

Characterisation of the livestock production system and potential for enhancing productivity through improved feeding in Mityana district of Uganda.

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The Feed Assessment Tool (FEAST) is a systematic method to assess local feed resource availability and use. It helps in the design of intervention strategies aiming to optimize feed utilization and animal production. More information and the manual can be obtained at www.ilri.org/feast

FEAST is a tool in constant development and improvement. Feedback is welcome and should be directed feast@cgiar.org. The International Livestock Research Institute (ILRI) is not responsible for the quality and validity of results obtained using the FEAST methodology.

The Feed Assessment Tool (FEAST) was used to characterize the feed-related aspects of the livestock production system in Mityana district of Uganda. The assessment was carried out through focused group discussions and completion of short questionnaires by three key farmer representatives owning small, medium and large scale farms¹. The following are the findings of the assessment and conclusions for further action.

Farming system

The farming system is primarily a subsistence based, mixed crop/livestock system. Farm sizes in the area are around 5 acres (2 ha) on average with most of the land being used for cropping. A typical household size is 8 people who live permanently on farm on average per year. Households in the area commonly grow a variety of food crops including; coffee (*Coffea Arabica*), maize (*Zea mays*), beans (*Phaseolus vulgaris*), bananas (*Musa acuminata*), cassava (*Manihot esculenta*), and vegetables. Napier grass is the main basal forage but a number of farmers also grow fodder legumes especially *Lablab purpureus* and *Mucuna pruriens* as well as fodder trees and shrubs such as *Calliandra calothyrsus*.

Each household also raises a variety of livestock species including cattle, goats and pigs for various purposes. Cattle are kept mainly for milk, cash income from animal sales and manure. On average most households have two or three milking cows. Indigenous chickens are kept by households to meet household meat, egg and cash needs. Improved cross breeds as pass-on gifts from Heifer are kept by more than 80% of households and are popular with farmers due to their high milk production

¹ The very small number of respondents for questionnaires means that the figures in this report are only indicative and should not be considered an accurate reflection of quantitative aspects of the farming system. However, they are adequate to give a crude overall impression for the purposes of guiding thinking about constraints and interventions.

capabilities. Cross breeds comprise mainly of Friesian, Jersey breeds and the local Nganda cattle. Nganda cattle are kept by about 20% of the households. Goats are also raised by 10-20% of the households for quick sale when funds are required. Labour is generally available all the time at approximately 70,000 Uganda shillings per month. This labour price package is considered very expensive. The high cost of labour is considered to be due to many rural people migrating to town to look for better paying jobs. Rainfall levels are generally adequate to support cropping activities; however, rainfall unreliability is increasingly becoming common (Table 1). Water is such a major constraint in the area especially during the dry season.

Table 1: Cropping seasons that occur in the area

Name of season	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Long wet season												
Short wet season												
Dry season months												

Major income sources

Milk sales are the primary contributor to household income. An average of 52% of all household income comes from the sale of milk. Crops, mainly maize, beans, bananas, groundnuts and cassava make an important contribution of approximately 38% to household income. The contribution from sales of indigenous birds and eggs is considered relatively minor at 10% collectively for some households (Figure 3). The contribution of these sales varies substantially throughout the year based on climatic conditions. Sale of animals generally occurs in an ad-hoc manner when funds are required quickly or undesirable animals such as bull calves and unproductive old cows need to be culled.

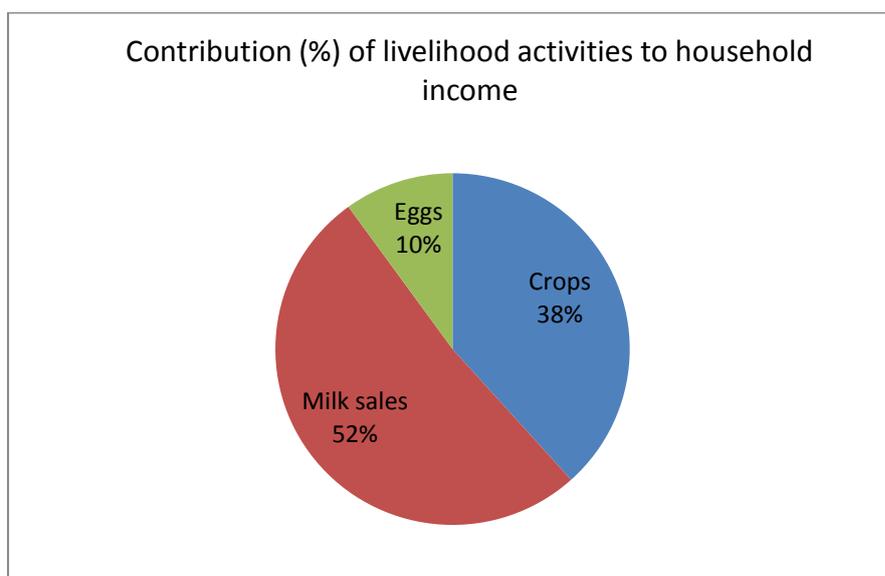


Figure 3: The primary contributors to household income in the area

Livestock production system

The livestock production system is focused on milk production. Improved dairy breeds, namely Friesians and a few Jerseys dominate livestock holdings as shown in Figure 4. Milk produced on the farm is sold to Mulika and Jessa traders at an average price of 600 Ugandan shilling (UGS), (0.2 USD; ranging from 500-800; 0.21-0.33 USD) per litre. The average milk production per cow per day in the area is 12 litres. The common feeding strategies in the area mainly include feeding chopped green fodder and /or crop residues especially maize stover, banana pseudostems and potato vines. Hay and silage is fed by 40% of farmers.

Veterinary services are easily accessed from the CAHPs employed on behalf of the DFBA. The price of veterinary treatments depends largely on the nature of the problem. For example east coast fever (ECF) vaccination costs UGS 60,000 (26 USD) which is considered expensive to most farmers. Farmers vaccinate animals against common diseases and this is supported by private health technicians and government animal health workers. Farmers individually buy acaricide and spray animals themselves to control ticks.

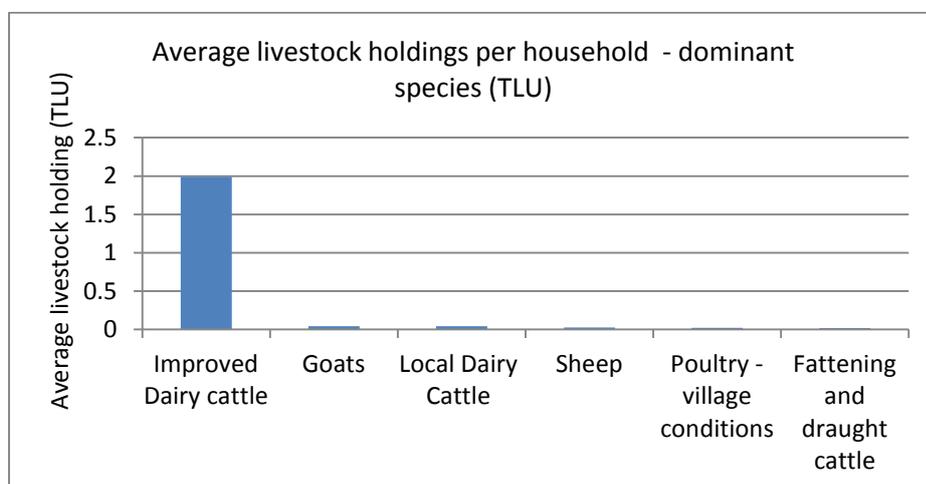


Figure 4: Average livestock holdings per household in Mityana in Tropical Livestock Units (TLUs)

Major feed sources through the year

The diet is primarily composed of green forages, crop residues, legumes, silage and hay and concentrates as shown in Figure 5. Cultivated fodder, crop residues, purchased feeds, naturally occurring and collected feeds, contribute the greatest proportion of the total ME (MJ/kg) and crude protein (CP; %) in the diet on farms (Figure 6). Concentrates and maize bran contribute 89% of the total purchased feed. Supplements such as maize bran and dairy meal can be purchased for 500 UGX (0.21 USD) per kg and 40,000 UGS shillings (17 USD) per 25 kg bag respectively.

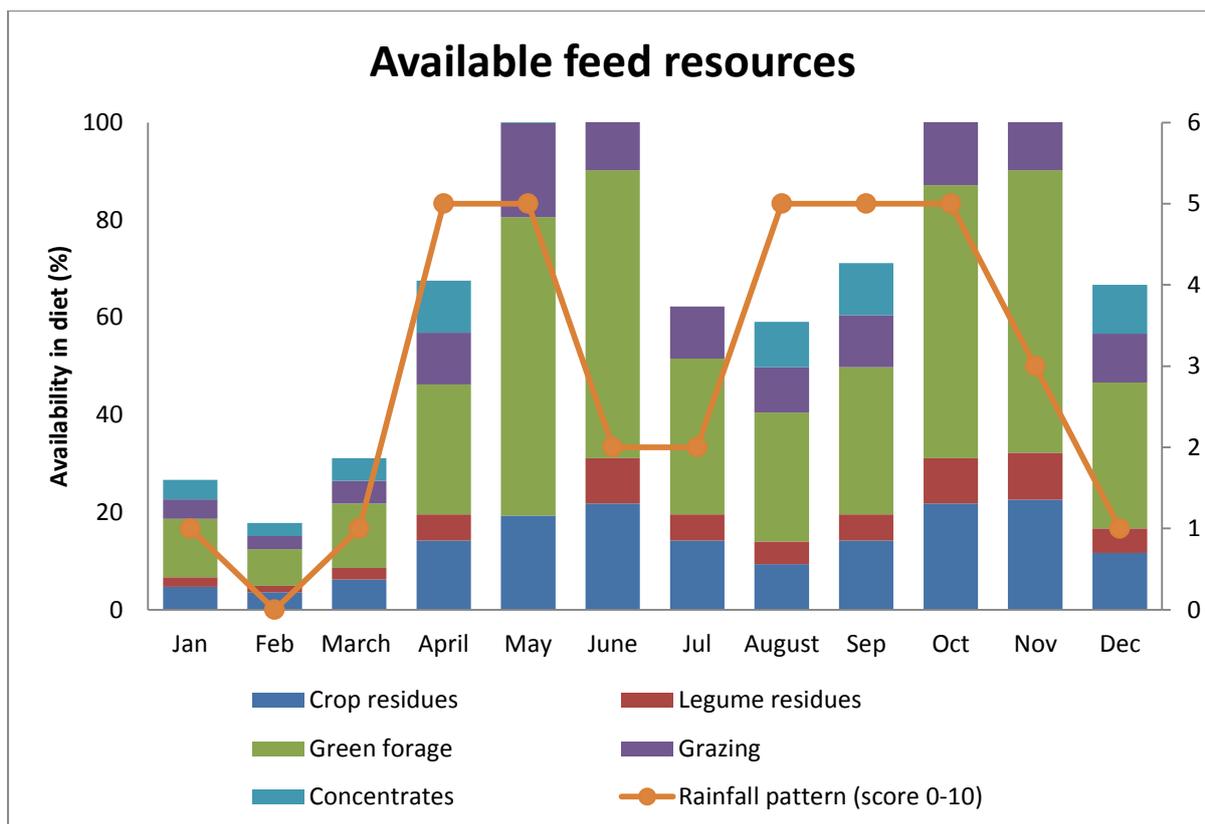


Figure 5: The dietary composition of cattle in Mityana, Uganda throughout the year in relation to rainfall pattern.

Problems, issues and opportunities

According to farmers, the main constraint to production in this area is animal diseases especially tickborn diseases escalated by the limited number of animal husbandry officers at sub county level. In addition, there is need for farmers to access seeds for establishing high yielding forages. Animal diseases especially tick borne diseases and lumpy skin disease, is the second most important problem in the area. Water scarcity is the third most important problem especially in the dry season. Farmers also consider fluctuation of milk prices in the dry and wet season as a major problem to sustainable incomes. Also listed as a major problem is the cost of concentrate feeds which is considered to be very high and significantly increase the cost of milk production. A summary of problems and farmer proposed solutions are shown the (Table 2). Although not mentioned as a key problem, some farmers engaged in pasture production find it hard to access market for the pasture.

Table 2: Problems, issues and proposed farmer solutions within the production systems

Problem (in order of importance)	Main problem	Proposed farmer solutions
1	Animal diseases	<ul style="list-style-type: none"> - Increase number of local drug shops - Increase number of service providers - Education on control of diseases and vaccinations
2	Unavailability of feeds especially during the dry season. Lack of market for produced forage seeds.	<ul style="list-style-type: none"> - Pasture conservation practices such as silage making and hay making. - Link seed companies to farmers through DFBA - Enhance network between farmers so that those who have e.g. demo farmers share with others - Help farmers to start community seed production
4	Unavailability of water – especially in the dry season	<ul style="list-style-type: none"> - Education on water harvesting technologies such as valley dams, underground water tanks etc.
5	Limited animal health services. Farmer consider the causes as: <ul style="list-style-type: none"> - Farmers reluctance to pay for services - Service providers are overloaded with many cases hence slow in responding to cases - They are occupied with other personal tasks such as business. 	<ul style="list-style-type: none"> - Service provider should separate personal and animal health roles - Service provider should specialise in technical roles such as A.I., clinical and animal husbandry services rather than mixing them.

Potential interventions

Farmers consider that one of the options of countering insufficient forage onfarm is through increasing acreage and composition of cultivated fodder. Since most farmers have not committed large proportions of their holdings to fodder, there is still room for producing more fodder from available land. To mitigate the effects of lack of market for forage seeds, efforts will have to be made to link the groups producing pasture seed to seed companies through the DFBA to enhance/catalyse community forage seed production.

Simple on-farm methods of silage production should be considered to mitigate the constraint of feed scarcity during the dry season. The use of polythene bags or small scale silage pits may be viable options.

Currently most of the purchased feeds are concentrates and feed ingredients. As a result attempts to make delivery chains effective and improve access of concentrates will enhance usage amongst farmers.

Key issues

- Lack of market for the forage produced by some groups.
- Water scarcity especially during the period of prolonged drought.
- Limited animal health services providers.
- High incidences of animal diseases caused by unavailability and high cost of drugs and vaccines.

Ways forward

1. Conduct feedback workshop with DFBA and relevant stakeholders
2. Support DFBA to develop implementation strategies based on recommended interventions such as:
 - Initiate community forage production either through groups or interested people as a business it has not started.
 - Improve animal health service delivery amongst farmers.
 - Improve farmer training in disease control measures.
 - Enhance training on simple silage making techniques on farms.
 - Enhance efficient concentrate feed delivery chains to farmers and train them on optimum concentrate usage.
2. Review implementation progress and document lessons learned.

Conclusion

Milk is makes the most important contribution to household income in this subsistence based mixed/crop livestock system. Farm sizes in the area are an average size of 5 acres (2 ha) most of which is used for cropping. Every household has at least 1-2 milking cows and 2-3 goats. The primary crops of importance are cassava, coffee, bananas, maize and beans. The main constraints to the further intensification and development of dairying in the area are a lack of feed especially in the dry season and high incidence of diseases. Napier grass is the main type of fodder. Most farmers keep improved cattle. Milk prices are generally unstable and vary throughout the year due to an oversupply in the wet season.