

# The impact of mobile ox plowing courses for women in the Western Province of Zambia

by

**Cara Hocking\***

*Research Student, Western Province Animal Draft Power Project, PO Box 910067, Mongu, Zambia*

## Abstract

*In the Western Province of Zambia, the Animal Draft Power Project has conducted training courses for both men and women. Courses for mixed groups concentrated on how to improve the efficiency and effectiveness of using draft animal power. Courses targeted specifically at women aimed to teach women how to plow and make use of draft animal power. All the courses lasted one week, and covered plowing, yoking, parts of the plow and how to adjust it—in both theoretical and practical sessions.*

*A study was undertaken to assess the impact of the courses for women. The results of the study show that ox plowing courses for women are definitely beneficial. The overall number of women plowing has increased. It is apparent that women derive social benefits simply from knowing how to plow. The progression from benefiting from knowing how to plow, to benefiting from applying the skills, is strongly influenced by access to oxen. If oxen are owned by the household, then women who have had training tend to use them. Where the household has to borrow or hire oxen, the impact of the training is less beneficial from an economic point of view, but is still beneficial in social terms.*

## Animal Draft Power Project

In the Western Province of Zambia, the Animal Draft Power Project of the Department of Agriculture aims to promote and develop the use of animal traction. Recent emphasis has been in the Lui River Valley and Kaoma East District. The project receives Dutch technical assistance through the private sector company, RDP Livestock Services.

The Lui River Valley was selected by the Animal Draft Power Project because it has been identified as an area suitable for rice growing. At present only a small area of the potentially suitable land is under rice cultivation. The limiting factors that appear to be common to many farmers (Bastiaansen, 1990) are:

- lack of funds with which to purchase the inputs (fertiliser, implements, oxen) essential for the initial establishment of rice cultivation
- a shortage of the power (both human and animal) needed to increase the area cultivated,

and limited availability of animal draft power at the optimum time for farming operations

- limited availability and access to implements and spare parts
- poor marketing and infrastructure which provide few incentives for farmers to grow rice as a cash crop.

Kaoma East was selected by the Animal Draft Power Project because of the initial success of farmers in moving from traditional to commercially-oriented farming practices, such as growing maize for sale. However, several factors are limiting further development (Muwamba and Kalonge, 1989), the main ones being:

- shortage of animal draft power for land preparation and weeding operations
- shortage of resources and capital for purchasing commercial crop technology
- limited extension services for the transfer of knowledge to farmers converting from traditional to commercial crops
- poor infrastructure for transport and marketing of crops.

## Training in draft power animal

In both project areas, the potential for animal draft power as a means by which farmers can improve their standards of farming and of living justified the promotion of this technology. The training of farmers in animal draft power, and support for the increased use of animal draft power, would provide farmers with the opportunity to:

- diversify from traditional crops to ones with more potential for commercialisation, particularly rice in the Lui River Valley and maize in Kaoma East
- increase the total input of power into the farming system
- improve the timely establishment of the required or planned crop activities.

## Targeting women farmers

Women are largely responsible for the production of food for consumption, men for the production of

\* Subsequent address:  
Thrushes, Stroud Lane, Steep  
Petersfield, Hants GU32 1AL, UK

crops for sale. Some women also have their own field separate from their husbands, over which they have sole responsibility and control. Women farmers are restricted in the development of their farming practices mainly by their ignorance about handling a plow and other animal-drawn implements.

Women were targeted by the Animal Draft Power Project for the following reasons:

- to overcome cultural practices which largely restrict the use of animal draft power to men. By giving both women and men the opportunity to learn about animal draft power, the benefits of this technology are spread more equitably
- to increase the effective use of animal draft power, by teaching women how to plow. With animal draft power, the potential for commercialisation can be better realised.

Ox-plowing courses have been run for mixed groups of both men and women farmers, as well as for women only. It was assumed that male farmers know how to plow, and so the courses concentrated on how to improve efficiency and the effectiveness of using animal draft power. Courses targeted specifically at women were organised to teach them how to plow and make use of animal draft power.

All courses lasted one week and included both theoretical and practical parts. The four main topics were plowing, yoking, parts of the plow and how to adjust the plow.

A research project was undertaken to assess the impact of the Animal Draft Power Project ox-plowing courses for women. This paper outlines the results of that study which was undertaken while the author was studying at the University of Newcastle-upon-Tyne, UK (Hocking, 1991).

## The research project

### *Study design*

The study compared the opinions and activities of women who had attended an animal draft power course with those of farmers (men and women) who had not. The information was collected using a flexible "questionnaire" and informal discussions. Impacts and benefits were identified from the responses. Using a "framework of questions", rather than a rigid questionnaire, gave flexibility to record and explore inevitable variations in the background of the respondents and gather additional information. Each question was used as an entry point into a topic and not merely as a specific enquiry with an expected answer.

The informal interviews, lasting approximately two hours, were held at the home or on the farm of the

respondent. Direct observations were also made to verify information given and to provide insights into those activities undertaken by women but not discussed during the interviews.

### *Sampling*

An area was selected within each Animal Draft Power Project area where animal draft power courses had been run in one or several villages, and individuals met by chance while travelling through the sample areas were invited to participate in the study. The information from the respondents was taken to be representative of the farmers of the area, but it may not be applicable to the population outside the selected areas. One week was allocated for data collection in each sample area, and information was collected from 52 respondents. Respondents were categorised as follows:

- single women who had attended a course
- married women who had attended a course
- single women who had not attended a course
- married women who had not attended a course
- single men
- married men.

## Results and discussion

Information on the numbers and backgrounds of the respondents in each category is summarised Table 1.

### *Course implementation*

Some women attendants said they avoided practical participation in the course, particularly in yoking. They were able to do this because males on the course yoked the oxen for them. Women also said that the teaching of the initial stages of plowing was too rapid. This could be due to the attendance of men on the course. Instructors apparently adapt the programme towards training in efficiency and effectiveness rather than in actually how to plow.

### *Benefits to women and their households from animal draft power*

There is a distinction between the benefit felt from knowing how to plow, and the benefit from actually applying the skills.

In the Lui River Valley, those who did not apply their skills (attendants and non-attendants) expressed the benefits in social terms, such as independence, assurance and decision making. Those who applied their skills benefited from increased production, made possible by the expansion of their field area and by the increased speed and timeliness of land preparation by animal draft power.

Some respondents pointed out that learning how to plow, and applying this skill, can have negative

**Table 1: Background of respondents**

	Women				Men		Total
	Attendants		Non-attendants		Non-attendants		
	Single	Married	Single	Married	Single	Married	
<b>Lui River Valley</b>							
Number of respondents	4	10	1	4	1	3	23
Number of households using animal draft power	4	10	1	4	1	3	23
Respondents with trained oxen owned and kept in own village	1	5	0	3	1	2	12
Respondents with trained oxen owned and kept in another village	0	1	0	0	0	0	1
Use borrowed oxen only	2	4	1	1	0	0	8
Use hired oxen only	1	0	0	0	0	1	2
Member of group	0	1	0	1	0	0	2
Know how to plow	4	10	0	1	1	3	19
Women who apply plowing skills	2	7	0	1	–	–	10
Men who apply plowing skills	–	–	–	–	1	2	3
Women who used oxen before attending course	2	4	–	–	–	–	6
<b>Kaoma East</b>							
Number of respondents	4	4	8	7	1	5	29
Number of households using animal draft power	4	3	5	6	0	4	22
Number of households using hand hoe only	0	1	3	1	1	1	7
Respondents with trained oxen owned and kept in own village	3	0	2	3	0	0	8
Respondents with trained oxen owned and kept in another village	0	2	2	0	0	0	4
Use borrowed oxen only	0	1	0	0	0	2	3
Use hired oxen only	1	0	1	3	0	2	7
Member of group	2	4	4	5	0	1	16
Know how to plow	4	4	2	1	1	5	17
Women who apply plowing skills	4	3	2	1	–	–	10
Men who apply plowing skills	–	–	–	–	0	3	3
Women who used oxen before attending course	2	0	–	–	–	–	2

impacts, such as an increased workload. In general, however, the benefits of increased production outweighed the disadvantages.

#### *Factors limiting the application of skills*

The main factor in determining whether or not women applied their skills was access to oxen. In the Lui River Valley, most of the women who benefited from applying their plowing skills had access to oxen belonging to the households in which they lived. In Kaoma East there is a shortage of oxen, both for hire and for purchase. Women with access to oxen belonging to their own households benefited both socially and economically; those hiring or borrowing oxen only benefited socially.

Another constraint on the application of skills was women's lack of confidence in their ability to plow.

#### *Factors limiting the benefits of animal draft power*

In the Lui River Valley the main factors limiting the benefits from animal draft power are poor marketing infrastructure—lack of transport to depots and late returns from sale of crops. The availability of spare parts is also a constraint where animal draft power is virtually a necessity for the cropping of rice.

In Kaoma East, marketing and weeding were identified as the main limiting factors to benefiting from animal draft power. The ability to expand field size using animal draft power leads to problems at weeding times, as the area is too big for farmers to cover and casual labour is scarce. In some areas there are also problems in the supply of fodder.

#### *Course improvements*

The most commonly suggested improvement to the course was that it should last longer. This must be

assessed carefully. The reason attendants wanted a longer course may have been because their course had been adjusted primarily to the needs of latecomers rather than of those who came at the start.

In the Lui River Valley, management of oxen was suggested as an additional training topic. During discussions several respondents said they appreciated that not owning oxen limited the benefits of animal draft power. Most of the women respondents were hesitant about their abilities to own and manage oxen and thus be able to have direct control. For women, particularly single women and women in tribes that are not traditionally cattle keepers, the problems associated with the management of the oxen negate some of the beneficial impacts of animal draft power. The costs incurred in employing a manager, and of veterinary expenses, need to be considered.

## Conclusions

### *Conclusions relating to both study areas*

- Animal draft power courses for women increased the overall number of women plowing.
- The total input of power into the farming systems was increased by the additional input of women using animal draft power.
- By using animal draft power farmers can extend the area cultivated, as animal draft power is faster and easier than hand hoeing.
- Animal draft power courses provided the opportunity for women as well as men to benefit from this technology.
- Women with access to oxen within their households are the largest group able to apply the skills learned.
- Women applying the skills themselves benefit in social terms and indirectly through the economic benefits to the households.
- Women who did not actually apply the skills benefited in various social ways.

### *Conclusions relating to the Lui River Valley*

- As animal draft power is almost always used for growing rice, increased use of animal draft power is increasing rice production.
- Women are limited in applying their skills primarily because they do not have access to oxen owned within their households. Lack of confidence in yoking also inhibits them.

### *Conclusions relating to Kaoma East*

- The increased use of animal draft power in Kaoma East is providing the opportunity for farmers to commercialise crop production.
- Shortage of oxen is the main factor limiting the application of skills learned on the course.

## Recommendations

### *Involvement of Animal Draft Power Project*

- Integrate future developments with projects aimed at improving the marketing infrastructure, and the supply of oxen, particularly in Kaoma East.
- Increase oxen ownership, particularly among single women. Income generated through small-scale group enterprises by women could be put towards the purchase of oxen.
- Organise, together with extension programmes, follow-up practical courses in plowing and yoking. Women without access to oxen in their own households would then be able to practise skills and build up confidence.

### *Course structure and content*

- There is a need for a more structured system for advertising the courses being run. Such improvements should reduce the need to increase the length of the course or to repeat parts of the course to cater for latecomers.
- Introductory meetings should make it clear that attendance is open, and that farmers do not have to be selected before they can attend.
- Promotion of the courses should continue to be targeted at women. However, men, particularly husbands, should also be involved in the promotional meetings to avoid misconceptions.
- Ox-plowing courses for women only should run concurrently with courses for men. This would ensure that the course would be suited to the needs of women rather than to those of men.
- The main subject to be emphasised is yoking. The use of the cultivator or ridger could also be included for more advanced participants. Cultivators would be of direct advantage to women as it reduces the labour of weeding.
- Including management of cattle in the course would be of advantage, particularly to single women who may be supervising others to manage their cattle.

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