performs better here as opposed to in the central zone where traditional livestock keeping (extensive system) is mainly practiced. Without major feed development interventions, these figures are

expected to drop to 15%, 8% and 25% in 2030. The lower percentage of feed resources available versus the demand implies a larger negative feed balance, thereby increased feed inadequacy.

This situation calls for immediate technology and policy interventions to curb the future feed resource deficiency. Given that one tropical livestock unit needs on average three hectares per year, far in excess of the current supply of available land for grazing, these interventions should focus on improving pasture productivity on grazing lands, reducing the ruminant population, and increasing livestock productivity.

Proposed interventions

Policy interventions

Shortages of livestock feed resources sufficient to meet demand for feed for ruminants are in large part caused by the limited availability of grazing land. The strategies proposed to mitigate these challenges include the:

- Encouragement of the main stakeholders responsible for forests and game parks to enter into dialogue on more rational uses of the country's land resources, exploring for instance the possibility of using the forage available from forestry production for livestock and allowing grazing on areas left for fallow.
- Exploring of the possibility of reallocating more of the country's land for grazing.
- Implementation of the Grazing Land and Animal Feed Resources Act (No. 13 of 2010) initiating a process of registration leading to the formal allocation of land for grazing.
- Introduction of policy on the ownership of grazing areas in accordance to their carrying capacity as part of a formal land registration process.

Technological interventions

- Improvement of the quality of pastures to increase their carrying capacity through the facilitation of over sowing with high-quality forage seeds, including legumes, the reduction of bush encroachment on grazing land, and the promotion of the establishment of private pasture and pasture seed farms.
- Facilitation of the increased use of crop residues, agro-industrial by-products and other locally available non-conventional feed resources.
- Support for the adoption of technologies to improve the digestibility and intake of crop residues.
- Encouragement for the production and use of feeds, such as soya beans, yellow maize, etc.

Background to the LMP

The Tanzania livestock master plan was developed by a joint team from the Tanzanian Ministry of Agriculture, Livestock and Fisheries (MALF) and the International Livestock Research Institute (ILRI). Its development was overseen by a high-level technical advisory committee (TAC) convened under the auspices of the MALF Livestock Permanent Secretary, Maria Mashingo, and chaired by Catherine Dangat, the director for Policy and Planning. The TAC comprised the directors of key MALF livestock-related departments and other government agencies, and representatives from the private sector, civil society organizations and development partner agencies.

Data collection and quantitative diagnostics were supported by the ongoing involvement of key national livestock experts and consultation with a wide range of key stakeholders. The quantitative sector analysis was undertaken using the Livestock Sector Investment and Policy Toolkit developed by the World Bank, the Agricultural Research Centre for International Development (CIRAD) and the Food and Agriculture Organization of the United Nations working under the auspices of the African Union Inter african Bureau for Animal Resources.

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