

Animal traction development in Iringa Region, Tanzania: project approaches and future requirements

by

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Abstract

This paper reviews the performance of animal traction activities carried out by different projects, past and present in Iringa Region, Tanzania. Animal traction is not well developed in Iringa Region, although there has been limited spread of the technology through natural diffusion. The performance of the projects has been poor, mainly due to the adoption of top-down non-participatory approaches which led to inappropriate selection of implements and poorly-designed training schemes. Animal traction has the potential to increase food security in the region and should continue to be promoted actively. Natural diffusion is an effective process but is very slow and cannot keep up with the rapid increase in population. A participatory approach that combines bottom-up and top-down approaches to create a dialogue is necessary. The use of single animals for traction should be promoted. Since income from cash crops is generally low, privatised self-supporting training programmes would not be viable so government/donor intervention is still necessary.

Introduction

The use of animals, particularly oxen and donkeys, in Iringa Region can be traced back to the early 1930s. Donkeys have been in use in the semi-arid zone of Iringa District since well before this time. This is because donkeys were mostly common in the central part of the country and because the region has an agroecological zone (zone 16) where donkeys do best so that it was easy for them to be used much earlier. The donkeys were originally used as pack animals; only much later were they used for tractive purposes. Ox traction started in the 1930s when it was introduced to parts of Mtwango (Njombe District) and Malangali (Mufindi District) by Christian mission posts. Transfer of the technology was by natural diffusion, ie people learning from others by seeing the animals working on *shambas*. Spread of the technology was rather slow and took

a long time to reach distant areas. However, it is effective because it is demand-driven. Use of animal traction continued to increase slowly up to and after independence. In the effort to increase agricultural production one way was to bring more land under crop production and human labour was a limiting factor. At the time the population was about half of what it is today and there were still large areas of uncultivated fertile land. The limiting factor was power availability. Previous attempts at tractorisation had failed to achieve the desired goal.

When the government shifted its emphasis from tractorisation to animal traction in the mid 1970s, the districts within the region used development funds to establish about six Ox Training Centres (OTC). These training centres operated very briefly and then closed due to shortage of funds. The method of transfer of technology was top-down with the government extension workers as active players and the clientele as passive players. In 1978, the European Economic Community (EEC) funded Iringa Region Agricultural Development Project (IRADEP) started working again on oxenisation development in the region. Activities included the rehabilitation of old ox-training centres which involved the construction of staff houses, cattle bomas, buildings for implement storage and classrooms. An extra ten training centres were constructed. Other activities included procurement of implements, and carrying out farmer training. IRADEP made a significant impact on animal traction. In terms of funding, it was the largest single animal traction drive in the region since independence.

In 1994, the International Fund for Agricultural Development (IFAD) started the Southern Highlands Extension and Rural Financial Services Project (SHERFSP) to train 600 farmers in 6 years. Emphasis was placed on training women.

Sasakawa Global 2000 has also begun a farmer training programme. HIMA-Iringa has a project trying to reduce the workload of women by using donkeys as pack animals and CONCERN also has a small project. It is hard to say whether the activities of the different projects are coordinated.

Review of animal traction projects

IRADEP Project

Success of the project

The IRADEP project created a great deal of awareness of animal traction in most rural areas, especially in the use of the plow. A total of 10 ox-training centres were constructed, although one was not completed. Each training centre had a trained carpenter and blacksmith. According to the project report 7,000 farmers received training from 1977–1981 and 1982/83–1985/86. The frequent trips to the villages enhanced the awareness raising since at that time most of the vehicles in the area belonged to the project.

Shortcomings of the project

In many ways the project seemed busy for nothing. It should be noted that even before the IRADEP project had begun, there was a good number of farmers using animal power and the project appears to have helped to increase only a smaller proportion of the total. Moreover, most farmers adopted ox-drawn plowing only, a technique which most already knew.

The project brought a variety of implements which included ridgers, weeders/cultivators, multipurpose toolbars, plows, planters etc. which were placed at the ox-training centres so that farmers could learn how to use them and eventually purchase them. Except for the plow, none of the implements has been used effectively by farmers. In a few places where animal traction is fairly well-developed, the plow is used for weeding instead of a cultivator, simply because cultivators are not available. In places where ridging is usually preferred over flat cultivation, ridging using animal-drawn implements was not adopted and farmers switched to flat cultivation despite all the advantages of ridges to soil and moisture conservation.

Planters were placed at ox-training centres for training purposes even though it was irrelevant to do so because planters of proven performance were unavailable in the region. Moreover, the

planters at the ox-training centres were very expensive, and the planter components broke easily since most were made of cast iron. They were complex and could not be easily repaired by the farmers. The decision to bring in planters was unnecessary. It may have been as a result of the 'complete package' approach.

The *Ariana* multipurpose toolbars were unnecessary since it was an irrelevant and expensive implement which farmers were not ready to adopt.

Follow-up on the project activities was poor, so that the reported numbers of farmers that were trained is hard to accept. Farmers trained at the training centres were expected to carry out similar training in their villages which were then regarded as an Ox Training Unit (OTU). There was a system whereby Tsh 50/- was paid to the trainer for each pair of oxen trained. This became an incentive to cheat in collusion with unscrupulous village leaders. For this reason the figure of 7000 farmers trained is unrealistic.

Courses at the ox-training centres lasted 30–90 days. This is a very long time for any farmer and in particular the poorer ones. Effective training was between September and late February which was the time when farmers were most busy. The result was that primary school leavers were sent for training and farmers themselves were not trained.

The project did not give high priority to women. It is apparent that women, the main producers of food, would be excluded from such a long training session.

Ox carts were manufactured at a government district agricultural workshop (Mafinga in Mufindi district). The body of the cart was made of hardwood timber, and the wheels were made of steel. The workshop had problems ranging from managerial and administrative problems to the cart design. Farmers did not like the metal wheels and the wooden bearings were inappropriate. The metal wheels performed poorly in sandy areas. It may be that the decision to use metal wheels and wooden bearings was in accordance with a misguided misconception in which appropriate technology was equated with substandard technology. There are few metal-wheeled ox carts being used.

There was a general weakness in the management of the animal traction project. The whole project was under the direction of a regional oxenisation officer who apparently was not trained adequately. The minimum training at that level should have been a Diploma.

IFAD-SHERFSP

Success of the project

This project started in late 1994 so that it is difficult to fairly judge to its performance as yet. The project has shifted its emphasis to women by stipulating that women must constitute at least 30% of participants in each training session. This is a positive move in the right direction.

Shortcomings of the project

The project trains only 100 farmers per annum so over 6 years it will have trained about 600. The figure of 100 farmers per year is very low. It is possible to train up to three times this figure without budgetary constraint.

Farmers are brought to a central point, exposed to very brief theoretical and practical training for about 3 to 4 days per year and that is it. Additional training sessions are not offered, nor are follow-ups carried out to assess the effectiveness of the training sessions. The course content is mostly textbook notes which have little relevance to practicality. The training is done once at the beginning of the season and is repeated the next year for new farmers. The short duration of the course means that farmers have to learn much new information in a short time which means that farmers can absorb very little of the course content. The interest of the project appears to be in quantitative successes rather than in both the quantitative and qualitative ones.

Future strategies for animal traction in Iringa Region

As discussed above, there have been a number of shortcomings in the way animal traction projects in Iringa Region have been and are being implemented. This explains why the activities are not sustainable when the projects have ended. For future development and sustainability of animal traction in the region, there are two alternative approaches available. The first is to leave things as they are and hope that the technology will spread through natural diffusion, as it has done in the past. The role of the government should be to

introduce new technologies which have been proven in areas where animal traction is well-developed. This may be supported by the fact that Rukwa region is one of the leading areas in the use of animals for tractive purposes although it is a product of natural diffusion with little external intervention.

The weakness with this approach is that with the low productivity to land and labour and increasing population, the region may continue to face unreliable food security. Natural diffusion cannot keep pace with the ever-increasing demand for food. The number of animals being used for tractive purposes is very small and with natural diffusion the technology will take a long time to reach the remaining farmers.

The second approach is a deliberate one in which the government, through its extension workers, engages in a dialogue with farmers and together they identify problems related to farm power issues and develop solutions to these problems. The farmer has a great deal of experience and the extension worker, in liaison with the researcher, has new technology and practices to offer the farmer. The new technologies are only good in as much as they solve the identified farmer problems. The second alternative would be preferred by the author since it offers an opportunity for accelerated development.

Suggested animal traction strategy

Participatory approach

Experiences elsewhere have shown that participation of farmers in the whole process of planning and implementation has led to sustainability of project activities. The top-down approach alone has not worked and instead a bottom-up approach with a little top-down intervention, in other words a dialogue, should be used. During a dialogue with the farmer the available resources, the real problems and their prioritisation will be learnt.

Selective technology transfer approach

All animal traction technology packages are suitable, but some have a higher priority. For instance, while mechanising seed sowing is good, mechanising land preparation is more important from the point of view of the farmer. Land preparation is important because it requires more time and labour than sowing. In semi-arid areas

farmers would like to reduce the number of hours spent for primary cultivation since it can lead to timeliness penalties related to low moisture availability in the soil. Using animal traction to perform this operation can make the difference between a bumper crop and a poor harvest. Another important operation is weeding, since it is usually carried out more than once. Transport is another important operation for moving inputs to the farm as well as moving crop harvests to the home or market. These are the most important operations which should be targeted as a priority.

Farmer training

The timing of training should make sure that real farmers do attend. Emphasis should be on practical training rather than theory. Plowing and carting training may be carried out during the dry season. Weeding may be carried out during the dry as well as the rainy season. The implements used during training, especially weeders, should be readily available in the area at the time of training.

Training of village extension workers

Most village extension workers know very little about animal traction technology. Most do not know even the basics of animal traction technology. There is a need to improve the curriculum of the agricultural training institutes that offer extension certificates.

Single animals and promotion of donkeys

In all the projects animals have been used in one or more pairs. It is thought that the time has come when single animals have to be used. The following reasons call for greater emphasis on use of single animals:

- for operations such as weeding single animals perform better than pairs

- the number of animals, especially cattle, in the region has been affected due to a combination of deaths from disease and inadequate feeding and a high demand for beef which has led to large numbers going for slaughter. Cattle numbers have fallen in absolute terms as well as in relative terms when compared to population growth.

- the price of animals, especially oxen, is very high so it would do a great service to the farmer if single animals were used
- women as individuals or in groups can easily adopt and handle single animals
- use of donkeys must also be encouraged since they are cheaper and are easy to maintain than cattle. They can be used as pack animals in highly dissected mountainous areas.

The role of ox-training centres

Currently the central government is in the process of rationalising the mechanisation services and is considering whether to continue owning ox-training centres. The alternatives may be, in the short- to medium-term, collaboration between the government and farmer organisations/cooperatives on modalities of ownership and running the centres. Farmer organisations and cooperatives are still not strong enough to carry out this difficult task.

Most farmers are subsistent to a large extent, although some have moved substantially towards production of cash crops. Therefore, to run the centres based on demand may not work. At the moment, the centres are designed as centres of innovation and try to offer free services. To run them sustainably the organisations have to charge a small fee to cover expenses. For the same reason they cannot be run as private entities, at least at present. The central government still has a role to play in ox-training centres and if accelerated development in animal traction is felt important it should not relinquish ownership of them for the time being. If the central government has to stop owning them, then each district local government could own one ox-training centre.

Conclusion

There is still a high potential for developing animal traction in Iringa Region. More has to be done and it must take into consideration the farmers' situation and their priorities. Extension workers must be well trained in the area of animal traction and follow-ups to farmer training must be carried out.