

# The status and potential of donkeys in the Southern Highlands of Tanzania

by

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## Abstract

*Use of animal power in field operations and for transport is now becoming more common in Tanzania. The Southern Highlands have about 140,000 oxen and 12,000 donkeys. Oxen are mainly used for plowing and occasionally for weeding, while most of the donkeys are used as pack animals. Donkeys have a low status in society and therefore their uses in field operations have received little attention. This paper discusses the potential of donkeys for agricultural production in the Southern Highlands. It describes the strategies, training and extension experiences of three local organisations that have promoted the use of donkeys for weeding and transport. It concludes that the donkey, as an indigenous tropical species, may have a greater contribution to make in the future in sustainable agricultural systems.*

## Introduction

The Southern Highlands of Tanzania consist of Iringa, Mbeya, Rukwa and Ruvuma Regions and cover about 25% of the country. The altitude varies from 475 to 3000 m above sea level. Annual precipitation ranges from 600 mm to 2600 mm. Because of favourable growing conditions, the zone has considerable agricultural potential and many crops are grown. One third of the maize in Tanzania is produced in the Southern Highlands. Agricultural production, as elsewhere in Tanzania, is dominated by smallholder farmers who have very limited access to tractors or other sophisticated equipment.

A survey undertaken in Mbeya Region showed that the majority of farmers weed late, leading to low yields of maize (Rain, 1984). A possible reason is that weeding is an operation done mainly by women, who also have much domestic work to do in looking after their families. In other cases weeding comes at the same time as other field operations eg, land preparation for the second crop of beans, pruning and weeding of coffee fields and harvesting of the first crop of beans.

Although oxen are often considered the draft animal of choice, there are signs that the value of donkeys as draft animals is being increasingly appreciated. Donkeys are indigenous to the tropics and with the increasing recognition of their value in local systems their rate of adoption as draft animals is likely to increase. This paper describes some of the present efforts and future plans of Animal Draft Power-Mbozi (ADP-Mbozi) working in Mbozi District, Mbeya Region, to aid in this adoption.

## Donkeys: their status, use, and potential

### *The status of donkeys*

Donkeys in the Southern Highlands are regarded as animals for women and have a very low status in society. There are derogatory sayings which degrade donkeys. For example there is a common Swahili saying which, literally translated, says 'A donkey always appreciates by kicking'. This means that a donkey is such a bad animal that it will kick you even if you try to be nice to it. This saying is applied to persons who do not appreciate the assistance or help given to them by other people. A family that keeps and uses donkeys for farm operations in most cases loses social status. In a survey carried out in one of the villages in the Southern Highlands, a group of farmers were asked if donkeys were used in farm operations (UAC, 1992). In response the farmers burst into laughter and said it was ridiculous to use donkeys for field operations. They went further by remarking that only poor farmers use donkeys for that purpose.

### *The current usage of donkeys*

The estimated number of donkeys in the Southern Highlands is over 12,000 (Table 1). The authors believe that the actual number of donkeys is probably greater than this estimate. Donkeys in Tanzania are mainly used as pack animals, usually without special pack saddles. Commodities in sacks are easily transported by being slung over

**Table 1: Estimated number of donkeys and work oxen by region in the Southern Highlands of Tanzania**

<i>Region</i>	<i>Donkeys</i>	<i>Work oxen</i>
Iringa	3847	53,322
Rukwa	3825	45,481
Mbeya	4695	44,045
Ruvuma	40	93
<b>Total</b>	<b>12,407</b>	<b>142,941</b>

*Source: Starkey and Mutagubya, 1992*

the back of the donkey. With bulky commodities rope lashes are used to secure the load on the back of the animal. Very simple pannier frames are used in Rukwa Region when transporting items such as fish. Riding donkeys for personal transport is also common. The use of donkeys as pack animals is principally associated with women.

A limited number of farmers (mainly men) use donkeys for pulling carts and occasional plowing. The common harnessing method used is an ox yoke, which is inappropriate. Donkeys like other equids, have muscular strength in the chest and shoulder but not the neck. More power can be generated if a harness allows the animal to push from its chest or shoulders. Breast-band and collar harnesses are therefore suited for donkeys. The use of a yoke leads to bruises and sores because it does not match the anatomy of the donkey.

### ***The potential of donkeys***

Donkeys are very efficient as transport animals. They move faster than oxen and therefore can reduce women's burden in transporting firewood, water and crop produce. Donkeys normally weigh about 125-150 kg, they frequently carry loads weighing half or more of their body weight. The appropriate load will depend greatly on the size and condition of the donkey. A healthy, well-fed donkey can carry more and work longer than a donkey weakened by disease and poor nutrition. Various other factors also influence how much can be carried, eg, the distance to be travelled, the gradient of the terrain, the desired speed, the pack saddle and the bulkiness of the load.

In addition to pack work, donkeys can be used for plowing, cultivation and carting, but their low body weight means they can only pull implements which require low draft forces to move them. As a

rule of thumb a healthy donkey can pull with a force equivalent to 16% of its body weight throughout a working day. Donkeys can produce draft forces higher than this, but they are unlikely to be able to sustain them for long periods without frequent rests. This means donkeys are useful for tasks such as weeding, particularly on sandy soils. Weeds are a major problem facing crop production in the Southern Highlands because they grow very fast under the favourable climactic conditions. Therefore, the most labour-intensive operation is weeding, which requires nearly 50% of the total labour input in crop production (Kwiligwa, Shetto, Rees and Ley, 1994). If donkeys could be used for weeding, labour demand would be substantially reduced, releasing farmers, mainly women, for other farming activities or for leisure.

### **Strategies for promoting the use of donkeys in weeding and transport**

In the Southern Highlands donkeys are widely used for the transport of agricultural products, salt, dried fish and other goods, mainly along the Rukwa Valley in Rukwa and Mbeya Regions. Their use for field operations including plowing and weeding is not common in this region, despite attempts by ADP-Mbozi to promote the use of draft donkeys through demonstrations in villages and at the training centre. Other promotional work is carried out by the Oxenisation Extension Training Service (OXETS) through its training courses for farmers and trainers. Realising the potential of donkeys in the area, ADP-Mbozi is promoting the use of donkeys by smallholder farmers in weeding and transport, especially in Ndalambo Division, where there are many donkeys. During seminars at the project centre in Ndalambo farmers are exposed to the use of donkeys for weeding and pulling carts. Farmers field days are also organised at the ward level to enable more farmers to see donkeys in operation and to raise awareness of their potential.

### ***Donkey harnesses***

A donkey harness has been developed by ADP-Mbozi. It is made from locally available materials eg, canvas and a piece of wood. The first prototype has been demonstrated to farmers in Ndalambo division. Some collar harnesses have been introduced from Kabete, Kenya. But they seem to be complicated and expensive. Therefore ADP-Mbozi developed collar harnesses from locally available materials, using worn out rubber

types of motor vehicles. Some farmers have shown an interest and will be testing various types of harnesses. The harnesses are used for weeding operations with the common type of cultivator. However, this cultivator is expensive and heavy for the donkeys. Therefore, collaboration with other institutions will be sought to obtain more appropriate, lighter implements. For sandy soils the suitability of using plows without mouldboards will be investigated.

### **Donkey carts**

Donkey carts are currently made from the same standard axles used to make ox carts. But the board size for loading is reduced to allow loading of only three bags of maize (totalling 300 kg), to accommodate the lighter weight and lower sustainable tractive force of the donkey. The project will consult farmers on the possibilities of using sledges with donkeys, as donkey carts are expensive.

### **Training of donkeys**

Farmers interested in owning donkeys need assistance in training the animals. So far, three households have purchased donkeys (one pair per household) and they are being assisted in training them for weeding and transport. A clean field, devoid of obstacles such as stumps, is a prerequisite for a successful weeding operation. Therefore farmers are being encouraged to remove all obstacles from their fields so that weeding operations can be done more efficiently.

### **Conclusions**

Over 80% of the population in the Southern Highlands is employed in agriculture. The use of the hand hoe still predominates, particularly for weeding. Although efforts are being made to promote draft animal technology through

oxenisation, the technology does not easily reach women farmers, who contribute 70% of the labour force in agriculture. Donkeys and those who use them have low status in the society. Consequently the technology of using donkeys in various field operations has not received much attention. Improved technologies for donkeys will not only make their use more attractive but will substantially reduce drudgery in weeding and transport, especially for women. Fortunately, appreciation of donkeys as draft animals is presently increasing. Fielding and Pearson (1992) acknowledge this when they say donkeys are an option for women that has not been fully explored. Uptake may be slow and the initial impact small, but it is likely to be sustainable. Donkeys are indigenous to the tropics and, with the increasing recognition of the value of indigenous systems, it may be that the day of the donkey is approaching.

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