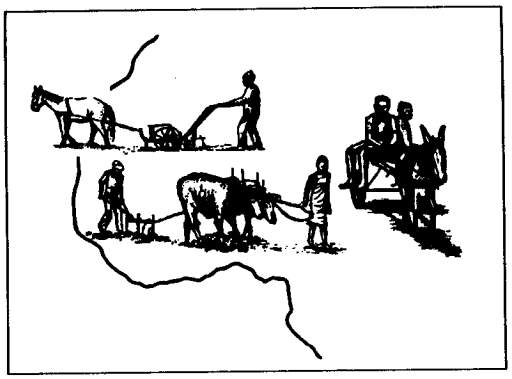

Animal Traction in Sierra Leone

Impact, constraints and experiences

Constraints to the extension of draft animal technology in the farming systems of Sierra Leone

by

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Abstract

Between 1980 and 1988, the Work Oxen Programme (WOP) helped introduce 800 pairs of work oxen in Sierra Leone. Further development faces serious constraints. Many crop farmers think it belittles them to handle cattle. They still hope for the resumption of cheap tractor-hire schemes, which are also favoured by some decision makers. Removing tree stumps from fields to allow plowing requires much labour. Cattle prices are increasing. Obtaining animals can be difficult as cattle are not readily sold by cattle-owning tribes for whom cattle symbolize status and wealth. The Work Oxen Programme has set up a scheme to purchase young bulls for eventual resale to farmers and WOP is investigating the use of cows as draft animals. Work oxen are idle for most of the year and farmers are unaware of options for using animal power for post-harvest operations. Poor animal health is a major constraint. Although investment in animals is profitable, as their value increases with time, the initial cost is the biggest obstacle to the adoption of animal traction. The WOP is liaising with development agencies to establish credit schemes.

Introduction

Animal traction technology was introduced in the Northern Province of Sierra Leone, in the 1920s, both in the Mabole Valley, Bombali District, and also in parts of the Koinadugu District. In 1980 when the national animal traction programme, the Work Oxen Programme (WOP), started its extension programme, there were no more than 50 pairs of oxen in the entire country. In fact government authorities and development agencies did not even know that any work oxen were in use since their efforts were concentrated on cheap tractor hire schemes. These schemes are no longer in operation and farmers have reluctantly gone back to their traditional hoes and cutlasses. From 1980 to 1988, the activities of WOP has resulted in about 800 working pairs. This increase would appear very successful, but the figure should have been three to four times higher, had there not been some serious constraints. The problems have included socio-ethnic barriers, lack of logistical support, animal health problems, high initial capital cost for farmers, the limited annual use of draft animals and the limited availability of animals and equipment. The majority of the 800 sets are concentrated in those areas where the technology has persisted since the colonial period. In new areas, which includes about 90% of the country, the constraints mentioned are clearly seen.

Constraints to animal traction

Socio-ethnic factors

There are 13 recorded ethnic groups in Sierra Leone of which only four groups, the Fulanis, Mandingoes, Yalunka and Korankos have easily accepted work oxen in their farming systems. The obvious reasons are:

- animal traction technology was first introduced to these groups;
- cattle husbandry is widespread in the areas where they live;
- there has been cross-border influence from Guinea where the animal traction is widely used, particularly in Futa Djallon and Upper Guinea.

The bulk of the population of Sierra Leone, including the major Temne, Mende, and Limba ethnic groups have yet to be convinced of the value of using animal traction technology in their farming systems. The reasons are as follows:

- Traditionally these people are crop farmers and generally consider that it would belittle them to handle cattle.
- These people have long enjoyed cheap tractor hire schemes. Despite the closure of the government hire service two years ago, farmers are optimistic that it will resume.

Most decision makers, both politicians and civil servants, belong to one of these main crop-farming ethnic groups and WOP is faced with difficulties when it seeks government support to expand animal traction technology. The authorities still request donors for assistance in order that subsidised tractor hire schemes may be resumed, to satisfying the demands of their tribesmen. The Work Oxen Programme has attempted to overcome this hurdle by organising shows and the National Ox-Plowing Competition, designed to influence both farmers and the authorities.

The nature of the terrain

There are three major farming ecologies: swamps, uplands and bolis (large flat areas subject to periodic flooding). Upland farming, based on mixed cropping and bush-fallow, accounts for the largest farmed area. Unfortunately animal-powered field operations are more suited to the stump-free conditions of the bolis and swamps. If upland fields were destumped and farmers encouraged to practise intensive cultivation or rotational cropping, animal traction technology could be widely adopted and farmers would move a step towards commercial agriculture.

Logistics

Donor support to the Work Oxen Programme is limited to capital equipment purchases and technical advice. The recurrent costs needed to enable the staff to work with the farmers is assumed to be the exclusive responsibility of the national government. For various reasons, the government hardly ever manages to meet its responsibilities. Low staff wages combined with untimely availability of fuel and spare parts have seriously retarded the expansion of the technology to farmers.

In attempting to resolve the logistical problems, WOP embarked on a policy of strengthening its relations with farmers. It also spread its support base by working with a variety of development agencies and non-governmental organisations. Both approaches have proved fairly successful but the Work Oxen Programme still has little or no influence over key decisions.

The availability of animals

The cattle population in Sierra Leone should be sufficient to satisfy the requirement for work oxen in the next few decades. However, the availability of these animals from the local herds is a big problem. Among the cattle-owning ethnic groups, cattle are regarded as symbols of status and wealth. Cattle owners often only put their cattle on the market when they are seriously in need of cash. When cattle do become available, there is competition between their use as work oxen and their disposal for meat. This competition has led to a rise in the price of animals.

In view of this serious constraint, the Work Oxen Programme set up a scheme to improve animal availability for the small farmers. Young bulls are bought during the peak disease period, July to September, and are well cared for until they become mature enough for use as work oxen. The WOP also intends to carry out research into the use of cows as draft animals.

Diversification of operations

The traditional use of draft oxen only for primary cultivation is not adequate. Farmers ef-

fectively use work animals for 2-3 months in a year and for the rest of the year the animals are left idle. This situation reduces the profitability of the technology since more time is spent simply maintaining the animals than using them.

Throughout the year, farmers, particularly women, spend significant time on post-harvest processing operations. If draft animals were used to alleviate the difficult processing operations such as milling, palm kernel cracking, cassava grating and water pumping this would encourage a wider adoption of the technology in Sierra Leone. The German Appropriate Technology Exchange (GATE) has assisted WOP to install animal-powered gear systems, for on-station trials for milling, pumping and crop-processing. The Work Oxen Programme developed an ox-cart design using metal wheels, and these are in high demand. The use of animal power for seeding, weeding, harvesting and ridging requires more research and development.

Health

Animal health is a big problem at village level. Like many other draft animal programmes, the Work Oxen Programme initially underestimated the importance of a veterinary component. In 1985, a mortality rate among working animals of 20% was caused by a heavy infestation of *Stomoxys* flies and a simultaneous national shortage of insecticide. Despite the resistance of the indigenous N'Dama cattle to diseases like trypanosomiasis, they are still prone to a variety of endemic diseases and they are challenged by a variety of different endo- and ecto-parasites including worms, liver flukes, ticks and biting flies. A few casualties have been attributed to farmers overworking their animals.

In view of the animal health problem, the Overseas Development Administration (ODA) funded an Animal Health Revolving Fund, administered by WOP. There are four essential chemicals provided to farmers: salt licks, insecticides, anti-worm tablets and healing oil. The revolving fund has been a tremendous success. However, further strengthening of the veterinary component is essential to combat endemic and epidemic diseases. The loss of an animal can be a very big setback to a farmer, delaying farming operations and jeopardizing the continued use of animal traction.

Investment capital

The initial capital needed to invest in work oxen technology is high for the small subsistence farmers in Sierra Leone. This is a major limiting factor in the expansion of animal traction technology. There is no doubt that the technology is economically viable for small farmers, because plows used since the 1920s are still in use today and one old ox is normally sold at a price equivalent to two young ones. The technological package appreciates in value, but affording the initial purchase of the package is the crucial problem.

The Work Oxen Programme has persuaded various development agencies to develop work oxen credit schemes. With financial assistance from the French Embassy the WOP recently started one loan scheme for farmers who do not have access to other loans. The expansion of work oxen technology in Sierra Leone is likely to be stimulated by the further provision of loans.

Conclusion

There is great potential for expanding the use of draft animal technology throughout Sierra Leone. The constraints are not insurmountable but they have to be reckoned with. Lack of good veterinary services, inadequate credit schemes, and insufficient support for recurrent programme costs all constrain the expansion of work oxen technology in the country.

Résumé

De 1980 à 1988, le Work Oxen Programme (WOP) a contribué à l'introduction de 800 paires de boeufs de trait en Sierra Leone. Les développements futurs seront confrontés à

des contraintes importantes. De nombreux fermiers considèrent la conduite d'animaux comme une activité dégradante. Ils espèrent encore, et avec eux certains décisionnaires, que les programmes de location de tracteurs à des prix avantageux reprendront. L'essouchage précédant tout labour représente une quantité de travail considérable. Le prix du bétail monte. L'acquisition du bétail est difficile car les tribus d'éleveurs ne se séparent pas aisément d'animaux qui sont pour eux les symboles de leur richesse et de leur position sociale. Le WOP a mis en place un système d'achat et de revente de boeufs de trait et étudie les possibilités d'utilisation des vaches pour le labour. Les pratiques agricoles courantes laissent le bétail de trait inoccupé pendant la majeure partie de l'année. Les fermiers ne sont pas conscients des avantages qu'offre la traction animale pour les opérations post-récoltes. Les problèmes de santé des animaux sont considérables. Bien que la valeur des animaux augmentent avec le temps et constitue un bon placement, le coût de l'investissement initial demeure l'obstacle le plus important au développement de la traction animale. Le Work Oxen Programme négocie actuellement avec les agences de développement pour mettre en place des systèmes de crédit.