

The challenges of reintroducing animal traction in post-war Mozambique

by

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Abstract

In post-war Mozambique, livestock production is still recovering from the adverse effects of the 16-year civil war. Many factors, both positive and negative, make this country a unique location for work with livestock in general and animal traction in particular. Tete Province is an area of priority due to the long tradition of husbandry in the province. However, there are four main constraints to the development of the animal traction sector: 1) an acute lack of animals due to depletion during the war; 2) a lack of implements as Mozambique's local hardware production has not reached large-scale production, and what is produced is mostly very expensive; 3) a lack of credit schemes which makes it very difficult for local farmers to buy animals or tools even when they are available; and 4) the lack of an extension network to disseminate animal traction technology.

The aims of the Ministry of Agriculture's programme, in conjunction with other organisations working in the province, are to reestablish family sector livestock production as well as to make animal traction an accessible alternative for farmers who have the initiative and the conditions for using this technology.

Introduction

As the third largest country in southern Africa, Mozambique has a broad range of agronomic zones ranging from coastal rainforest through semi-arid drought-prone lowlands to the upland sour grasslands. The traditions and cultures of the various peoples also vary, many having their own farming systems, mechanisms of production and development objectives. As the country opens up after the savage 16 years of civil war, which was preceded by nearly 10 years of independence struggle, the population is attempting to develop the high agricultural potential of the country by re-establishing both their traditional farming

systems and also the basic infrastructure which suffered so much. Positive factors include the low population pressure (20 people per km², with about 75% living in rural areas), the strong optimism that is found in the population due to the opportunity for a new start after the war, a relatively high soil fertility in many areas due to land lying fallow during the war. However, these are counterbalanced by negative factors, including the difficulties of recuperating a post-war economy, weak government structures due to lack of resources and lack of infrastructure such as transport and communications.

Constraints to dissemination of animal traction: an example of Tete Province

Tete Province lies in the northern central part of Mozambique. With an area of 100,700 km² it juts out peninsular-like between Zimbabwe, Zambia and Malawi. Geographically very varied, Tete ranges from an upland plateau 1000 m above sea level, with relatively high rainfall (800–1300 mm) and sour veld pastures mixed with *miombo* woodland to the lowland Zambezi valley (150–500 m above sea level) with a semi-arid climate (400–700 mm rainfall) and *mopane* savanna. It was once an important centre of animal production, and still has many advantages which encourage animal production and with it the use of the animal in multiple ways to improve the farming system. Due to often variable climatic conditions, the local farming systems have traditionally diversified and included livestock in their means of production in order to guarantee a food source even in years of poor rainfall. However, animal production in itself is restrained at present by factors including tsetse-fly infestation and lack of effective veterinary and technical assistance. Furthermore, animal traction is severely constrained on a larger scale because cattle,

implements and credit schemes are all very difficult for rural farmers to procure.

Lack of animals

During the war, the animal population suffered greatly. For example, from 1973 to 1992 the cattle population dwindled from 196,000 to 33,000 head (see Table 1). Since then, the cattle population has been slowly recovering, partly aided by the government and other organisations, partly 'spontaneously'. However, the human population has also increased sharply to 1.1 million inhabitants due to the large number of refugees returning to Tete Province (UNHCR estimates 821,000 refugees have returned since the peace accord; UNHCR, 1995). The number of animals per inhabitant has decreased to 0.04.

Tete province is divided into 13 districts, some of which have a stronger emphasis on animal production than others. In 1973, the main cattle areas were Angónia, with 79,000 head, Changara, with 66,000 head, Mutarara, with 17,000 head, and Moatize, with 10,000 head (Estatística, 1995). The distribution of goats was similar, with Changara at 54,000, Angónia at 40,000, Mutarara at 20,000 and Moatize at 4,000 head carrying the bulk of the caprine population.

The cattle registration of 1992 revealed that in Angónia, only 3% of the cattle remained, in Changara, 24%, while Mutarara was totally depleted. Moatize, being a semi-urban area near Tete City, had been a concentration point during the war so 50% of the 1973 cattle population was registered in 1992.

The poor infrastructure within the country, and the common poverty have worsened the situation to the extent that it is almost impossible for local farmers to alleviate the situation. They lack funds and means to arrange for cattle transport, it is impossible to organise credit, areas with enough cattle to be able to sell are few and far between and most cattle owners, even in areas with larger cattle populations, are not willing to sell because they too are still restocking. The veterinary authorities have limited means of transporting cattle even if the farmers were to approach them for assistance.

The Ministry of Agriculture and its Provincial Department of Agriculture and Fisheries (DPAP) have been acutely aware of the problem, and have started various restocking schemes, which, by using a two- to four-year credit system will hopefully help to rehabilitate the cattle population in as short a time as possible.

Lack of implements

Various animal traction projects have been launched in different parts of the province. Most of these have been involved in the importation of animal traction implements into the country, rather than attempting to establish local manufacture of these tools. This, combined with the present difficulties of finding raw material in the country, has resulted in a marked lack of local manufacturers of animal traction implements. There are a few manufacturers in Maputo, the capital, which is about 1500 km to the south of Tete Province. However, inquiries into the availability and prices of these implements have not led to any viable information, quantities

Table 1: Changes in the animal population of Tete Province 1973–1992

Year	People	Animal population		Animal density (no./km ²)		Number of animals/habitant	
		Cattle	Goats	Cattle	Goats	Cattle	Goats
1973	526,000	196,000	143,000	2.0	1.4	0.4	0.3
1980	831,000	112,000	85,000	1.1	0.8	0.1	0.1
1992	319,000	33,000	45,000	0.3	0.4	0.1	0.1

Source: Sotomane, 1993

produced are low, and transport prices so high that in fact importation from neighbouring countries is economically more viable. In Beira, 600 km south of Tete, plows can be purchased at the relatively affordable price of 700,000 Meticals (10,000 Mts = US\$ 1), but in very small quantities for the time being. In Tete itself, plows can be bought from the state-run hardware suppliers, but here the prices reflect not only high manufacturing costs, but also the high costs of transport from Maputo, one plow being sold at 1,000,000 Mts. As a comparison, the value of one head of cattle, at least 3 years old, currently varies between 800,000 and 1,500,000 Mts in the province).

Besides the standard mouldboard plow, some of these manufacturers also make ridgers and simple triangular harrows. However, no planters, diagonal harrows, cultivators or other implements are at present being manufactured on a large scale.

The prices of these locally manufactured implements are largely unaffordable for farmers in the rural areas. The majority of cattle owners find themselves incapable of obtaining tools for animal traction, although some, especially in locations close to the Zimbabwe or Malawi borders, manage to smuggle in a few implements, mostly plows and ox carts.

There is a possibility that local importers will start with the regular importation of animal traction implements from the above-mentioned countries. However, this will only become reliable once the local demand becomes more regular, which at the moment is not the case, due to the lack of liquidity of the farmers. This system would at any rate result in animal traction elements priced significantly above those of the countries exporting the goods, as transport (+25%) and import tax (+20%) will easily increase the selling price by more than 50% when the merchant's margin is also taken into account.

Lack of credit schemes

Another factor impeding rapid reestablishment of animal traction in appropriate zones of Tete Province at the moment is the lack of a credit system which would enable farmers to obtain animals and tools, start work, and repay the costs as they realise the economic benefit of the improved technology. The Banco Popular de Desinvolvimento (Peoples' Development Bank),

which is the only bank accessible in rural Mozambique, and even here in a very few locations, charge very high interest rates (40–46%) due to inflation in the country. Also, they are not willing to give credit to small-scale farmers. They insist on guarantees of property, valuable possessions and the like, which such a client cannot give, since the land they farm is not theirs (the new land-ownership policy of Mozambique clings to the socialist pillar of land belonging to the state). They are more likely to concede credit to a farmers' association, if this association can prove backing from a third party. There are no alternative credit schemes, for example schemes backed by international development organisations, available in central and northern rural Mozambique. To date there has been little long-term developmental input into these parts of Mozambique, as international organisations are currently closing down their relief efforts and turning their attention to developmental issues.

It will probably take up to five years for any large-scale credit scheme geared towards the small-scale farmer and operated wholly on internal funding to establish itself. Until then, farmers requiring credit will be forced to apply for informal credit from different organisations active in agricultural rehabilitation and development.

Lack of an extension network

During much of the recent history of Tete province, the farming population has often been left to its own devices for survival and development, because there has not been a strong extension network in existence which was able to cover the major agricultural areas of the province. In terms of animal traction, this means that there has been no technical support for the rural population which would enable interested farmers with cattle to either renew their tradition of animal traction or to adopt this technology due to suitability.

The promotion of animal traction in Tete Province is at the moment very much reliant on spontaneous adoption based on neighbouring families learning from one another. However, there are now districts with a growing cattle population where animal traction is not being revived, nor is it being introduced, even though rapid rural appraisals indicate a potential for this technology.

The need for a more formalised system to make animal-traction technology known to more than just those villages that have up to now been successful in reinstating traction has been identified by the DPAP and other organisations working with livestock, yet funding and the constraints discussed above limit the activities in this sector.

Short- and long-term activities

DPAP priorities and activities

Development of the livestock sector

As mentioned above, one of the main constraints in developing animal traction in Tete Province is the lack of animals available to the farming sector in general, due to the great losses suffered during the war. Thus the DPAP has defined restocking as being a priority in rural Mozambique. Various activities related to the reestablishment of the cattle population in the Province of Tete are being promoted.

A nationwide restocking scheme that imports animals from nearby Zimbabwe has been developed. The goal is to distribute the animals to the family sector based on a uniform credit scheme managed by the government extension team. The imported animals are initially breeding stock, as 95% are female and 5% are male. It is hoped that the cattle population will in this way expand rapidly and thus put the family sector farmer in a position to maximise the use of his cattle, be it for traction, sale, manure production, banking system, etc.

Mozambique is part of the regional, European Union-funded campaign against trypanosomiasis, which is being carried out in Zimbabwe, Zambia, Malawi and now Mozambique. This year, work in identifying trypanosomiasis infestation has begun, with a team surveying cattle populations in locations of high cattle density. As the first phase of the campaign involved the charting of trypanosomiasis infestation in the cattle population, the second phase will concentrate on mapping the prevalence of the tsetse fly in the province. Results of this campaign have not been published yet, but they will shortly be made available, so that zones appropriate for increased cattle production will be identified.

The rehabilitation of animal health posts and dip tanks is also a priority, with livestock centres and dip tanks being rehabilitated slowly.

Training centre for oxen in Angonia District

In Angonia District, an upland district of Tete provincelying on the border with Malawi, the DPAP has been rehabilitating the livestock centre, building up a nucleus herd of the indigenous Nguni cattle, a small, hardy zebu. This year, a traction training program has been started with 70 young oxen, who will be trained on-station, and then made available for purchase by the local population on a credit scheme. The training scheme is scheduled to take three months, after which the oxen will be trained to pull ox carts as well as plow. Although this means that for the 1995/96 season the oxen will not be trained and sold, animal traction in Angonia is used most commonly for transport, so that the young oxen will have a year to work in transport, and be used for plowing in the 1996/97 season.

World Vision activities

Although World Vision has recognised the need for restocking, this is a very cost-intensive activity, with a general estimate being that the importation of one head of cattle, included sanitary inspection, transport and quarantine, costs US\$ 1,000. Thus it has not been possible to make restocking a project priority. However, much potential for work in animal traction has been noted by the project, and certain activities have been started, with the hope of increasing work in this area.

Animal traction workshops

In many rural areas, it has become evident that there was great interest among livestock owners in restarting using animal traction if at all possible. Many farmers used to use their cattle for traction, but though the tradition is present in the area, have either lost the skill or lack encouragement via an extension network. A need for a basic introductory workshop was identified, and, supported by the DPAP and by a Mozambican animal traction specialist, a two-week course was held. The course included training of participants in the training of oxen for one-person handling, building specialised yokes for specific traction activities, making of rope from animal hide, and other local skills relating to animal traction.

The course was considered a success by the participants, who all agreed that a follow-up course was needed in the near future to deepen knowledge in improved cultivation methods, including weeding and ridging using animal traction, both of which are not common practices in the area. The participants of the workshop will act as contact persons in their home villages, who will train other interested livestock owners in the newly acquired techniques. As development of the animal traction sector intensifies, the project will facilitate further workshops of this kind in all areas of project activities.

Improvement of availability of animal traction implements

There are many solutions to the problem of lack of implements, but none is straightforward. In a short-term project, members of the livestock farmers' groups working in the project will be able to buy plows and other implements through World Vision, who will set up a simple and an as short-term as possible credit scheme to enable farmers to buy what they require. The implements thus sold will be obtained as far as is possible in Mozambique, since this avoids the high import taxes and transport costs. However, the project will encourage local importers to import traction implements from Zimbabwe, where two manufacturers produce quality implements, one of these selling on discount to Mozambique. Since the project is in its initial phase its success cannot yet be judged.

On a longer-term scale, the project hopes to encourage farmers' associations in rural areas to establish local agricultural input stores, which would stock and sell inputs including fertiliser, seed, plows and spare parts. This too would initially involve a credit scheme supported by the project to get the programme started.

Improvement of animal health in rural areas

As one of the main restraints in introducing animal traction is the lack of animals, effort has gone into the reestablishment of the health support system for livestock. In Changara district, one of the traditionally strongest livestock areas of Tete province, livestock farmers have not had the benefit of a comprehensive animal health care for as long as 10 years. The project has used transport facilitation and technical support to encourage farmers in villages with over 500 head of cattle to build handling corrals out of local materials. These corrals have become centres of general and regular veterinary assistance. Thus, the conditions for increased livestock production are slowly evolving in these zones, and more and more farmers are finding themselves in a position to acquire cattle.

Conclusions

As conditions in post-war Mozambique improve dramatically over the next few years, efforts by the DPAP and other organisations will not only be able to stabilise the precarious situation of the cattle population in Tete province, but also to encourage the integration of cattle into the farming systems. Animal traction is seen as a priority for this area, as it possesses the tradition. However, the crucial constraints of lack of animals, implements and credit schemes must be tackled both by the national support system as well as by organisations working in animal traction in the provinces. Only in this way can farmers maximise the potential for animal traction in Mozambique.

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