

# Improving animal traction technology in northern Namibia: past experience and apparent needs

by

D K Morrow

Ministry of Agriculture, PO Box 788, Grootfontein 9000, Namibia

## Abstract

*The social turbulence associated with a long civil war brings about wide-ranging alterations to cultural traditions and practices. In northern Namibia, the use of animal traction for crop production was severely affected by the recent war. The subsequent introduction of subsidised tractor plowing services is unlikely to bring about long-term benefits for the rural communities. Such services are not sustainable and have failed throughout Africa. However, some means of tractive power must be made available in order to raise the level of crop production and the standard of living of small-scale farming families in northern Namibia. Such communities require timely and adequate tractive power for primary land preparation and subsequent cultivation and weeding. The power source must be readily available and fully sustainable and must involve appropriate technology which the small-scale farmer can both adopt and adapt.*

*A project proposal covering several interrelated development problems has been submitted to the National Planning Commission for approval and funding. The project, based on testing and dissemination of animal traction, includes the training of oxen and their handlers, the development of farming systems based on animal traction and the establishment of small agro-industries to repair and manufacture equipment. Credit facilities to support such developments are also envisaged.*

## Background

For a variety of historical reasons, some going back almost 100 years, the northern districts of Namibia have suffered from severe economic and administrative neglect. As a consequence little development has taken place in Owambo, Okavango and Caprivi. (The names of the northern administrative regions of Namibia have recently changed—Okavango used to be known as Kavango. The old area of Owambo corresponds broadly with the new regions of Omusati, Oshana, Ohangwena and northern Oshikoto—see Figure 1.)

With population densities doubling over the past 30 years, the existing natural resource base has been both over- and under-exploited. The situation varies from location to location and can be well illustrated by considering two factors closely related to future progress in animal traction technology.

Animal health protection systems have been systematically applied in the three regions for many years, and these have led to more animals surviving to maturity. Unfortunately, these measures have never been supported by corresponding efforts to improve animal husbandry and management techniques. Thus, as the cattle population has risen, overgrazing has become more and more severe, resulting in progressive degradation of the fragile ecosystems. Unsustainable overgrazing now exists over the greater part of Owambo, especially over the central spine and western parts; all along the Okavango river within a variable belt of 5 to 10 km from water; and around the flood plains and seasonally flooded areas (*molapos*) of Caprivi. As the population densities of livestock, principally cattle, and humans are greatest in Owambo and much less so in Caprivi there exists a broad continuum of degradation from east to west. Compounding this has been the absence of any crop research programme designed to benefit the communal farmers of the far north.

Two ancillary factors have reinforced this situation: first, the political decision to regard these northern districts, principally Owambo, as sources of migrant unskilled labour, thereby justifying the administrative policy of benign neglect; and second, of more direct influence on the use of animal traction, the existence of a protracted civil war for independence. Once again, in general terms, the effects were most severe in Owambo, but localised concentrations of cultural degeneration can be observed over the entire area.

The existence of a large military force dispersed over the three districts for about 25 years was not entirely unwelcome by the local populace. The presence of such a force, substantially made up from tribal/ethnic territorial forces, meant that a constant supply of uncommitted cash was freely available, leading to many employment and enhanced trading opportunities which were enjoyed by the locals. Hand in hand, however, went the destruction, modification and moulding of cultural values and practices.



whose absence will block the long-term development of the areas, will also be given attention. Experience in southern Africa has shown conclusively that the marketing needs of any planned project must be given full attention at the outset to prevent subsequent marketing constraints from causing the project's failure. However, while crop marketing is recognised as a crucial issue, it is not the intention to include marketing aspects of crop production within the framework of this animal traction project.

One of the fundamental constraints affecting the low productivity of communal farmers in the northern territories of Namibia is the extremely low availability of trained ox teams with handlers and appropriate technology for use in land preparation and crop cultivation. The only ox-drawn implement freely available is an all-metal plow, first manufactured more than 60 years ago. It is identical to that available elsewhere in Africa. The vast majority of field tasks are carried out with manual labour which means that land preparation is always delayed until the onset of the rains, crops are inevitably planted late and the subsequent cultivation/weeding of crops is usually inadequate. This scenario is further compounded by the shortage of available labour, as those left to work the farms are generally the older parents or, in too many cases women and younger children who are not attending school. Many men go to the major urban centres in an attempt to gain employment but salary remission is usually irregular and unreliable and may cease altogether. This cycle of activity locks the communal farmer into an inescapable circle of poverty.

It is intended that the project should become involved with several agricultural and agriculture-related activities relating to animal traction. In the initial phase there will be testing of implements and related research. New and improved cultivars of existing crops (mainly millet, sorghum, groundnut and maize) will be tested using a farming systems approach to small-scale farmer problems. New crops will be introduced along with alternative cropping techniques such as intercropping. A training phase will be included as soon as possible to produce qualified trainers who in turn should produce trained teams of oxen with competent handlers. Trials of on-farm cropping systems will take place using equipment already found to be acceptable to the farmers. Thereafter it is planned to introduce blacksmith training programmes. These will aim to produce a trained cadre of local artisans capable of carrying out repairs to existing equipment. Some more gifted artisans may be given

the opportunity to manufacture equipment and spare parts.

Clearly this will necessitate a phased programme of development and implementation over a number of years. The speed with which each new phase is introduced will depend on the degree of success of the preceding phases. The entire project could be quite large and require much time before reaching its final dimension.

Criticism may be voiced over the potential size of the project, arguing that it is likely to prove cumbersome and hence vulnerable to failure. However, as stated above, development problems can rarely be solved in isolation. Small-scale farmers operate their farms as a unit, dealing each day with problems which have social (family), economic and agronomic dimensions. To solve farmers' problems frequently involves solving community problems first, or at least at the same time.

## Proposed project actions

### *Testing of equipment*

The testing of equipment will take place at two centres—the Mashare Government Farm, east of Rundu in Okavango, and an unspecified site outside Katima Mulilo in Caprivi. No adequate research facilities were ever established for Caprivi and the Ministry of Agriculture is currently finalising the acquisition of 100 ha of land donated by a local tribal authority. The actual testing will be carried out within the framework of a variety of crop production systems, not only to demonstrate the usefulness or otherwise of specific pieces of equipment but also to demonstrate the productivity of new (unknown to local farmers) crops and improved cultivars of known crops.

### *Training of oxen and handlers*

Almost simultaneously an unassociated centre is to be created, along very simple lines, to train pairs of oxen, owned by communal farmers, in the recommended cultivation activities using the improved equipment. Courses will initially be for a planned four-week period and the trainee handlers will be accommodated on site. It may be necessary for the centre to provide transport for the trainees' animals if the distances are too far for the animals to walk. All costs of training will be carried by the Ministry of Agriculture.

### *Farming systems research*

Farming systems research (FSR) will be introduced to the research centre as early as possible but this may not occur until the second year of operation.

Group discussion activity will take place with local extension officers and with interested farmers; the intention is to have combined groups, as far as possible, in order to build links between the two groups via the research activity. Depending on the progress achieved in the second and third activities/phases, FSR will be introduced to on-farm trials, but must depend on the degree of trust and cooperation which can be established among the centre, the extension service and the farmers.

#### *Training for field repairs*

In time, should the previous three activities progress satisfactorily, it will be desirable to have local entrepreneurs with some skills in blacksmithing and welding to carry out running repairs on the equipment. Final details of this stage will depend on the rate of breakage (which may be minimal) and the availability of a pool of existing artisanal skills, which will vary from place to place. Where necessary, organisations outside the project may provide the specialised training. Existing non-governmental organisations (NGOs) already provide such training in other areas, and the project may persuade these NGOs to arrange periodic training opportunities in Okavango and Caprivi.

#### *Establishment of local manufacture*

Local entrepreneurs will be given training in the manufacture of the approved range of equipment.

#### *Credit*

Credit will only be offered to people where the opportunity for success is considered good and where the potential for credit repayment is favourable. In this regard, the supply of trained cattle and approved animal traction equipment to individuals or small groups is considered an acceptable risk. The provision of tools, jigs and basic working materials to small-scale entrepreneurs should also merit credit, the loan being secured by tools, working materials or finished goods. In both these examples, if credit is not repaid, repossession by the credit institution should lead to minimum loss being incurred. On the other hand, if the technology is transferred successfully, repayment of loans should be straightforward with the improved level of productivity envisaged.

A possible (and quite optimistic) timetable for project implementation over a four-year period is presented in Table 1.

**Table 1: Timetable for project implementation (assuming ideal conditions)**

<i>Year</i>	<i>Description</i>	<i>Project involvement</i>
1992	Import equipment	P
	Establish research centre	P
	Prepare credit facilities and procedures	O
1992	Establish training centre	P
1992/93	Establish FSR programme	P
	Organise farmer discussion groups	P
1993/94	On-farm FSR programme	P
1994	Train local people to do field repairs	O
1995	Train and establish local entrepreneurs to manufacture equipment	O
1993 onwards	Make credit facilities available	O
1993/94 onwards	Integrate extension and development personnel in an outreach programme	O

*P = Project activity. O = Non-project activity*