

Economic and gender issues of donkey use in Kweneng and Kgatleng Districts, Botswana

by

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Abstract

One hundred and twenty farmers were interviewed in the Kweneng and Kgatleng Districts of Botswana. Farmers owned on average 13 donkeys each. Donkeys were used for draft and transportation purposes, including carrying firewood, people, inputs, produce and water. For the 85% of farmers judged to be resource-poor and unable to afford oxen or tractors, ownership of donkeys provided the best alternative technology for farm power and transport. Donkeys are cheap to purchase and also cheap to maintain. This has resulted in higher gross margins for farmers who use only donkeys than for those who hire tractors for tillage purposes. Despite widespread ownership of donkeys (about 50% of farmers), only 17% of the donkeys were ever used for work. Under-utilisation of donkeys was more pronounced among women farmers because of the many constraints facing them, such as their inability to own carts and to train animals for draft work.

Introduction

Donkeys are used as draft animals and beasts of burden in many developing countries (Crossley, 1991; Svendsen, 1991). The major reasons for their widespread use are:

- they are cheap to own and are economical to use in small fields
- they are normally docile and can therefore be handled by women and children
- they can be used in areas with poor infrastructure (roads)
- they are hardy and can survive in dry areas and on poor quality food.

In Botswana, the government-assisted Arable Land Development Programme (ALDEP) was started to help resource-poor farmers, especially women, to purchase farm resources such as draft animals and implements by subsidising 85% of the cost. By

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1992, ALDEP had distributed 48,313 draft animal packages of which 21,878 were for women farmers. The number of donkey packages was 3562 (Kerapeletwe, 1992).

In 1990, a national survey indicated that farmers used principally tractors (34%) or oxen (33%) for tillage purposes (Kerapeletwe, 1992). For a time, free tractor plowing was available under the Accelerated Rainfed Agriculture Programme (ARAP) but this has now stopped, and animal power has been regaining importance

The number of donkeys in Botswana increased from 145,900 in 1988 to 154,900 in 1990. In 1990, donkeys were used for plowing by 11,000 farmers (out of 68,000). Only 36% of those who plowed with donkeys actually owned them. The rest either borrowed or hired them. The number of farmers using donkeys increased by 7% between 1988 and 1992 (Kerapeletwe, 1992). The major reason for the increasing use of donkeys is the continued rural to urban migration of young men, which has left the rural areas short of the male labour needed for land clearing, training of draft animals, and plowing (Chervichovisk, 1985). More of these tasks must now be done by women. While men can own and use oxen, women, who are increasingly becoming the decision makers on farms, cannot afford cattle or tractors and must use donkeys instead. The importance of donkeys to women farmers cannot be overemphasised.

Donkeys are used as pack animals by subsistence farmers in Ethiopia and Zimbabwe and do not need sophisticated roads (Crossley, 1991; Pandey, 1991). However, it has been suggested that the efficiency of donkey use is impaired by lack of good management, including mistreatment, poor housing, incorrect nutrition and inadequate attention to diseases (Mohammed, 1991). Because of the rapidly-increasing interest in donkey power in Botswana, it was decided to conduct a survey

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of the status of donkey use with special emphasis on gender issues.

Methodology

One hundred and twenty farmers were selected randomly from the Kweneng and Kgatleng Districts of Botswana. These districts are located in the major farming areas. Farmers were interviewed using a structured questionnaire. Information was recorded on the number of donkeys owned and used, gender of farmer and sex of animals. The uses of donkeys, major diseases, implements owned and used, and constraints faced by farmers were also recorded.

Results and discussion

Utilisation of donkeys

For farm tillage, donkeys were mainly used for plowing. Because most farmers (85%) broadcast their seeds they were obliged to hand-weed. Almost all (97%) of the farmers were found to hand-weed. Each farmer had an average of 13 donkeys as well as some cattle. Although the number of cattle owned far surpassed the number of tractors owned, most farmers preferred tractors over either donkeys or cattle for plowing. Although 52% of farmers owned donkeys (Table 1), only 17% exclusively used donkeys for plowing their fields. This suggests that donkeys are under-utilised in crop production. Many farmers combined the use of donkeys with either cattle or tractors, but 46% used tractor power only.

Several major reasons for the low usage of donkeys were reported:

Loss of weight during the winter preceding the plowing season limits their draft capacity. Only 7% of farmers supplemented their donkeys occasionally with water melons and sorghum bran. Although sorghum milling is done almost daily, people process only small quantities for their daily use and the resultant small amount of bran is likely to be fed to cattle, not donkeys. Since communal grazing areas are overgrazed, especially at the start of the plowing season, the unsupplemented donkeys are left undernourished and weak by the beginning of summer and unable to pull plows and harrows effectively.

The ARAP programme that (for a limited time) provided free plowing with tractors for farmers with less than 10 ha, encouraged greater use of tractor power.

Table 1: Type and source of draft power

	% of farmers surveyed		
	<i>Own</i>	<i>Borrow</i>	<i>Hire</i>
<i>Donkeys</i>			
All farmers	52	9	0.4
Female	50	14	0.8
Male	53	0.8	-
<i>Oxen</i>			
All farmers	60	-	-
Female	36	-	-
Male	92	-	-
<i>Tractors</i>			
All farmers	8	-	46
Female	0.7	-	43
Male	17	-	33

There is a need to plow fast in order to plant in time for the first rains and this favours the use of tractors.

Farmers felt that donkeys in Botswana need to be used in teams of six to ten animals. The available implements, designed for oxen, are heavy. Also, many Botswana soils form hard pans during the prolonged dry spell. The donkeys are small (140 kg) and often weak (due to lack of food) but the draft force needed to plow is large. Since the greater the number of animals used per team the lower the efficiency per animal, the extra donkeys give a small return on the investment made on them. Farmers using cattle power needed fewer oxen per team.

Ownership of donkeys

Fifty-seven out of 120 heads of households were found to be women; 50% of these women owned donkeys while 53% of male heads of household owned donkeys. Each female head of household had an average of four male and two female donkeys. While most men had other sources of draft power especially cattle, almost no women owned tractors and only one third owned oxen. Women, especially those without donkeys, rely heavily on borrowed or hired draft power (Table 1).

Women were able to own donkeys because they were cheap to acquire. Farmers paid an average of 115 Pula (P) to purchase a donkey (US\$ 1 = P 2.7). In comparison, oxen cost P 600 each and tractors over P 100,000. Donkeys were also cheaper than tractors to run, as they do not require any fuel or imported spare parts. Women could get donkeys by exchanging three goats for a donkey or one head of cattle for five to six donkeys. A radio was worth three or four donkeys. Women could also purchase donkeys from ALDEP at a subsidised price. Nevertheless, those women who did not own donkeys, as well as 79% of those who did, hired either tractors (costing P 110/ha) or oxen (P 70–80/ha) to plow their fields.

Use of donkeys for transport

Donkeys were used for transport purposes more than for draft purposes. With a cart, donkeys transported goods from the local townships to the fields, a distance of up to 30 km. They transported water an average distance of 9.2 km twice a week. During each trip a donkey with a cart transported two 200 litre containers. Each family had a household size of on average eight members, of whom half were either very young or elderly; therefore the quantity of water and firewood needed was large but the available human power to fetch it was small. In order to use donkeys for transport farmers felt they must have a cart. Only 17% of the women owned donkey carts (Table 2) as compared to 25% of men. Rural women need some type of assistance in transporting produce to market, otherwise they are compelled to use the tedious methods of wheelbarrows or head-loading. Access to animal transport by farmers, especially women, freed them for other income-generating activities (mainly making local beer, tending livestock and making baskets).

Ninety percent of the donkey carts were made locally from discarded vans and freely available trees and wood. These carts cost only P 800 each. The pickup bodies are purchased from used car dealers for P 250 with an additional P 250 for the axles. Cart production creates employment, as well as income for used-car dealers. This form of transport is much cheaper than buying a pickup (P 46,000), whose depreciation in these areas of poor roads is very high. Most (85%) of these farmers are considered poor, earning only P987 (US\$ 365) per year from their crops. Although 60% of the farmers kept their savings in the form

Table 2: Means of transport for small-scale farmers

	% of farmers surveyed	
	<i>Own</i>	<i>Hire</i>
<i>Donkey carts</i>		
All farmers	12	-
Women	17	-
Men	25	-
<i>Tractors</i>		
All farmers	8	11
Women	0.7	43
Men	17	-
<i>Trucks</i>		
All farmers	18	30
Women	4	37
Men	32	22

of livestock, mainly cattle, 40% of them were too poor to even own cattle. Cart making and utilisation helps this poorest section of the community.

Table 2 shows that farmers, especially women, tended to hire trucks and tractors for transport rather than owning donkey carts. Since they own donkeys but no carts, the donkeys are under-utilised even in the transport sector. This is reflected by the number of donkeys that roam in the rural and urban areas throughout the year.

Costs and returns of using donkeys

National figures show that farmers are increasingly owning donkeys. The reasons for this trend are the low purchase price of donkeys compared to other sources of draft power, and the low maintenance cost of donkeys. Cattle, which have great socio-economic importance in Botswana culture, are much more expensive to purchase and to maintain. The only maintenance cost which is occasionally incurred for donkeys is for veterinary care. At government clinics costs were fixed at a nominal P 0.90 per animal per treatment (although due to distances and shortages, farmers did not often use such services). Donkeys mainly suffer from eye sores as a result of flies during summer. They also suffer from internal and external parasites, but these are rarely treated because farmers feel that donkeys do not die of these afflictions and thus need no treatment.

Drought is a frequent phenomenon in Botswana and a major reason for loss of cattle, but donkeys appear to survive the periodic droughts. Donkeys do not require any imported inputs apart from medicine occasionally.

Farmers may hire trucks to transport their produce, firewood and water, paying up to P 200 per trip. Although farmers generally have small loads to transport at any one time, they must hire the entire truck. This makes truck transport expensive and uneconomical for most farmers. Although farmers harvest an average of twenty-four 70-kg bags of grain per year, they only need to take five to seven bags to market. Donkey carts would be an economical way to accomplish this. Likewise for firewood, donkey carts would be sufficient because farmers are only able to collect small amounts at any one time. Many farmers had already discovered that donkey carts were an economical and efficient means of collecting water, which they tended to do at least twice a week.

Farmers who hired tractors to plow cultivated 56% more land (an average of 7.3 ha) than those who did not hire tractors, but they still had to purchase at least four donkeys for transport purposes. The gross margins for those farmers who used donkeys exclusively for all farm activities compared to those who hired tractors to plow were P 598 and P 17, respectively. The return on capital between the two groups was found to be 28% for donkey users and 2% for tractor hirers. This shows that donkey use can be quite profitable, so long as the major problems that accompany the use of donkeys are eliminated or reduced.

Constraints to ownership and utilisation of donkey power

The study identified some possible problems and constraints that may limit effective donkey use:

During winter, communal grazing areas are overstocked with cattle, donkeys and goats and, since there is no regrowth at this time of year, all animals lose weight. Because of lack of supplementary feeding donkeys are usually very weak at the end of winter when the plowing season begins. This probably accounts for the low rate of donkey utilisation for plowing (only 36% of female farmers who owned donkeys plowed with them).

Although farmers claimed that they did not work pregnant donkeys, it was established that most of the farmers did not recognise pregnancy in their jennies until late gestation.

Since plowing takes place when pastures are poor and daytime temperatures may reach 39°C, most donkeys were released at night to graze. Donkeys may wander long distances in search of pasture and be difficult to find in the morning, leading to delays in plowing and planting.

All farmers made their own harnesses from used vehicle tyres. This type of harness caused friction and then sores, especially in hot weather or when donkeys worked hard and sweated profusely. Also, farmers used either ropes or chains as traces, causing wounds to the animals' backs and ribs. Wounds were often covered by flies, causing discomfort and reduced work output. Donkeys were seldom treated for wounds, and farmers said this was because veterinary centres were far away (13 km on average) and they lacked drugs, also donkeys had low monetary value as opposed to cattle.

A lack of artisans capable of providing maintenance and repair led to early obsolescence of farm implements. Female-headed households were at an additional disadvantage because men were often able to do some small repairs themselves but women usually were not.

Special problems facing women farmers

Although both men and women farmers faced a number of constraints in the use of donkeys, women had more serious problems. Only 45% of the women who owned donkeys used them for draft power. It was in an effort to address women's problems that the government of Botswana, through ALDEP, specifically targeted women. However, the study found that half of the women who were not ALDEP beneficiaries had never heard of the ALDEP subsidy programme or they did not know how to apply for the packages. This communication failure came about because much of ALDEP's information was disseminated during farmers' meetings held in one central place; most women were too busy with household chores and farm activities to attend these meetings. Also, 33% of women could not afford

the 15% down payment required for the subsidised draft power packages.

Women were found to work for an average of 12 hours per day. They contributed 73% of the total time needed on the farm during crop production, and 83% of the total time needed to perform household chores for the family, much of which was directly related to food preparation. Ninety per cent of this work was still done using their own muscle power.

Farmers have to travel, transporting inputs, produce and people, between three locations: the 'lands', where all cropping activities take place, the 'cattle post' where cattle are kept and the village where permanent homes are found. These different sites can be quite far apart. Women also fetch firewood for domestic use. The indiscriminate cutting of trees to get logs for firewood and the construction of kraals and carts has depleted the scarce growth in the vicinity of villages. Women must now travel long distances (an average of 5.3 km) from the village to find wood. Use of a donkey cart would lessen these various transport burdens, but most women, even if they have donkeys, did not own carts and could not afford their purchase price. Women therefore hired donkey drawn carts, paying P 30 per trip, to transport produce, people, water or firewood.

Women farmers found it financially difficult to own the large teams (six to ten donkeys) desired for plowing. Cattle can be bartered for donkeys, but 62% of the female heads of households did not own any cattle (since keeping of cattle is traditionally a male-dominated activity in Botswana). Since they lacked sufficient donkeys, women hired tractors and oxen or borrowed donkeys from neighbours. This meant a delay in plowing and hence planting, since owners of tractors and oxen must complete their own plowing before hiring out their services.

The implements used, being designed for oxen, are large and heavy, providing difficulties for both the donkeys and the women. Also most of the women cannot afford to purchase all the necessary implements. This lack of implement ownership resulted in under-utilisation of the donkeys owned by women. Only 20% of women used donkeys for planting and only 3% used them for weeding.

Donkeys must be trained to work and plow in a team. Training draft animals is a man's job in Botswana, but most of the economically active men (25–45 years of age) have migrated to urban

areas of Botswana or South Africa in search of work. Women, busy with many household and farm chores, lacked the time and experience to train the animals properly. This resulted in delays and poor plowing and justified the expense of hiring tractors and oxen, which come with drivers.

Conclusions

This study found that most farmers kept donkeys either for draft purposes or transport or both. However, most farmers complemented donkey use with other forms of draft power. The study found that donkeys are not only cheap to purchase, they are also cheap to use. In Botswana, the number of donkeys is increasing and more farmers own donkeys than previously. However, despite the higher gross margins experienced by donkey owners, donkeys in Botswana are under-utilised.

Although women farmers in Botswana contributed 74% of the time needed to produce crops on the farm and represented 57% of the heads of household in the rural areas, most of them still faced a heavy burden of household chores and manual labour. Women need modern but affordable technology to lessen their workloads. Donkey power is one such technology, but women farmers face many constraints that limit their ability to own and make effective use of donkeys. Women still continue to use muscle power, despite the presence of a large number of donkeys in these rural areas. The problems facing Botswana farmers range from poor institutional arrangements to poverty. This has left a large number of donkeys idle for a large part of the year, when they could be used efficiently to reduce the long hours of heavy work experienced by rural women.

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