

# Procedures for evaluating and promoting animal-drawn weed control implements in Zambia

by

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## Abstract

*In Zambia, the Palabana Animal Draught Power Project has addressed weeding issues by a large-scale programme that has included on-farm and on-station testing of implements, on-farm demonstrations and field days. Each stage of the programme is monitored and evaluated to judge the success of the programme and to plan follow-up work. This paper details the procedures for on-farm testing, promotion through field days and the development of sales agents.*

## Introduction

The Palabana Animal Draught Power Development Programme has initiated and supported the promotion of weeding with draft animals through various activities:

- training of fieldworkers
- demonstrations on farmers' field days
- testing and development of implements
- stimulating the distribution of animal-drawn weeders through rural traders
- feedback and technical support to manufacturers.

Procedures and guidelines have been developed to run, monitor and evaluate these activities, and much information has been gathered which may be useful for similar programmes in neighbouring countries.

## Participatory testing of animal-drawn weeding equipment

The objectives and procedures of the weeder testing programme have been described by Chisenga (2000—in this resource book). The procedures involve initial testing, durability testing and farmer acceptability and feasibility testing. Examples of the data forms used in these tests have also been presented by Chisenga (2000).

After implements have passed the initial and durability tests (with objective procedures), they are tested by farmers. While some objective testing continues on the farms, the participatory evaluation processes include subjective assessments, and the ongoing testing procedures start to merge with the promotional activities.

On-farm testing is carried out near the station (preferably within walking distance) with a selection of experienced and serious farmers; the intention is to use the same test group for several years. Each farmer tests one implement during a whole season, or may swap the implement for one from another test farmer. Two implements of same type and make are tested simultaneously by two farmers.

The testing programme begins with an introductory meeting. The necessary number of farmers are called to the station, with the purpose of discussing with them, as a group, the forthcoming test, introducing them to the range of implements to be tested, checking their interest, and agreeing on organisation and execution of the test.

Implements may be distributed either within the group at the introductory meeting, or individually to prevent possible quarrelling about more popular implements. The farmers then test the implements in their own fields: they are monitored once or twice to check whether the implements are being used, to adjust them if necessary, and to record farmers' major comments and the monitor's observations using a checklist or record sheet.

A field day is held towards end of the weeding season. It takes place on station, on a specially prepared maize plot, with the full range of weeding implements under test; all test farmers concerned take part. All implements are used by staff and farmers themselves, and this is followed by an evaluation meeting to assess

farmer acceptability and feasibility of each type of implement. Results can be recorded on record sheets, checklists and/or questionnaires (Chisenga, 2000).

After the test the farmers may buy the test implement at a reduced price as a reward for their co-operation.

## Promotion through field days

### *Objectives*

The usefulness of animal traction for weeding with cultivators and ridgers is stressed in a large-scale on-farm programme designed to:

- create awareness and to stimulate the application of improved weeding systems using animal power (in most cases to replace time-consuming hand weeding and associated drudgery)
- develop this type of programme as an effective extension methodology
- obtain feedback information for different follow-up activities.

### *Selection of areas*

The main criteria for the selection of areas are previous contacts and experience (for example, through previous on-farm trials and rural appraisal surveys), the existence of a supporting agricultural or rural development project or programme, and the estimated local need and scope for each of the programmes.

Two types of intervention area are identified:

- 'concentration' areas, for close monitoring by own field staff
- 'supported areas', ie, other important areas in which interested local field staff are fully responsible, but supported, preferably in conjunction with existing (donor supported) programmes.

### *Involvement of local extension staff and others*

It is important to establish cooperation with local groups, such as:

- existing rural or agricultural programmes or projects
- extension (and other agricultural) staff, mainly follow-up on ex-trainees
- small entrepreneurs interested in participating in sales of equipment.

A preparatory course is held for all participating regional extension staff, to provide an opportunity for them to get to know each other and share their experiences. After introducing the participants to the programme's

## Aspects to look at when assessing weeding with draft animals

### *Quality of work*

Field should look good after work is done

- weeds gone (and not coming back soon)
- crop not damaged
- soil and water conserved.

### *Implement quality*

Implement is in good condition, before and after use:

- strong
- durable
- parts can be (easily) replaced.

### *Implement performance*

Working with the implement was acceptable for:

- operator(s): handling, adjusting, time requirement
- animals: draft force and time requirement.

### *Farmer acceptability*

- farmers want to apply the technique
- farmers can learn the technique
- they can afford the implement
- the implement is available
- after-sale service is available.

### *The conditions*

- weather conditions: rain, temperature
- field conditions: soil type and moisture, topography, weed types and infestation, cropping system
- operational aspects: timeliness, experience and skills operator(s), type, condition and training of draft animals, implement settings.

aims, organisation and procedures, the course covers:

- field and workshop use of all implements in the demonstration set
- practising a weeding demonstration
- programme planning per region, and making first arrangements.

Preferably, all participants have had at least a basic training in animal traction. All receive a manual on the weeding demonstrations programme.

### *Acquisition and distribution of implements*

All necessary equipment, including toolboxes, and implements are bought and distributed to sales points in the regions. Many of the implements are actually (pre-)financed and distributed by local donor-supported projects.

### ***On-farm demonstrations and implement sales***

During field days on a host farmer's field, different methods and related implements are demonstrated and farmers are encouraged to try them themselves. Afterwards there is a group discussion, which usually ends with a vote on which are the best implements.

The field day ends with the issuing of a certain number of the demonstrated implements to interested farmers. The implements are sold at current market prices. Prices are subject to change at prearranged intervals, eg, every quarter. Farmers will sign an agreement stating the transaction conditions. Farmers either pay the full amount at once, or pay a deposit of 50% of the current price, and 50% of the (new) current price at a later date. There is a preset payback period, after which implements which have not been fully paid for are withdrawn without reimbursement of the deposit.

### ***Monitoring and evaluation***

Monitoring and evaluation are done in four stages. Firstly, record forms are completed at each demonstration.

Secondly, farmers will use the newly acquired weeding implements preferably under guidance and monitoring of the regional staff and at least in the concentration areas by Palabana staff as well. Monitoring of a small number of farmers during the actual field operations, and of a larger group of surrounding farmers on other days during the season, is carried out with the use of a checklist of observation criteria.

Towards the end of the season, interviews will be held, either with individual farmers or just one per region with a group of farmers. A questionnaire or checklist is used for guidance of these evaluation meetings in the field.

At the end of the season, an evaluation workshop is organised with all participating regional staff. The aims of the workshop are to receive all completed forms and other relevant information, share experiences and assess overall results and shortcomings. This is followed immediately by a preparatory course for the forthcoming season.

### ***Follow-up activities***

New activities may be formulated and carried out as a result of the experiences of the weeding demonstrations programme, such as the development of an improved cultivator, and stimulating the rural supply of equipment through private traders in the areas, or supporting small workshop entrepreneurs to manufacture and maintain (weeding) implement spares.

### **Promotion through sales agents**

The objective of the sales agents programme is to investigate the possibility of a local animal-drawn equipment and spares outlet on a sustainable basis. This is a pilot activity, supplementary to the implement sales at weeding demonstration field days, and should gradually replace them completely.

Selected private rural traders are offered a small stock of equipment and spares on credit for which they sign an agreement form. The released equipment will be paid back against current off-factory or off-central outlet prices, and hence are subject to price changes. It is left to the sales agents to make a reasonable profit.

### **Reference**

Chisenga N, 2000. Test procedures for animal-powered weeding equipment. In: Starkey P and Simalenga T (eds), *Animal power for weed control*. Animal Traction Network for Eastern and Southern Africa (ATNESA) and Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands. ISBN 92-9081-136-6