



Draught Power Performance and Production Management

(Optimising DAP for Cropping)

Project R7352

**Best Practice Guidelines: -
Views by local manufacturers of animal-drawn implements**



IDG/02/03

Draught Power Performance and Production Management
(Optimising DAP for Cropping)

**A synthesis of views expressed by two local manufacturers of
animal-drawn implements on Best Practice Guidelines**

Tiri Koza¹, Ephraim Mbanje¹, Norman Mhazo², Dave H. O'Neill³ and Jim Ellis-Jones³

*¹AGRITEX Institute of Agricultural Engineering, P O Box BW 330, Harare, Zimbabwe. Tel:+00263 4 860019
atnesa@iae.icon.co.zw*

²University of Zimbabwe, PO Box MP167, Mt Pleasant, Harare, Zimbabwe

*³Silsoe Research Institute, Silsoe, Bedford MK 45 4HS, UK
Tel:+44 (0)1525 860000 ; dave.oneill@bbsrc.ac.uk*

IDG/02/03

Silsoe Research Institute, UK
&
Institute of Agricultural Engineering, Zimbabwe

Distribution:

Head Office

IAE

Masvingo Province

CARE Zimbabwe

DFID LPP

ICRISAT

NRI

SRI

UZ

Director, Training Branch

Tiri Koza, Jairos Magumise, Bertha Mudamburi, Ephraim Mbanje, Library

CAEO, DAEO Chivi, DAEO Masvingo

Masvingo Office, V Zvarevashe

Zimbabwe Office, Tim Smith, Wyn Richards, B Manyuchi

Steve Twomlow

Charlie Riches

Jim Ellis-Jones, Dave O'Neill, Andy Barton, Library

Prof S Mpeperekwi, Prof. Ostin Chivinge, Aidan Senzanje, N Mhazo

Views expressed by local implement manufactures on Best Practice Guidelines (BPGs)

Background and purpose

One of the activities in the DAPZIM Project is to produce Best Practice Guidelines for the various stakeholders associated with the use of draught animal power (DAP) for crop production in the smallholder sector. The purpose of the exercise reported here was to obtain views from local manufacturers regarding the development and production of BPGs, for farmers to use, on draught animal power (DAP). The focus of interest was how farmers would be able to use the manufacturers' implements for land preparation more effectively.

The main purpose was to discuss with, and obtain views from, manufacturers of animal-drawn implements on how to design and present BPGs that they could make available to farmers to address the technical problems that farmers face, particularly with ploughs and land preparation.

Objective

The objective was to obtain the manufacturers' views on three interrelated topics:

- whether they are motivated to offer more information to smallholder farmers than they do at present;
- to establish the extent to which manufacturers would be willing to assist with knowledge transfer;
- to identify the information (and issues) that they would most like to disseminate.

Methodology

Individual discussions were held with both production and sales representatives at Zimplot Limited and Hastt Zimbabwe respectively. A tour of each company, including the factory, was made to get an appreciation, from the manufacturers' perspective, of the manufacturing processes on the different production lines and the product ranges. Interviews were held with company representatives at Zimplot Limited and Hastt Zimbabwe, in October and November 2001 respectively. A handout giving relevant background to the project and the reasons for meeting manufacturers was given to the company representatives (see Annex).

Findings and discussion

1. Explanation to the manufacturers on the intention to produce literature/documents (BPGs) for farmers

After giving a brief background of the project and the intention to produce documents through discussion of the handout (see Annex), samples of two booklets giving examples of similar work already produced were shown. The project was in the process of reviewing and revising these booklets in accordance with stakeholders' views. The booklets that were discussed were:

ZFU/Agritex-A guide for farmers on good land husbandry: Tillage Implements

ZFU/Agritex-A guide for farmers on good land husbandry: Draught Animal Harnessing

2. Manufacturers' willingness to provide more information to smallholder farmers

The manufacturers were willing to collaborate with other stakeholders, especially with the project team at IAE and UZ. The IAE can provide testing and evaluation services to implement manufacturers. Results from tests will be used in developing implements and this information can be included in training manuals for extension staff and in guidelines and factsheets for farmers.

3. The extent to which manufacturers are willing to participate in the knowledge transfer process

Both Hastt Zimbabwe and Zimplot Limited display their respective animal-drawn implements and provide technical information at Agricultural shows and at the International Trade Fair. Displays at shows are complemented with information leaflets, brochures and posters showing various products and price lists.

The two manufacturers participate at farmer field days and workshops when invited and display or demonstrate their implements.

Hastt Zimbabwe produced a promotional programme that was shown on the national television (ZTV) this year. Aspects of manufacturing the Haka range of animal drawn tillage implements were included in the video.

Both manufacturers were willing to participate at the 2001-2002 mid-season evaluations of DAP tillage demonstration trials in Masvingo and Chivi districts. They are willing to participate at relevant functions throughout the country. Both manufacturers produce information leaflets on their products that are both in vernacular and English. They would like to obtain feedback on performance of their implements from farmers to improve product quality.

4. Topics/issues that manufactures would like to disseminate

- Trek chain length specifications for ploughs and cultivators
- Correct setting and use of implements (ploughs, cultivators and harrows)

It was noted that only the Zimplow planter is sold with an operating manual

Establishment of collaborative links with manufacturers and their involvement in producing draft guidelines for farmers

The manufacturers were willing to be involved in producing guidelines for farmers. Information obtained from the manufacturers was to be included in the existing booklets which were being reviewed by the project team. Draft guidelines were to be made available to manufacturers for comments. Formal links needed to be established between manufacturers, research and extension in developing implements and guidelines for farmers.

Other issues discussed

Zimplow Limited

- A new symmetric share was now being fitted on ploughs
- Plough beam was now standardised for all Zimplow models
- The standard plough model has reduced mass (now 35 kg)
- Handle-bars and grips standardised for ploughs and cultivators
- Plough spanner was improved to a 17 and 19 mm ring-type spanner
- Donkey plough was being made with a short beam
- Farmers with problems with BSP products/parts e.g. frog could bring ploughs for modifications
- Resizing (shortening) of most bolts on implements so that they are not unnecessarily long and to prevent rusting of the exposed thread
- Improved quality control on products. To consider improving the adjustable bar holder and the hake mechanism
- The issue of weak u-clamp plate and the thread on the adjustable bar bracket and bending of the draw bar was discussed as this had been raised by farmers during trial evaluations in Masvingo and Chivi districts
- Implement components were now being marked "Mealie Brand"

Hastt Zimbabwe

- Improved plough share strength and wear resistance
- Two ploughs were being made, Haka 2000 and Haka 2001. Haka 2001 weighs 31 kg while Haka 2000 weighs 39 kg
- Parts for Haka plough are interchangeable with Zimplow parts
- Hastt was not manufacturing animal-drawn planters and rippers at the time of this exercise

Conclusions

- Zimplow Limited and Hastt Zimbabwe were willing to collaborate with other stakeholders in providing information to farmers.
- The two manufactures were interested in participating at farmer field days and other fora where they can display or demonstrate their implements. Feedback on the performance of implements could be obtained so that manufacturers could improve their designs and product quality.

- Manufacturers were willing to be involved in producing Best Practice Guidelines for farmers and the information obtained during the visits to their factories as well as information in leaflets and brochures will be used in drafting guidelines.
- Formal links need to be established between manufacturers, research, extension and farmers in developing implements and guidelines for farmers

Acknowledgements

The work reported is part of a collaborative effort of R & D agencies in Zimbabwe and UK, and local manufacturers of animal drawn implements. The following people are acknowledged for their input:

Messrs. Chiopera, Ndlovu, Greg (Zimplow Limited)

Messrs. Mugari, Rwambiwa (Hastt Zimbabwe)

This work is funded by the Government of Zimbabwe (GoZ) and the UK Department for International Development's (DFID) Livestock Production Programme, Project R7352. The views expressed in this report are not necessarily those of the GoZ or DFID.

BPGs Handout for Local Manufacturers of Animal Drawn Implements

Project title: Draught Power Performance and Management (Optimising Draught Animal Power for Cropping)

Development of Best Practice Guidelines

Introduction

This project is funded by the UK Department for International Development (DFID). It is being implemented by the Institute of Agricultural Engineering and the University of Zimbabwe (Soil Science and Agricultural Engineering). The project started in September 1999 and research activities have been carried out on-station as well as on-farm during the last two growing seasons. On-farm trials were established in six project areas namely, Gari, Mutangi, Nyimai, Chedenje Mushandike and Mushagashe in Chivi and Masvingo districts.

Project research activities are to be terminated at the end of this year. Farmers have been involved in focus group discussions, spring and winter ploughing trials, trial evaluation discussions, cluster analysis and two workshops held after each growing season.

Purpose of the project

The purpose of the project is to increase productivity through participatory development of improved utilisation of draught animal power systems by smallholder farmers.

Developing Best Practice Guidelines

Objectives of the meeting/discussions

The main objective is to discuss and obtain views from manufactures on best practice guidelines to enable the production of a document that will help farmers in solving problems related to the use of DAP technology. Specific objectives are:

To explain to local manufactures of animal drawn implements the intention of the project to produce literature/documents aimed at farmers to help guide them through any technical problems they may be facing, particularly with animal-drawn implements.

To ascertain whether manufactures are motivated to offer more information to smallholder farmers than at present.

To establish the extent to which manufacturers would be willing to be part of the knowledge transfer.

To identify topics/issues manufactures would most like to disseminate.