

Women, weeding and agriculture in Iringa Region, Tanzania

by

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Abstract

In Iringa Region, Tanzania, animal-drawn technology is mainly confined to plowing. The reasons for this include: the draft oxen are not adequately trained for inter-row cultivation; very few cultivators/weeders have been available in the region and those available are not robust enough for the conditions met in the region.

Hand weeding is a labour bottleneck and limits the area of land that can be cultivated. Poor weed control is one of the major causes of low yields. Women provide 60–80% of labour for agriculture and so would benefit greatly from the introduction of animal-drawn weeding. However, women have little access to resources or credit and rarely own land so are unable to obtain weeding technology. The Hifadhi Mazingira Iringa Project (HIMA) works with several women's groups and is promoting the use of animal traction.

Introduction

Tanzania has about 40 million ha of rainfed arable land of which 6.2 million ha is actually cultivated, the area increasing by about 5% annually. More than 80% of the land which is cultivated is worked using simple hand tools.

Iringa Region has a total area of 5.7 million ha, of which 4.2 million ha are cultivable. Iringa District, where the HIMA Project is situated, has a total area of 2.9 million ha of which 1.4 million ha are cultivable. Iringa Region has about 452 000 cattle, about 11 700 plows and smaller numbers of planters and cultivators.

Forms of mechanisation

Tractors are widely used in Iringa Region. Animal draft technology is confined mainly to plowing and carting; it is rarely used for planting, inter-row cultivation, ridging or weeding, for several reasons:

- the draft oxen are not adequately trained for inter-row cultivation

- very few cultivators/weeders have been available in the region
- the inter-row cultivators available are not robust enough for the conditions met in the region: the cast-iron parts are easily smashed by tree stumps or large stones.

There are normally three labour peaks during the cultivation of annual crops: at plowing, planting and weeding. Cultivation is the period of greatest labour shortage if hand hoeing is the method used.

The area of crops which can be weeded by hand is limited by the amount of farm family labour available. All annual crops are weeded at the same time, during the wet season. The area of land that can be hand weeded therefore limits the area of land which could be plowed using ox-drawn equipment. Major expansion of annual crops is possible if the use of ox-drawn equipment is extended beyond plowing into weeding.

Weed control, soil/water conservation and crop yields

Weeding helps conserve moisture by forming a surface soil mulch which also helps to control weeds. Weeding more frequently, or deeper, than is needed to control weeds does not increase crop yields; indeed, because it aids the rain in breaking down the soil structure and sealing the soil surface, crop yields may be reduced.

Smallholder farmers commonly do not start weeding early enough. Having waited for the first rains before starting preparatory cultivation, they are naturally late with planting and by the time this has been completed the weeds are well developed on the earliest-planted land; farmers are therefore unable to catch up and weed at the optimum time.

Poor weed control is one of the major causes of low yields, especially on smallholdings. Whereas weed control in temperate climates usually increases yields by about 25%, in the

tropics it can frequently lead to 100% increases (Webster and Wilson, 1966).

It is important to weed while the crop is young. Experiments with various crops, especially maize, groundnuts and cotton have shown that crop growth is severely checked in the early stages by even a moderate cover of weeds, and that this reduces final yields (Ducker and Hoyle, 1947). Conversely, if the crop is weeded early in its growth, quite heavy weed infestation at a later stage does not affect yields.

Women in agriculture

Women play a central role in food production. Their activities determine the amount of food available for consumption in the home and they provide 60–80% of the labour required for farming activities including weeding (Kameri-Mbote, 1992). They are thus the ones faced with the greatest burden in times of famine, drought and other environmental crises.

Agricultural policy stresses food production with the aim of achieving self-sufficiency. The determining factor in this respect is women. Of the total Tanzanian population 80% live in rural areas, and 60% of these are women who must ensure adequate food for their families regardless of the type of land or quality of their farm implements. In their efforts, they experience numerous constraints including poverty and ownership rights.

Similarly, the transfer of land in an almost exclusively male individualised tenure system means that women cannot use such land to obtain credit. Furthermore cash crops, which are controlled by men, take up more arable land compared with the food crops grown by women. All these factors militate against action by women to solve problems affecting draft animal technology. In the HIMA Project, of all the villages surveyed 6 women owned cattle as opposed to 271 men.

Advantages of draft animal power

Hand-hoe farming is physically exhausting. Women who carry out most of the work on farms are exposed to intense heat throughout the day, and they return home exhausted. With animal power, work is finished in the early

hours of the day, farmers are less tired and thus have the mental and physical resources to manage their homes, work on other projects and participate fully in community tasks such as building schools and roads.

With animal-drawn implements, operations such as primary tillage (plowing) can be carried out at the correct time especially in areas where the rainy season is short and it is important to plant very early in the season.

Weeding is the major limit to expanding the area farmed. Hand weeding is slow, and by the time the farmer has finished the plot, weeds will be growing again on the parts of the field weeded first. Weeding using animals is faster and more efficient than hand weeding, and weeds are removed when still very young.

HIMA's assistance to rural women

The use of animal power in field activities, eg, plowing, ridging, weeding and transport is the major concern of the HIMA project in reducing the drudgery for women in agricultural activities resulting from the use of hand tools. Activities include supporting women's groups to obtain donkeys for transport of crops from field to homestead and to acquiring appropriate rural transport equipment, such as carts and wheelbarrows.

Conclusion

Most small-scale farmers in the project area are women and they are aware of the advantages of using draft animals as well as training their animals in farm work. Hand hoes are still used for weeding because draft animal weeding technology is not well established. The project will investigate ways of supporting women by introducing weeding technology and other animal-powered equipment.

References

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