

Challenges and constraints of animal traction in Luapula Province, Zambia

by

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Abstract

There has been little tradition of cattle-keeping in Luapula Province, Zambia, and the use of draft animals was introduced only recently. As a result there is a shortage of both breeding cattle and draft oxen. Most cattle breeders do not buy more animals once they have started their herd, resulting in inbreeding. This problem is being tackled by a Bull Exchange Programme.

Much land in the province is left uncultivated because of a shortage of labour. Draft animals could play a major role in allowing cultivated area to be expanded. The shortage of draft animals could be addressed by promoting the use of cows for traction and by introducing donkeys. Donkeys could be especially useful for transport and could be particularly beneficial for women.

Introduction

Luapula Province of Zambia has an area of 50,600 km² on the Central African Plateau. The major physical features of the province are the plateau, the valley of the Luapula River, lakes Mweru and Bangweulu and the Bangweulu swamps. The altitude ranges between 900 m and 1300 m.

In 1995 there were about 585,000 people in the province (estimate based on 1990 census), the most densely populated areas being the Northern Luapula Valley and beside Lake Mweru. Other concentrations of people are around Samfya and Mansa. The plateau is sparsely populated.

Cattle-keeping in Luapula

There is little tradition of cattle-keeping and use of animals for draft power in Luapula Province; the first cattle were introduced about 100 years ago. The use of cattle for draft was first promoted in the mid 1950s, but this was not very successful. Another attempt at introducing the technology was made in the late 1970s and early 1980s by the

Integrated Rural Development Programme with support from the Swedish International Development Agency (SIDA). Support to the animal draft power programme was taken over by FINNIDA in 1988 when the Luapula Rural Development Programme was started. FINNIDA support has continued in the new phase started in 1995 under the Luapula Livelihood and Food Security Programme.

There are now a total of about 13,000 cattle in the province, of which about 800 are trained oxen. Between one and 18% of households own cattle, depending of the district. Most cattle are kept on the plateau, where there is plenty of land and no competition from fisheries for finance and labour. Concentrations are found around Mansa and the missions of Chibote and Lubwe/Kasaba, indicating the impact that the missions have had on development of cattle-keeping in the province.

As there has been little tradition of cattle-keeping and use of draft animals there is a shortage of both breeding and draft animals. The province's annual requirement for draft animals is 300, but there is currently a shortfall of about 60%. Non-cattle owners depend on hired labour and, to a smaller degree, hiring of oxen, for agricultural production. Only about 1200 ha are cultivated using oxen, compared to about 100,000 ha cultivated by hand.

The distribution of cattle between households is unequal: one farmer might have a huge herd whilst neighbouring farmers do not own any cattle. It is not possible to describe the average Luapula cattle breeder but a number of general observations can be made. Cattle breeders are older men (mostly over 50 years), who bought their cattle with cash. Knowledge about cattle was obtained by observing others (including parents) rather than from formal courses.

Inbreeding

Most cattle breeders do not buy more animals once they have started their herd, not even bulls. The use of self-bred bulls and the use of bulls for long periods is widespread. Farmers are unaware of the concept of inbreeding in cattle; it is thought to be a problem for humans only. Even when informing farmers about risks in general terms, problems like stunting, premature births and poor disease resistance surface. This indicates that the problem does exist. Poor fertility figures may in some cases also be attributed to inbreeding.

The province is addressing the problem by providing information on the difference between genetic improvement and avoiding inbreeding. This is taught to both extension workers and farmers. It is hoped that farmers will start appreciating the advantage of exchanging two bulls. Nevertheless, few farmers seem to put much effort into acquiring a (better) bull. Lack of money is often cited as a problem but, in economic terms, sale of one or two cows to buy a bull is, in these cases, very profitable. The Luapula Livelihood and Food Security Programme has introduced a Bull Exchange Programme to tackle the problem. The programme will purchase 10 bulls a year and distribute them to established livestock groups. These will be rotated after three years.

Other management issues

Another notable problem is poor feeding. Supplementary feeding, if it is practised, is limited to maize stover because nothing else is available. Herding practices may be important: farmers tend to blame herdsmen for not allowing sufficient grazing time. Herdsmen are generally poorly educated in cattle-keeping. Training herdsmen is a problem as they often do the job for only a few months.

At the level of herd management, a disease will be observed while poor condition and low fertility may go unnoticed or be accepted as a fact of life. The problem is aggravated by the virtual absence of veterinary services in many places. As a result of the lack of veterinary services, camp extension workers are asked to take over duties from veterinary assistants, a role for which they are not trained.

Draft animal power in Luapula

The low number of cattle in the province poses the major problem for (potential) animal draft power farmers. Most complain about non-availability of cattle, but the major problem is that they cannot compete with the butchers. There are few alternative animal power sources in the province. Many farmers prefer to use oxen rather than cows for draft because:

- they believe that if cows are used their fertility will decrease
- cows are weaker than oxen
- some farmers believe that there are government laws that prohibit the use of cows for draft. It seems that these farmers have misunderstood the law which prohibits slaughter of female cattle.

This has left oxen as the only source of draft power.

Knowledge of handling oxen and use of implements is limited at many farms. Ox-drawn weeding is rare even where ridgers or cultivators are available. This results in high demand for labour even when working with animals.

Supply of implements and spare parts and lack of capable blacksmiths is a problem in many areas.

Farmers also complain about lack of credit for oxen and implements. The situation is worsened by the lack of communication between farmers and lending institutions.

As cattle-keeping is regarded generally as a male issue, access to and ownership of draft animals is difficult for women. Much needs to be done on needs assessment and raising awareness before animal draft power can alleviate the labour burden on women significantly.

Agriculture in Luapula Province in general faces problems with marketing of produce.

Draft animals in relation to crop production

One of the major bottlenecks in crop farming in Luapula Province (and Zambia as a whole) is the shortage of human labour for farming operations. Ox owners as well as non-ox owners depend to a large extent on hired labour for plowing operations, hand weeding, harvesting etc (especially where bigger fields are being cultivated). Limitations on available labour and the low population density on the plateau mean that

much land is left uncultivated: less than 2% of arable land at the disposal of the smallholder farmer is being utilised. This indicates the crucial role farm power and mechanisation can play in enhancing the expansion of agricultural production and improved food security at both household and national levels.

Potential solutions

Many areas of the province are populated sparsely and expansion of agriculture is possible. The problems of maize marketing require a shift to other crops like groundnuts, and possibly rice, as alternatives. The shortage of steers for draft animals can be alleviated by introducing the use of cows and donkeys. While cows can do the same work as oxen, with the same implements, donkeys would be particularly useful in transport for those having limited access to cattle, like poor households and women.

There is high demand for hiring of transport, particularly between field and farm in densely populated areas. The efficiency of use of oxen can be increased by training in the use of secondary tillage implements and for transport.

The province has realised the importance of Luapula in efforts to increase the food production of the country as a whole. As a result, donkey traction has been promoted in three pilot areas with support from the International Fund for Agricultural Development (IFAD). Apart from facilitating acquisition of donkeys, IFAD has addressed a number of issues with regard to donkey culture. Once such issue is ensuring that the target farmers have the necessary knowledge and skills in the management of donkeys and ways of employing them profitably for draft purposes. It is hoped that this will address the labour constraints in agricultural production, especially for women, who have a high workload in both domestic and agricultural tasks.