Transfer of animal traction technology: cultural and social issues in Tarime District, Tanzania

by

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Abstract

About 10–15% of farmers in Tanzania use animal traction implements in agricultural production. In Tarime District the use of ox plows began in the 1920s and by the late 1980s about 25% of the land was being cultivated by oxen. Although this technology is officially favoured by the government, little effort has been made to widen its use to cover all labour bottlenecks. The manner in which animal traction technology is transferred in Tanzania tends to change, but at the same time consolidate, social and cultural aspects of the division of labour in the households. The existing traditional divisions of labour and the socio-cultural tendencies that influence them can be changed through more appropriate ways of transferring this technology to the farmers. One of these ways might be a selective oxenisation approach which seeks to tackle known labour bottlenecks.

Introduction

It is now generally accepted that one of the benefits of using animal traction is a saving in labour use per unit of output (Pingali, Bigot and Binswanger, 1987; Spencer, 1988; Panin and de Haen, 1989). However, very often some important aspects of labour are not fully considered when attempts are made to transfer animal traction. For example, social costs need to be taken into account when attempting to introduce animal traction: the use of animals in cultivation alleviates the drudgery of the traditional cultivators (often men) but at the same time increases the social and economic costs of women and children who are often doing manual weeding and harvesting (Starkey, 1988).

This paper discusses the transfer of animal traction technology in Tarime District, Tanzania, and the extent to which it influences the organisation of labour. The manner in which animal traction technology is transferred in Tarime District appears to have dual effects; it causes changes in the social and cultural aspects of the organisation of labour, but at the same time it tends to perpetuate and to consolidate existing forms of the social division of labour. An attempt will be made to explain this paradox.

Animal traction in Tarime District

The use of animal drawn implements in Tarime District began in the 1920s. Animal traction was introduced into this area by enterprising Luo farmers (Iliffe, 1979; Tobisson, 1980; Kjærby, 1983) and by migrant labourers who learnt how to use it in Kenya.

The introduction of draft implements in this area coincided with an increasing demand for food and cash crops—the former being stimulated by population growth and the latter being a result of colonial economic policies. Farmers obtained cash from cultivating cotton and maize, and from selling their labour, and used this money to buy plows. By using plows for cultivation the farmers could alleviate the labour shortage problem which was partly caused by migration to gold mining areas in Tarime District.

There has been no particular programme or systematic project to transfer animal traction in Tarime District. By the late 1950s about 20% of households possessed a plow (Tobisson, 1980); by 1988, 30% of households did so (Sosovele, 1991). In 1988 there were about 40 000 oxen, 1660 donkeys and 14 000 plows in Tarime District and about 25% of the land in the district was cultivated using animal power. About 40% of the plow users do not have their own implements; they hire or borrow them, or participate in joint work teams (Sosovele, 1991).

Although the lack of specific animal traction programmes in Tarime District has not restricted the spread of this technology, it has influenced the nature of its transfer. Plows and sledges are the only animal traction implements used by the farmers in this area. Other implements are neither used nor known by the farmers and no attempt has been made to introduce them.

Technology transfer

Knowledge of how to use draft animal equipment and how to make harnesses, do simple repairs and train the animals has spread within the farming community of Tarime District through traditional

Photo: Paul Starkey

Women making ridges with mixed team of oxen and cows in Tarime District, Tanzania

social interactions. Farmers who know how to use draft equipment teach others; a father (or a male member of the community) teaches his male children (or other male members of the community), often by working with them. This pattern of transferring knowledge is based on gender and tends to consolidate the traditional division of work in the household in the form of gender specialisation.

This process is influenced by the traditional social system or ethics. Through traditional forms of socialisation and social control (such as various initiation rites, rituals and kinship relations) boys are taught to perform specific tasks which are different from those which the girls are taught and expected to perform in the community (Boserup, 1976). Under these conditions boys and girls are often taught separately, which tends to reinforce a sharp distinction between the males' and the females' tasks. This tendency is reflected in the transfer of knowledge about animal traction: male members of the community appear to have both operational and technical knowledge whereas women have only the operational knowledge.

Division of labour

Before ox plows were introduced in Tarime District, men used to clear the fields and, together with the women, do the first cultivation. Women were responsible for weeding, harvesting and transporting crops, and if manure was used it was the women who carried it and spread in on the fields. Some men migrated to do wage labour after cultivation, but even those who stayed did not perform the other farming tasks because gender specialisation had been so deeply internalised among the farmers that they were unwilling to perform "women's" activities for fear of being ridiculed by the others.

The introduction of animal traction has partly changed the division of labour between the sexes. In households which have access to ox plows, cultivation is usually done by men and boys (13–15 years old): men guide the plows and the boys lead the animals. Women and girls (13–15 years old) do the planting, clear the weeds or lead the animals if boys are not around to do this work. Although women are usually no longer directly involved in cultivation, as they used to be when hand hoes were used, they may participate in cultivation if men are not around to do this work.

Transportation is the other activity where the introduction of animal traction has led to a change in the division of labour. Transportation is still regarded as a women's activity, but when ox sledges are available men do this work. Ox sledges are not common in Tarime District—less than 15% of the farmers who use ox plows also use sledges—but in households that do own them, men use them to transport not only farm inputs and produce and manure but also water and firewood.

But changes in farmers' attitudes about gender roles in agricultural and household activities have been

limited, and the introduction of animal traction in Tarime District has not led to fundamental changes in the division of labour, for two main reasons. First, the transfer of this technology has not involved both sexes; male farmers have usually been the main contact group when "new technologies" have been introduced to the rural areas. Lack of formal training facilities has compounded this problem to the extent that training and transfer of knowledge has followed traditional patterns.

Second, the transfer of animal traction technology in Tarime District has not so far involved implements other than plows and sledges. So while changes in the division of labour have occurred in field activities that can be done by draft animals, for other activities traditional perceptions about gender roles are still dominant.

It can be argued that further changes might be brought about in other labour bottlenecks and difficult tasks if the transfer of animal traction technology can be improved. One possible area of improvement is a change in the approach to oxenisation; instead of transferring complete packages that include almost all the equipment, a better approach might be selective oxenisation, whereby farmers are introduced to specific equipment which will relieve them of drudgery and alleviate labour bottlenecks. Equipment for cultivation, weeding and transportation should be given top priority, and improvements in support institutions would also be needed. This form of oxenisation might possibly influence changes in the division of labour and social-cultural perceptions about farm work.

Conclusion

It is evident that social and cultural constraints on the division and organisation of labour in Tarime District are closely linked to the manner in which animal traction technology is transferred. A few changes in the organisation of labour have taken place, indicating that further changes are likely to occur if the transfer of animal traction can be improved to include both female and male farmers and also to focus particularly on known labour bottlenecks.

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