

# Management of Work Oxen in Sierra Leone and its Implication for Research

Bai H. Kanu and Francis A-R. Sankoh\*

## Abstract

*An outline of the training and management of work oxen implemented by the Sierra Leone Work Oxen Programme is presented. This programme aims to develop low-cost management practices and technology that will enhance both the profitability and sustainability of Sierra Leone agriculture. The paper further describes the constraints on animal traction and future research implications and needs. In conclusion, the need for adaptive research and proper management is stressed if farmers are to benefit from the technology.*

## Introduction

Work oxen account for only 1% of the national herd of cattle and are utilized by only 5% of the farming population. They play an important role in the agricultural development of the small scale farmer in primary cultivation (ploughing and harrowing), and village transport. Work oxen also provide meat, hides, manure and income.

The initial investment in work oxen technology for the small farmer is very high. Farm inputs such as fertilisers and herbicides are costly and often not available. The oxen are often poorly fed, managed and underutilised. With this knowledge in mind, the Work Oxen Programme has identified two major areas of research and development for work oxen in Sierra Leone:

- In the northern districts where over 75% of the cattle population is found and 90% of the work oxen technology is established, there is the need to intensify and diversify the use of work oxen to increase their contribution to farm and rural economy. The quality of dry season feeding and the working patterns of the oxen also must be improved.
- In other districts of the country, especially in the sub-humid districts where work oxen are not well established, identification of the constraints to work oxen technology is needed.

The main aim in both cases is to develop suitable low-cost management practices and technology that will enhance both the profitability and sustainability of Sierra Leone agriculture.

\*Work Oxen Programme, P.O. Box 766, Tower Hill, Freetown, Sierra Leone

## Intensification and Diversified Use of Work Oxen in Sierra Leone

At present, 95% of work oxen usage is for primary cultivation (ploughing and harrowing) in swamps, bolis and uplands for rice and groundnut cultivation. The use of work oxen in vegetable cultivation is becoming increasingly important especially in the Koinadugu district in the northern province where vegetables are cultivated in the swamps during the dry season, and in the uplands during the rainy season. The Work Oxen Programme seeks to intensify and diversify the use of work oxen in the dry season cultivation for the production of more food crops. The Work Oxen Programme, in collaboration with the Rokel Leaf Tobacco Development Company (RLTDC) is using oxen to prepare ridges for growing tobacco. The use of work oxen in the cultivation of corn and egusi in the Tonkolili district is becoming increasingly important.

In the other districts where work oxen technology is less established, the use of work oxen is limited to primary cultivation and transport.

## Management of Work Oxen in Sierra Leone

### Selection of Work Oxen

Entire N'Dama bulls 2-3 years old are purchased from the weekly cattle markets in the Koindaugu and Bombali districts by Work Oxen Extension Agents and/or Work Oxen Contact Farmers. These extension agents/contact farmers are provided with the following criteria for the selection process:

- stocky animals with short legs
- broad chest

- strong feet
- strong muscles under a fine, short-haired, glossy coat
- powerful short neck
- thick nape, wide head, strong and wide-based horns of medium length and angled forward
- strong healthy bulls with no external parasites.

Selection of work oxen is also done from herds or areas where there have been no recent outbreaks of epidemic diseases, hence the need for contact farmers. Contact cattle farmers/rearers also serve as a source for work oxen. The availability of work oxen is being affected by the demand for meat, because about 60% of the cattle slaughtered for meat are bulls.

### **Preparation of Work Oxen**

Once the bulls have been brought to the station, routine treatments for worms, wounds and external parasites are carried out. During this period the animals also get used to frequent handling by oxen trainers.

Castration is generally done using a Burdizzo bloodless castrator. Bulls should be over 2 years before castration, to allow for the development of a strong neck that is aided by male hormones. Castration can be done throughout the year. Each castrated bull is fixed with a nose ring after punching a hole in the nose septum. The hole should be made as far from the front of the nose as possible to reduce the danger of the nose tearing, and should be punched at least a week before training begins. The sharp points of the horns should be cut off with a hacksaw to minimise the risk of injury to humans or other animals. All these operations – castration, nose-punching and removal of horn tips – should be carried out by a competent field supervisor/assistant.

### **Training of Work Oxen**

The training period normally lasts between 3 to 4 weeks and depends on the experience of the oxen handlers, the age, character and condition of the animal. The training procedures include:

- Familiarization: getting the animals used to the trainers.
- Yoking and reining: these should be fitted after 4–5 days of familiarisation.
- Training to walk: once the animals have been yoked, a chain is attached to the middle of the yoke, which is then hooked to a large log. The

reins from the nose or horns are used to control the movement of the animals.

- Command: consistent commands in a local language are used from the very beginning. Words should be clearly distinguishable from each other.
- Training to plough: after 14 days of training, the log should be replaced by a plough.

The animals where possible also need to be trained to perform other operations such as:

- ploughing and puddling
- harrowing
- ridging and weeding
- weeding
- groundnut lifting

These later operations are being done on station. Farmers at the moment are more interested in ploughing, harrowing and transport.

### **Maintenance of Oxen after Training at Farm Level**

#### **Feeding**

All oxen are grazed during the day and brought to sheds near dwelling houses in the evening where they have no opportunity to graze at night. At present it appears animals have enough grazing time during the day since farm operations with them normally end around 12 noon. Crop by-products are abundant during the rainy season. The major problems during the dry season are the low nutritive value of the grass and the burning of the grazing areas. In many areas, inland valley swamps are available where animals graze during the dry season. In Work Oxen stations, stall feeding using crop by-products is used and farmers are encouraged to do this in their farms.

#### **Health Care**

The Work Oxen Programme has a comprehensive animal health unit responsible for treating work oxen in the programme operation areas, and a drug-revolving fund to ensure the availability of drugs at all times.

#### **Shelter/Paddock Maintenance**

The Work Oxen Programme ensures that all work oxen are properly sheltered. Paddocks are constructed at the back of houses but in some parts of Koinadugu district, one or two pairs of oxen are sheltered in a well-ventilated room at the back of a house. During the dry season when oxen are not

frequently used, some farmers send their oxen to local cattle settlements.

### **Constraints**

#### **Availability of Drugs**

Basic drugs and vaccines are not available from the Veterinary Services Division and in times of disease outbreaks many work oxen are affected.

#### **Feeding During Dry Season**

The problem is preservation rather than shortage, the indiscriminate burning of grazing lands and lack of knowledge of the use of rice straw and other crop by-products. The Work Oxen Programme has started training on stall feeding during the dry season.

#### **Transportation**

For effective implementation of the Work Oxen Programme, there is a need for appropriate transport for extension staff.

#### **Availability of Bulls**

The competition for bulls between farmers and butchers is bound to continue, and unless steps are taken, the shortage of bulls for work oxen will become acute in the near future.

#### **Availability of Appropriate Harnessing and Grazing Ropes**

The availability of appropriate harnessing and grazing ropes is a major problem. Grazing oxen that are not tied and controlled can destroy growing crops.

### **Research Implications and Needs**

Research into the effective use of draught oxen should be geared to:

- Determining the nutritional requirements of the N'Dama cattle used as draught oxen.
- Determination of the nutritional value of the various forages available for grazing cattle.
- Determination of yield and adaptability of other tropical forages from outside Animal Research Centre.
- Determination of the productivity of the N'Dama under intensive management.
- Trials on the use of N'Dama cows as draught animals.
- The need to continue the investigation into the use of indigenous herbal medicine and local remedies for draught oxen.

### **Conclusion**

With work oxen technology gradually becoming important to the small farmer in Sierra Leone, its uses should be improved upon, especially in the northern districts. In the newly established work oxen areas, a thorough study of the constraints of work oxen technology establishment should be done, and a gradual introductory approach of the technology implemented.

Development of work oxen technology should always be accompanied by appropriate extension to farmers if the farmer is to benefit from the technology.

### **Résumé**

*Les méthodes de dressage et de conduite des boeufs de trait utilisées dans le cadre du programme Boeufs de trait en Sierra Leone sont brièvement décrites. Ce programme s'attache à mettre au point des pratiques et des technologies de conduite peu coûteuses susceptibles d'améliorer les rendements et la viabilité de l'agriculture sierra-léonienne. Les obstacles qui s'opposent à l'adoption de la traction animale et les perspectives et axes de recherche sont passés en revue. L'étude conclut à la nécessité d'entreprendre des recherches d'adaptation et d'adopter des méthodes appropriées de gestion permettant aux paysans de tirer profit des itinéraires techniques proposés.*