

# Cow traction in Chokwe, Mozambique

by

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## Abstract

*A survey was carried out among 60 farmers who were plowing with Nguni cows in Chokwe District in Gaza, Mozambique in July 1994. The histories of 110 cows raised primarily for breeding purposes but used also for traction were obtained from the owners. Calving intervals averaged 21 months and calving occurred throughout the year but peaked in the rains. Calf mortality from birth to weaning was not recorded but there was evidence of abortions and weakened calves in two villages.*

*These levels were equal to those obtained in the years with sufficient male animals for traction in the region and use of cows for this purpose was probably uncommon. They were also similar to those obtained in non-draft Nguni cows in better management situations on-station. Despite these positive results, using cow traction is apparently a temporary practice due to a shortage of cattle following drought and war. The main problem mentioned by farmers was the unavailability of cows for work for up to four months each year during calving.*

## Introduction

There is a general feeling among many farmers and agricultural scientists that the utilisation of cows for traction can adversely affect the reproductive performance of the animals. This study investigates an increase in use of cows for traction in an area of Mozambique. A preliminary survey in Chokwe in 1992 showed that more than 50% of animal traction pairs involved a female (Faftine and Massaete, 1994). A trend towards substitution of oxen by cows for animal traction had been found by Lexa (1985), Dionisio (1985) and by a Veterinary Faculty survey, referred to by Timberlake et al (1986) in Chokwe and by Rocha (1988) elsewhere. All referred to the scarcity of bulls/steers as the main reason for this change.

## Background information

The present study was carried out in the largest irrigation scheme in Mozambique which is located

near the city of Chokwe (260 km from Maputo) in Gaza Province. It was constructed in the early 1950s and the first Portuguese settlers arrived in 1954 (Myres, 1992). The smallholder agricultural sector traditionally cultivated rainfed crops but since 1985 a part of the irrigated area has been allocated to them (Woodhouse et al, 1986).

There are two main cropping seasons: the summer season (October to March), and the winter season (April to September). The crops grown in this area are maize, rice, cotton, wheat, cowpeas, beans, sweet potatoes, groundnut and vegetables. The soils are predominantly of heavy clay texture and the land topography is flat (Jimenez et al, 1990; 1991).

The population of draft animals in Chokwe has decreased from about 2000 pairs in 1985 (Lexa, 1985) to about 579 pairs of which 19% are cows (Uaila, 1992). The major causes of this decrease were drought (particularly during 1992), war and theft. Most (83%) of cattle owners use animal power for plowing their own land and to rent out (Uaila, 1992). Draft animals are used mainly for first and second plowing, harrowing and ridging while manual labour is used for first land cleaning, planting and weeding (Jimenez et al, 1991).

It has been estimated that there is one plow per 2 ha and one harrow per 6 farms. Cows and oxen are also used for transporting the harvest, fuelwood and water, with an average of one cart per 3 families (Uaila, 1992).

The major constraints faced by the communities in the irrigated area are quarrels over land (due to skewed distribution and overfragmentation), boundary disputes and illegal occupation, damage to canals or grazing of crops (Myres, 1992) and a shortage of animals. The farmers interviewed were members of the Development Association for Women supported by United Nations Development Fund for Women (UNIFEM); Matuba village, Farmers' Associations supported by a Lutheran

World Federal project (Nwachicoluane, Lionde and Muianga villages) and Farmers' Associations in Chokwe.

### Methodology

Five villages between Chokwe and Muianga were visited. The oldest person working with the first spans encountered was interviewed. The survey was completed in 7 days. Sixty farmers were observed plowing with cows and each was asked about the circumstances that led them to begin using cows for traction. Other questions concerned how the cows responded to use for work and how farmers overcame the constraints to cow traction.

In general, the farmers had a good recollection of the number of calvings, and calves weaned from their cows. Thus, in this study the case histories were used as criteria of reproductive efficiency. Information on the management, uses, and reproductive and working performance of 110 cows was collected.

### Results

The majority of the draft pairs found comprised two cows (57%) and the remaining were mixed pairs of cow/ox or cow/bull. Of the 110 female cattle surveyed, 11% were heifers and 89% cows. The age of animals ranged from 3 to 15 years.

Body scores of the cows indicated poor to reasonable condition. The body condition score was influenced by location and was worst in Muianga. Some areas (Lionde and Muianga) are enclosed by crop lands and the pasture situation was critical; this may have been a cause of the poor body condition.

The farmers referred to abortions as a frequent problem in the region. In their opinion it was caused by shortage of grazing time.

At the time of the survey 16% (18) of the cows being used were pregnant and 49% (54) suckling. Of the pregnant cows 40% were pregnant for the first time, at a mean age of 3.5 years.

The interviewees stated that intervals between parturitions were normally 1 rainy season since the cows usually calved during the rains, during the following rains they were still suckling and in the third rains they calved again. From this observation it can be deduced that the calving interval was approximately 18–24 months. As the

**Table 1: Number of parturitions in Nguni draft cows before and after starting working. Data from a survey in Chokwe, Mozambique in July, 1994.**

<i>Variable</i>	<i>Number</i>	<i>%</i>
<i>Parturitions before starting traction</i>		
0	1	2
1	40	72
2	9	16
>2	5	9
<b>Total</b>	<b>55</b>	<b>100</b>
<i>Parturitions after starting traction</i>		
0	7	7
pregnant	10	10
1	56	57
2	16	16
>2	9	9
<b>Total</b>	<b>98</b>	<b>100</b>
<i>Parturitions of heifers</i>		
0	1	8
pregnant	8	67
1	3	25
<b>Total</b>	<b>12</b>	<b>100</b>

bulls and the herds were not allowed to graze in the irrigated area for most of the year, mating opportunities were limited.

Some farmers believed that working infertile cows could solve their fertility problems. This was primarily undertaken in the case of overweight cows.

Calf mortality was not mentioned. Males born to draft cows were often paired with their mothers for work while females were at their first calving.

The periods during which farmers allowed their pregnant cows to rest before calving were variable, ranging from 1 to 5 months. The most common practice among farmers was not to return cows to work for one month (until umbilical cords drop) after calving. During this period the farmer was forced to borrow or hire animals from neighbours.

Few farmers were strongly against using cows for traction. However, they said that bulls were not attracted to cows used for work.

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## Discussion

Some farmers in the study area were not convinced of the advantages of using cows for traction and requested a reintroduction of oxen. They were being forced to use cows because of recent losses in their herds. The use of cows appears to be temporary and a way to help to ensure a fast rebuilding of the herds after drought and war.

Although their attitudes were in some ways a reflection of their culture and beliefs, farmers were also motivated by real practical constraints to cow traction. The farmers interviewed mentioned the main disadvantage of cows listed by Matthewman (1987) and Matthewman, Djikman and Zerbini (1993), namely the unavailability of females for work for approximately two to four months per annum around calving. To varying degrees, each of the farmers was detrimentally affected by this rest period during late pregnancy. This fact seemed to be the major influence on farmers' decisions regarding whether to use cow traction as a permanent practice.

The length of the rest periods before calving depended on how farmers managed their cows. Some farmers said that it was possible to use the cow during late pregnancy provided the animals were beaten only on the hind quarters. Other experienced farmers controlled their animals with voice commands, sounds or names. Occasionally, the cow worked until calving day because the owner did not expect her/his cow to calve so soon.

The possibility of brucellosis should be considered in triggering abortions. This disease is widely distributed in the neighbouring zones including the Chobela and Mazimuchopes Animal Experimental Stations. The animals of both stations came into contact with farmers' cattle during emergency evacuations to Chokwe during the war.

## Conclusions

The reproductive traits observed were similar to those obtained in the same breed in much better on-station conditions (Rocha, 1985) where cows were not used for traction. However, this conclusion is preliminary because, although 8% of cows involved in this study had more than two parturitions after starting work (2–7 parturitions), most of the females sampled were in their first

parturition. It is therefore not possible to predict the real effect of work in the long term.

Despite the apparent positive results in using cows for traction, during the survey it was common among farmers to avoid using cows for more than one purpose at the same time to prevent a possible decline in calf production. This negative effect of traction could be reduced with appropriate feeding management. This management might involve the cow being fattened before the working season and fed a good quality diet before calving and post partum, especially when at rest in the kraal at night. Greater contact with bulls during the rains, when fertility is heightened due to better diets, may also increase conception rates.

## Acknowledgements

*This work could not have been accomplished without the help and patience of many farmers. We are grateful to all of them and to the LWF and UNIFEM projects. In particular we would like to thank Mrs Deolinda, Elisa and Mr Agostinho, extension officers of these projects, for their collaboration.*

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