Factors affecting the efficient use of donkeys in Malawi

by

Wells F Kumwenda

Farm Machinery Unit, Chitedze Research Station
Ministry of Agriculture and Livestock Development, PO Box 158, Lilongwe, Malawi

Abstract

This paper reviews the use of draft animal power in Malawi with specific reference to factors affecting its efficiency. Problems facing smallholder farmers in Malawi include: limited availability of draft animals, poor animal management, lack of personnel for training, pests and diseases, credit availability, food and water supplies, lack of equipment and spare parts and land shortages. Despite these numerous drawbacks, the author recommends draft power in preference to tractor mechanisation as it is more appropriate for Malawi's circumstances, including topography and high population density. It is concluded that farmers with donkeys have significantly higher chances of operating carting businesses, having higher crop yields and higher farm incomes.

Introduction

Serious promotion of the use of animal power in Malawi started in the 1940s. From the start, the animal most commonly used was the ox. At present, close to 15% of the smallholder farmers employ animal power. Ninety-five percent of work animals are found in the northern half of the country. The total number of work oxen is about 70,000 and these are concentrated in the northern and central regions. Only a few carting oxen are found in the southern region, mostly in the Shire Valley. Field size and tradition are the major factors encouraging farmers to use animal traction. Oxen are used for tillage, carting and logging.

Donkeys are used mostly for carting, and a few horses are used in the Zomba Highlands for carting and tillage. Generally, horses are very expensive and are only kept for prestigious sports and riding. Donkeys are found in Karonga, Dedza, Lilongwe, Ntcheu and Chikwawa. Most of the donkeys are found in the Central Region (Gray and Kumwenda, 1983). The total number of donkeys in Malawi is about 2500. Many of these donkeys are offspring of the 300 donkeys that were imported from Zimbabwe in 1957.

Mechanisation for smallholder farmers can involve hand implements, animal traction and motorised cultivation. The most common form of mechanisation at present is hand cultivation using a hoe. The only viable alternative to hand cultivation is animal traction. Human energy by itself is inadequate to make a significant impact on agricultural productivity (Dibbits, 1986). Cultivated area and yields are limited by the slow and heavy toil of hand cultivation, especially in our country where farmers are expected to make fresh ridges every year and to weed twice. An adult using a hand hoe can normally cultivate only 0.4 ha per year (McCloud, 1981).

Use of donkeys in Malawi

Donkeys have been used in Malawi for a very long time, mainly for carting and light weeding. In places like Karonga, Lilongwe, Dedza and Chikawa, apart from the environment being favourable, donkeys are very popular because there is a large demand for carting. Due to the lack of appropriate equipment for donkeys they are normally forced to pull heavy carts and plows/ridgers originally designed for oxen.

Donkeys prefer to remain together. If a farmer has three donkeys, two can be harnessed to an implement and the third allowed to follow, instead of remaining on the farm where if left alone it may become very unsettled.

Limitations of donkey power

Donkeys have several limitations. Donkey meat is not eaten in Malawi so at the end of an animal's working life it is left to die. The carcass has no resale value. No attempt has been made to convert donkey carcasses into by-products for feeding to other livestock as protein and mineral supplements. In contrast, work oxen are normally fattened and sold to butchers at a reasonably high price at the end of their working lives.

Donkeys are small animals compared to oxen. They generate less power so their use is only effective in carting and light field work such as

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weeding or plowing when the land is either moist or sandy (Inns, 1984). The correct implements such as small carts (0.75 ton capacity), ridgers and plows are not available in Malawi.

Donkeys are not adapted to all parts of Malawi. Only a few areas are suitable because of unfavourable climates and or the presence of disease transmitting pests. Unsuccessful attempts have been made to introduce donkeys into eastern Mzimba and Nsanje where tsetse transmitted trypanosomiasis, associated with the nearby wild animals, is a problem.

Since the introduction of the first batch of donkeys from Zimbabwe in 1957 there has been a high rate of inbreeding. Hence, there is a need to introduce new breeding stock to refresh the gene pool. There is very little knowledge of the correct husbandry or management of donkeys in areas such as housing, food requirements, pests and disease control.

Problems affecting efficient donkey use

Economic and financial constraints

Most farmers in eastern and southern Africa including Malawi use hand hoes for cultivation and carry farm inputs and produce on their heads or shoulders. This is slow, difficult and tedious. Inadequate cash prevents farmers from investing in appropriate motorised mechanisation. With rapid increases in population land holdings have become smaller. The average holding size for a smallholder farmer is less than one hectare, which makes the use of heavy machinery uneconomic. High interest rates and long procedures in obtaining medium term credit discourages farmers from applying for machinery loans.

Many farmers cannot afford to purchase the draft animal power package. Some are hesitant to go for a loan for fear of the risks involved, or they may not qualify for a loan (lack of collateral). Another problem has been the increase in the cost of equipment due to the escalating costs of importing steel for manufacturing equipment. In most areas of Malawi donkeys are more expensive than oxen because donkeys are not stolen, unlike oxen which thieves steal and slaughter for sale.

Availability and diseases

The poor availability of trained animals and the presence of insect pests and the diseases they transmit, as well as bacterial/viral diseases further hinder the development of animal traction. It is extremely difficult to keep donkeys in some parts of the country because of pests and diseases. Areas near game reserves and national parks, such as Mpherembe in Mzimba, are infested with tsetse flies which are responsible for transmitting trypanosomiasis. Endoparasites such as worms and flukes are very rarely controlled.

Lack of training personnel

Lack of technical know-how of simple animal drawn equipment in the extension service and at farmer level hinders the widespread adoption of these technologies. Only a few extension agents can confidently advise farmers on how to use donkeys. Lack of personnel for extending donkey traction technology remains a big problem.

In the past the government established several centres in the country to help farmers to train their animals, but unfortunately this programme was phased out because of cutbacks in government staffing. Where training exists it is normally done during the dry season when the soil is dry, and when operations such as weeding cannot be taught. Some farmers train their animals themselves or entrust them to their friends for training, but in most cases bad techniques are used. For example, instead of using voice commands the trainers let the animals get used to beating.

Poor animal management

The management of most donkeys is poor. For better results from the animals, good housing is needed. Most farmers in Malawi have open roofed *kholas*, this is just a pole fence erected around the area where the donkeys rest at night. The problem comes in the rainy season when the *kholas* become muddy and donkeys are forced to stand throughout the day and night. It is not surprising therefore to see donkeys lie down when they are supposed to be working because they are tired.

The second major problem is the beating of animals. Some farmers beat their donkeys with big rough sticks or burn their tails in order to force them to work. They end up bruising the donkeys and damaging their skin, thus rendering them more susceptible to diseases. Twisting of their tails and the biting of donkeys are some other bad practices.

Availability of feeds and water

Failure to provide an adequate ration for the energy needs of work will result in the loss of body weight and consequent weakness and susceptibility to diseases. Supplementary feeding is important for draft animals especially in the dry

Photo: Paul Starkey

Photo 1: Yoked donkeys pulling an 'ox cart' in Central Malawi

season when animals get little from natural pastures (Gray and Kumwenda, 1983). Availability of foods is a problem in many areas, animals become thin and may be too weak at the start of the crop season to provide sufficient power. Techniques for conservation of forage for use in the dry season have not yet been fully exploited.

Animals used for carting tend to be in a poorer condition than those used for field work because carting animals are used more frequently. Most of the animals used for carting are taken out very early in the morning to the market where there is no food. By the time the farmer returns home the time left for grazing is often very short. The donkeys can feed for only a few hours each day on whatever they can find near the homestead before they are put back in the kraal (*khola*) overnight.

Some parts of the country do not get enough rain and because of this soils quickly become dry. Availability of drinking water as well as good pasture becomes a big problem. Water is also required for preparing the dips. In hot weather animals lose a lot of water which results in dehydration and reduced food consumption. In many areas animals have to travel long distances to find drinking water which is often dirty and contaminated.

Uncertain supply of equipment and spare parts

There is unwillingness amongst distributors and shop owners to stock animal power equipment and spare parts because of low profit margins. The very seasonal demand discourages many small shop owners from stocking draft animal equipment as this results in their capital being tied up for several months. Also, manufacturers are unwilling to open distribution centres for small shop owners and farmers.

Lack of suitable equipment

Donkeys are under-utilised because of lack of suitable equipment. Donkeys at present pull very heavy carts designed for oxen and this together with poor harnessing limits the efficiency of these animals (Photo 1). An important lack is the donkey weeder without which a farmer is forced to use a ridger or very rarely a cultivator. Farmers find it difficult to adjust the present cultivator and therefore its performance is never satisfactory. At the moment locally produced animal draft equipment does not include an efficient inter-row donkey weeder, a light donkey cart or a multi-row donkey drawn planter.

Poor harnessing techniques

The amount of draft power required to pull implements varies with the type of harnessing, implement, the terrain, type of soil and many other factors (Inns, 1984). The majority of farmers in

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Malawi are still using very crude yokes (Photo 1). These yokes allow only a small contact area with the donkey's neck and if the securing ropes are too tight this can interfere with the animal's normal breathing.

Land shortage and poor terrain

The human population is so high in some areas that there is insufficient land for animals such as donkeys. In these areas donkeys sometimes feed on farmers' crops especially green maize and pumpkins. Farmers with small pieces of land (less than 0.6 ha) cannot afford to produce enough fodder on their farms and must use the cut and carry method to feed their donkeys. The small size of fields is a serious constraint to the growth of mechanisation. Farmers with scattered fields and those living in hilly areas may benefit from using donkeys because it is difficult to cultivate with machines in these areas.

Conclusions

At present donkey traction seems more appropriate for smallholder farmers than tractors because of the high purchase and maintenance costs of tractors and the lack of skills required to use them. Donkeys are self perpetuating and with sympathetic treatment their work output can be high. Farmers with donkeys have significantly higher chances of operating carting businesses, having higher crop yields and higher farm incomes.

Most of the problems affecting donkey traction would be considerably reduced with more training. More integrated studies on donkey traction should be undertaken by a group consisting of an animal scientist, an agricultural engineer, an agronomist, an extension agent and an economist, so that the best possible support is available for smallholder farmers.

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