



Animal Traction in Nigeria

Impact, constraints and experiences



Animal traction in Nigeria: impact, constraints and current initiatives

by

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Abstract

The need for increased agricultural production, the economic depression, the introduction of the Structural Adjustment Programme and the devaluation of the Naira are favouring animal traction development. The potential number of draft oxen based on 7.5% of the national cattle herd is estimated at about 900,000. Animal traction users are estimated to have nearly doubled since 1964, to 70,000 in 1987. Animal traction is commonly used in Bauchi and Katsina states, but is very limited in the Sudanian savannas of Kaduna.

Various organizations and projects provide credit facilities to the farmers for the purchase of work oxen and implements: the Kano State Agricultural and Rural Development Authority (KNARDA), the Sokoto State Agricultural and Rural Development Authority (SARDA), the National Livestock Development Projects (NLDP), and some commercial banks. KNARDA and SARDA have set up several training centres for both men and draft animals in various locations of their project areas. The animals are worked for two or three years and then sold for beef.

The constraints include lack of knowledge and availability of equipment, high cost, transportation to purchase sites, differences in cropping patterns, disease outbreaks, use of too young animals, lack of suitable implements. Research programmes should unatysse the situation and encourage the widespread use of animal traction. The supply of animals and equipment should be developed on a loan basis, at a subsidized rate. More local manufacture of animal traction equipment needs to be developed.

Introduction

Nigerian agriculture suffered a tremendous crisis caused by the oil boom in the early 1970's. Food and cash crop production levels dropped and accrued oil export revenues allowed for a massive importation of agricultural products. Rural migration to urban areas intensified and the resultant labour force depletion further affected the much needed agricultural production.

The oil glut of the 1980s caused a fall in oil revenue and food importation. Policy makers realised that more food had to be nationally produced. Due to the migration of labourers to the cities and the increased school enrolment of young men and women, the rural labour force appeared insufficient to produce the needed increases in food and cash crop production as 90% of the food and raw materials are produced by the smallholder farmers. Agricultural mechanization through tractorization and animal traction became the only viable answer.

The introduction of the Structural Adjustment Programme (SAP) two years ago in Nigeria, leading to the devaluation of the Naira (N) from about US\$1.30 to less than US\$0.25, has brought serious doubts about the viability and profitability of agricultural tractorization. The importance of animal traction is therefore gaining ground, especially in the Sahelian and the Sudanian zones. Even in the subhumid zone of the country, efforts are being made to spread the use of animal traction.

In areas of promotion, several agricultural development projects are promoting the use of animal power as a mean of increasing agricultural production. Credit facilities are opened to local farmers, and training centres are being established for farmers and draft animals.

Animal traction in Nigeria

The White Fulani, Sokoto Gudali and Zebu cattle are the main breeds of cattle employed for traction in northern Nigeria. Animal traction using the ox-drawn ridger appeared in northern Nigeria between 1925 and 1930 (Pingali, Bigot and Binswanger, 1987), and was used by various farming families growing cash crops. Its spread became more widely recognized when Fricke published statistics on the number of mixed farmers which had grown from just three in 1928 to 32,261 farmers in 1964 (Fricke, 1978).

Since then, animal traction utilization has gradually increased in the Sudan and Sahelian areas. However, there has been little serious attention from the government research institutions in terms of documenting the progress being made in this area. Our conservative estimate is that the number of mixed farmers and hence animal traction users must have more than doubled since 1964 to at least 70,000 in 1987.

A recent and rapid appraisal survey on crop-livestock interactions in Bauchi, Katsina and Kaduna states indicates the extensive use of animal traction in four out of the five sites visited and summarised below:

In Kashere, a small village of the Pindiga district (Bauchi), it is reported that most households have at least one pair of work oxen and many have up to four pairs. Ox-drawn plows are the most common land preparation tools in the area. They have been in the area for a long time and are reported to last for up to 20 to 40 years with the share being replaced every three years. The Bauchi State Agricultural Development Project sold plows at a sub-

sidized rate of N195 to farmers (Ingawa, 1987), while its market price was estimated at about N300.

Similarly, at Barhin (Bauchi) further north, animal power is extensively used for land preparation. Draft oxen are often used for only one or two years, before being fattened, sold and replaced with younger animals. This method provides the farmers with young work animals for their crop farms as well as some cash revenue. Oxen are also used for transportation, over 40 oxcarts were counted in the village. The price of the plow ox in the area varies from about N800 to N1,200 in mid-1987. The average price of a cart is about N600.

Unlike in Bauchi and Katsina areas, animal traction is very limited in the more humid areas of the Sudan savannas. In the same survey, a village near Kachia (Kaduna) was noted for a total absence of animal traction use. A few cattle owners were aware of the technology and had knowledge of the operations. When asked to explain why they did not use animal power, they answered that nobody used it in the area. There must be other more valid reasons for this situation despite the availability of cattle in the area.

The rate of adoption of animal power for farm operations could have been much improved, if it had not been for the conflicting interests of the crop growers and the cattle herders. In addition, farm sizes tend to be rather small and can be managed by manual labour. However, the recent changes in economic trends in Nigeria, and the increasing population are introducing new factors in this situation. Agricultural policy makers realised the need for mechanization of Nigeria's agricultural production through tractorization and animal traction in order to increase food production. The advantages of animal traction for cultivation are evident in terms of land expansion and labour savings, whereas crop yield is essentially linked to soil and crop type (Pingali *et al.*, 1987). Several agricultural de-

velopment projects in Nigeria are now encouraging the use of animal power with the objective of increasing the agricultural production.

The Kano State Agricultural and Rural Development Authority (KNARDA), the Sokoto State Agricultural and Rural Development Authority (SARDA), the National Livestock Development Projects (NLDP), and some commercial banks in Nigeria are making soft loans available to small farmers for the purchase of work oxen and implements. KNARDA and SARDA have set up several training centres for both men and draft animals in various locations of their project areas.

The KNARDA has distributed 61 pairs of work oxen with implements on a loan basis since 1984, but hopes to achieve a target of 200 pairs of work oxen and implements by 1989. Also, the Bank of the North in Kano and other areas in the Sudanian zone has offered 150 work oxen as loans in 1987, and more are still being considered. The training period for work oxen and farmers at the training centres is approximately three weeks.

The NLDP aims at breaking the historical gap between crop production and livestock rearing. To this end, since 1987, the NLDP under its second livestock development programme is providing direct credit facilities to farmers, as well as negotiating with commercial banks to provide loans to small-scale farmers for the purchase of work oxen and implements. The loan repayment period is between two and three years, farmers being expected to repay their loans by instalments from the proceeds made by hiring out draft animals to client farms. Through this arrangement, NLDP hopes to increase both crop and animal production by introducing animal husbandry skills to the farmers. These work oxen are fattened and sold for beef after two or three years of active traction life, and replaced by new work animals which will in turn be sold for beef. Animal feed is available from crop residues and supplements like cottonseed

cake, wheat and corn offals, mineral licks and molasses are provided all year round and particularly during the dry season by the NLDP at subsidized prices. Animal health services are provided for through vaccinations and routine treatments at the veterinary centres already existing all over the area.

Constraints to animal traction

A study on the social determinants of animal traction in central Nigeria (Blench, 1987) indicated that lack of knowledge is a major cause of the failure to spread animal traction into more southern parts of northern Nigeria. Another constraint is the poor availability of equipment, its relatively high cost, as well as its transportation to the purchase sites. The use of animal traction may not spread easily to more southern locations due to differences in cropping patterns. For example, in the southerly parts tubers are the predominant crop and they require the land to be prepared into mounds, a task for which manual labour still appears to be better adapted.

Other limiting factors are disease outbreaks, such as contagious bovine pleuropneumonia (CBPP), rinderpest, combined with lack of animal feed during the dry season. Boyd and Ayok (1974) indicated another constraint, which is the use of too young animals, bought at low cost for a lucrative resale three to four years later. According to a recent survey (Ingawa, 1987) the period of resale in some areas has been reduced to one or two years, indicating perhaps a trend towards the use of larger animals, which need less time to be fattened. Lack of suitable implements is another constraint. Poorly weeded fields lead early adopters of the ox-plow to revert back to manual weeding (Boyd and Ayok, 1974). Local farmers may not be familiar with the equipment and the adjustments needed for effective work. The latter case was seen in subhumid Nigeria, on a site where ILCA is trying to introduce the use of animal traction to work both *fadama* land as well as upland farms.

Conclusions and recommendations

From this brief overview of the use of animal traction in Nigeria, the following conclusions emerge:

- The use of animal traction for farm operations is spreading to hitherto non-users, and is developing further among traditional user areas even though this is not clearly documented.
- It seems that animal traction awareness is high, but detailed knowledge of animal handling and equipment management is lacking.
- Currently, with the structural adjustment programme in the country, animal traction has a clear cost advantage compared to tractorization. However, buying draft animals and animal traction equipment is still beyond the reach of most farmers.
- The supply of animal traction equipment is limited.

Based on the above, it is recommended that research programmes should be carried out on all aspects of the use of animal power in farm production in Nigeria. In order to encourage the widespread use of animal traction, it is recommended that suitable ways should be found to supply animals and necessary equipment to farmers on a loan basis, possibly at a subsidised rate. Local manufacture of animal traction equipment needs to be further developed.

Résumé

La nécessité d'augmenter la production agricole, la dépression économique, le Programme d'ajustement structurel et la dévaluation du naira favorisent le développement de la traction animale. Le cheptel de trait potentiel calculé sur 7,5% du cheptel national actuel compte 900.000 têtes. Le nombre d'utilisateurs de la traction animale depuis 1964 a presque doublé pour atteindre 70.000 en 1987. La traction animale est couramment utilisée dans les provinces

de Bauchi et Katsina, mais reste très limitée dans la province de Kaduna.

Divers organisations et projets offrent des systèmes de crédit aux fermiers pour l'achat d'animaux de trait et d'équipements : Kano State Agricultural and Rural Development Authority (KNARDA), Sokoto State Agricultural and Rural Development Authority (SARDA), National Livestock Development Projects (NLDP) et quelques banques commerciales. KNARDA et SARDA ont établi plusieurs centres de formation et de dressage en divers points de leurs zones respectives. Après une brève carrière en culture attelée, les animaux sont vendus sur le marché de la viande.

Les contraintes rencontrées incluent le manque de connaissance, le manque de disponibilité des équipements, leur transport vers les points de distribution, la variété des modes cultureaux, les maladies, l'utilisation d'animaux trop jeunes, le manque de matériel adapté. Des programmes de recherche devraient analyser la situation et encourager la diffusion de la traction animale. L'approvisionnement en animaux et matériel devrait être développé grâce à un système de prêts à un taux subventionné. La fabrication locale des matériels de culture attelée devrait être développée.

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