

A review of donkey use in Botswana over a ten-year period

C. Patrick¹, B.V.E. Segwagwe² and A.A. Aganga²

¹Department of Agricultural Engineering and Land Planning

²Department of Animal Science and Production
Botswana College of Agriculture, P/Bag 0027, Gaborone

Abstract

A review of donkey uses during the period 1980 - 1990 was done using secondary data. Results and empirical evidence show clearly that prior to the introduction of the Arable Lands Development Project (ALDEP), donkeys were used primarily for riding and pulling carts. Draught power for ploughing was provided by cattle. The number of households using cattle for ploughing was reduced by more than 50% and that of donkeys increased by more than 64% during the period from 1980 to 1990. Donkey riding and cart pulling remain important means of transport at cattle posts and in the more remote areas of the country. Other uses, including the provision of milk and meat, continue to be insignificant amongst Botswana.

Introduction

Donkeys form a significant portion of the livestock sector of Botswana, rising in numbers from just about 34 000 in 1967 to more than 230 000 in 1993 (MOA 1967-1993). Despite these numbers, traditional uses of donkeys have always been restricted to riding and pulling of carts. The problem of draught power availability on the other hand has persisted, forcing the government to try many subsidy schemes designed to address this problem. There has however been no clear success in this area. One such scheme still operational is the Arable Lands Development Project (ALDEP). The scheme encourages farmers to purchase donkeys for draught purposes at subsidised rates. Since 1982, there is a scheme that promotes alternative uses of donkeys, other than that of draught power. This development has changed the perception that donkeys were only good for the pulling of carts and riding. More people are now using them for draught power.

Use for draught power

Animals were used for draught purposes long before there were any written records. The evidence of this comes from early graves and tomb paintings. In Mesopotamia there were sledges drawn by oxen before 3500 BC, and the civilised peoples of the Indus valley used wheeled vehicles drawn by animals as early as 2500 BC (Friend, 1978). The ideal characteristics of a draught animal include a strong chest or shoulders and strong legs.

In Botswana and as elsewhere in the rest of Africa, cattle, particularly oxen, have always been preferred

over horses and donkeys for draught power, most likely because of their multipurpose nature (Figure 1). In Europe the horse was preferred, because of its swiftness. The donkey on the other hand was never really a popular draught animal for ploughing but was used primarily for transport i.e. being ridden or for pulling carts in Botswana.

The dominance of cattle as the principal draught animals suffered greatly in the period 1980 - 1990. In the southern, Gaborone and central regions of the country, most households simply stopped using them. This trend could be explained in part by the shift to the use of both donkeys and tractors. The use of these types of draught power more than doubled in the same period (Table 1 and Figure 1).

The increase in importance in the use of the donkey as a draught animal seems to have been influenced by the introduction of the Arable Lands Development Project (ALDEP), started in 1982. This government subsidy scheme assisted farmers in acquiring among others, animal draught power. The ALDEP made it possible for people to look at the use of donkeys more positively, removing any perception which negatively impacted on their use. This was achieved through a vigorous campaign to promote donkeys as efficient draught animals in crop production and transport. The number of farm families using donkey draught power increased as a result, from 6 700 in 1980 to 11 000 during 1990. This increase however was detrimental to the use of cattle for draught power, which declined. Evidently donkeys complement very well tractor draught power which also increased in use during the same period (Tables 1, 2 and 3, Figure 1).

Figure 1: Trends on draught power use (Source: Agricultural Statistics Reports, 1980-1990)

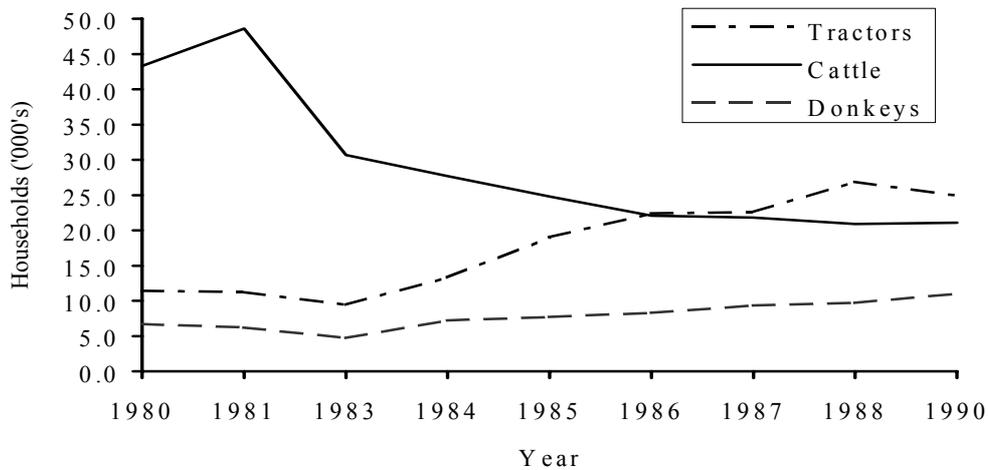


Table 1: Number of households using cattle to plough their fields (Agricultural statistics reports 1980 - 1990)

Agric. Region	1980	1981	1983	1984	1985	1986	1987	1988	1990
Southern	7000	7750	5800	4350	3250	3000	3700	3200	2800
Gabs.	10800	11550	9800	6400	4700	2800	4750	3750	3850
Central	10550	11350	6650	5250	4650	3900	3550	3750	2850
F/town	7500	9000	4300	6950	7100	7750	7200	6200	7050
Maun	7050	8500	3900	4600	4900	4400	2450	3650	4200
Western	400	450	250	150	200	200	150	300	400
Total	43300	48600	30700	27700	24800	22050	21800	20850	21150

Table 2: Number of households using donkeys/mules to plough their fields (Agricultural statistics reports 1980 - 1990)

Agric. Region	1980	1981	1983	1984	1985	1986	1987	1988	1990
Southern	750	1050	450	500	350	850	1100	1750	2300
Gabs.	850	850	250	750	1150	1200	1850	1150	1800
Central	3600	3400	2950	4700	5000	4300	4350	4600	4500
F / Town	300	150	300	650	550	550	900	600	650
Maun	1100	500	600	450	600	1100	950	1300	1450
Western	100	200	100	100	50	300	150	250	300
Total	6700	6150	4650	7150	7700	8300	9300	9650	11000

Table 3: Number of households using tractors to plough their fields (Agricultural statistics reports 1980 - 1990)

Agric. Region	1980	1981	1983	1984	1985	1986	1987	1988	1990
Southern	1900	1350	1350	1150	2400	3500	3500	4350	3850
Gabs.	2700	3200	3350	4950	7000	9250	7700	9500	9050
Central	5650	5700	4250	6350	8750	7750	9000	10350	9750
F / Town	950	700	400	600	750	1450	1450	1700	1750
Maun	150	250	-	200	100	350	800	650	300
Western	-	-	50	50	-	50	650150	300	150
Total	11350	11200	9400	13300	19000	22350	22600	26850	24850

The increase in the use of donkeys as draught animals seems to be strengthened by among others, the fact that more than 72% of all households who use them for draught power own them. The same is not true for the other sources of draught power. Only about 47% of those households who use cattle own them and less than 10% of those who use tractors own them (Table 4).

37% of households, who use broadcasting as a method of planting, use cattle draught power, but only about 9% use the cattle for planting. Of those who use donkey draught power, 17.5% broadcast their crops, whilst an increased number from 20% use them for planting. This shows that cattle are preferred for the heavier jobs such as ploughing, and that donkeys seem to be preferred over cattle for those jobs, which require

careful and more accurate implementation such as row planting (Table 5). Their soft natured temperament allows them to be less hasty when carrying out such tasks.

The real advantage in using donkeys for draught, over other animals is attributable to the strength and resilience of the animal. A donkey can work at a draught force of about 250 N for up to four hours, and per kg of live weight, donkeys produce almost twice as much work as cattle. Donkeys are also more efficient than humans, carrying loads on the level or downhill at no or little more energy than when unloaded. Humans would usually use twice the normal energy for going up a slope (Jones, 1991).

Table 4. Draught power ownership and usage for ploughing/planting (Agricultural Statistics Report 1990)

Type of draught power	Owned	Mafisa ¹	Hired	Borrowed	Other	Total
Cattle	10050	500	3650	5700	1250	21150
Donkeys	8000	-	1650	950	400	11000
Tractors	2450	-	21550	150	700	24850
Others	1650	300	1550	650	2150	6300
Total	22150	800	28400	7450	4500	63300

¹ Mafisa are cattle that are loaned to other people for their use. They are free to use the animals in all acceptable ways, such as milking and draught power, but not for selling. They would in return get a calf a year in additional payment.

Table 5: Planting method and draught power usage (Agricultural Statistics Report 1990)

Type of Draught Power	Broadcast	Row Plant	Broadcast and Row Plant	Row plant by hand	Total
Cattle	20250	600	100	200	21150
Donkeys	9550	1300	100	50	11000
Tractors	20800	3750	300	-	24850
Others	4100	850	450	900	6300
Total	54700	6500	950	1.8	63300

Factors which influence the amount of draught produced

Hitching method or arrangement

As should be expected, the manner in which the draught animal is connected to the object being pulled, will determine the way in which the animal will pull. If for example the dissel boom of a donkey cart is very heavy, it might cause the animal to support a bigger load from its neck, resulting in loss of effort for the actual pulling. Mouth bits should not cause the animal constant pain as this would lead to unresponsiveness. The recommended hitching arrangement is for two donkeys to be hitched side by side, but it is very common to find a team of donkeys in threes or fours side by side (Froese, 1980).

Type and way of harnessing

Donkeys like all other animals may be harnessed either in single, double or multiple units (abreast or in tandem). A harness being defined commonly as either straps and fittings used for hitching and controlling of donkeys and horses or more broadly as a system for linking animals to their workloads, and where applicable to the person controlling them. It is generally accepted that all equids are weaker at the shoulders, but possess stronger chest muscles. Bovines on the other hand have weaker chests but stronger shoulders. Donkeys and horses are therefore usually harnessed from their chests, whilst cattle are harnessed from their shoulders.

Common types of harnesses

Breast strap: This harness is made from leather, woven reinforced cloth or old car tyre casings. It is usually wider and longer for the larger donkeys. The majority of farmers in Botswana use this type of harness (Froese, 1980).

Collar type: The advantage of the collar harness is that it allows the donkey to pull better from the shoulders. The harness is commonly made out of old car tyre.

casings, with wrappings of some heavy cloth. Some padding on the collar is often included for extra comfort. This is the least common of the two types (Froese, 1980).

For both harnesses, traces transmit power from the chest to the pulled object. Single or double swingles are used to link the traces with the eveners. A trek chain then connects the evener to the pulled object. The number of swingles and eveners depend on the number and arrangement of donkeys in a team.

A properly designed harness will allow the donkey to pull from its chest and not from the throat. The material used to construct the harness, should in no way become a problem to the animal. Chains and wires if used should be covered, so that they do not injure the animals (Froese, 1980). A good harness should fit the draught animal correctly, adjustable straps are therefore required so as to fit on a wide range of donkey sizes. In all practical cases, it is not uncommon to encounter bleeding donkeys in work due to poor harness design and make. Wires are used to construct harnesses and because of poor workmanship, these end up causing most of the damage.

Level of training given

Training for draught power

The amount of pull or draught generated by a draught animal depends to a large extent on the amount of training the individual or team of animals has been given. Training enhances the animal's ability to respond to systematic commands that define a communication process between the person and draught animals and also the extent to which the animals will co-operate with each other, so that all their energies are directed towards pulling. The bulk of the commands are really words, which are repeated over and over again. Time spent on training is an investment, the fruits of which are obtainable during work. Training for draught power is similar to training for other tasks. An animal that has been trained can be used to teach the one that is learning.

Training for pulling carts

Just as in the training of cattle for draught power,

training of donkeys for pulling of carts is relatively easier. 'New' donkeys are mixed with trained ones in a team, so that the 'new' will learn from them. Training usually takes between one and twelve weeks (Aganga *et. al.*, 1994). The system of using trained donkeys to help train the inexperienced ones works well because the trained donkeys restrict the movement of the untrained one and helps it settle to work. The only difference between pulling a cart and other draught work, is that carts need braking which should be provided by the animal itself through the fitting of a breeching strap around each animal's hind-quarters (Jones 1991).

Training for ploughing

There is very little training given to draught animals, particularly donkeys. Constant whipping is a good indicator of absence of training. The amount of work output obtainable under such circumstances is usually very small. The belief that donkeys require constant whipping is unfounded, and efforts should be made to improve the conditions under which donkeys perform. The traditional method of training seems to emphasise beating, but well trained animals, donkeys included, require minimal or no beating whatsoever.

The whipping comes out of frustrating experiences in trying to plough with a team of animals which are not 'co-operating'. Not only is valuable time lost in having to re-plough portions previously left unploughed, but a lot of pain is experienced just to get the team to work together.

The trick is to get the team of animals to move in a straight line, so that the resulting furrows are also straight. Donkeys though easier to handle often display stubborn behaviour, and this is usually only addressed through good training. Big donkey teams (6, 8, and 10 up to 14 animals) are common through out the country (Aganga and Maphorisa, 1994). The larger teams usually pull two furrow mouldboard ploughs, whilst smaller teams may work with single furrow ploughs. The best training system is one where more than half the team is already trained, and if some of the animals have pulled a cart before, then preparing them for ploughing is usually a much easier task.

Training for riding

The aim of this type of training is to produce a donkey, which is calm and pleasant to ride, which goes forward freely and obediently, and in response to simple instructions from the rider becomes a useable animal. The animal should be happy and willing to be ridden co-operatively and executing a reasonable level of companionship.

The most common method in training for riding involves an expert rider who first takes the donkey to be trained and ties it to one that is already well trained. regulations have marginalised this activity.

Riding on the trained one, the untrained donkey is forced to follow so that it can be very close to the trainer. The second step involves the trainer switching sides and rides on the untrained donkey. The untrained donkey now has problems, as it is not able to run away.

The trained one restricts its movement. Even though it tries to run and jump in an effort to dispose of the rider, it usually comes to the realisation that the rider would not go away. The final stages of this type of training, then concentrate on giving the donkey some basic commands, such as stop, trot, gallop and reverse.

Animal care

No animal has the capacity to work indefinitely without proper food, rest, water and treatment if sick. Under normal conditions all animals require a basic food ration (maintenance ration), but if work has to be performed, a work ration becomes necessary. For a sustained performance, feeding, resting and watering are essential requisites. In drought prone areas like most of Botswana, the provision of feed during the cropping season is therefore always necessary. Farmers generally do not put aside feed for their draught animals, preferring to send them for grazing after work.

This is usually part of the problem since the animals have to search for water and grazing all the night in readiness for the following day's work. The animals do not find time to rest. This condition is however likely to predispose the animals to diseases. In the traditional sense draught animal care includes only making sure that the animals do not graze other peoples crops during the cropping season. During the off season period, animals are left to fend for themselves.

Other uses

Riding and packing

Donkey riding is still predominant in rural Botswana. It provides an immediate means of transport for the majority of livestock farmers in most of the inaccessible areas. Most of the farmers who own donkeys use them for transport of both people and household goods (Aganga *et. al.*, 1994). Riding of donkeys requires the use of two basic pieces of equipment; a saddle and a bridle for control. Traditionally however the riding of donkeys is a casual affair, with no elaborate equipment needed. Expert riders do not even need a blanket for cushioning. They are most comfortable sitting between the pelvic bone area and the tail.

The use of donkeys as pack animals is diminishing, as the road infrastructure continues to improve. More and more people now have access to automobile transport. Donkey use for transport is however still found at cattle posts. Carrying of game meat used to be a common donkey activity, but stringent wildlife hunting

Meat and milk

Donkey meat is consumed in certain isolated areas of the country, such as in the Kgalagadi, Barolong and some areas of Kweneng. Those who consume it, claim that the meat is very nutritious and healthy to eat, but the majority of Botswana do not consume it. Though the donkey rarely produces excess milk, donkey milk is very close in composition to that of human milk, and therefore suited to babies whose mothers might be having problems supplying a sufficient quantity of human milk (Jones, 1991). The use of donkey milk in Botswana is however not documented. In some of the communities where donkey meat is not consumed, there is now a growing concern with the ever-increasing donkey numbers. Several people have come out in support of a donkey meat processing facility for the production of pet food and export meat to donkey consuming parts of the world. This would create a ready market for donkeys. The concern is that being heavy grazers donkeys tend to clean the veld of all grazing resulting in lack of grass for cattle.

There is potential however for donkey meat in the feeding of captive carnivorous species, such as crocodiles, the farming of which is taking root in the

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Chobe and Thamalakane rivers. The same is true for facilities where animals such as lion, cheetah and hyena are kept e.g. the Lion Park south of Gaborone. These places currently face little or no competition for donkey meat, and are likely to continue using this enormous resource.

Conclusions

Donkey numbers have increased steadily during the last decade, but despite this increase their uses have not expanded to match the increase.

The ALDEP scheme seems to have succeeded in getting more households to use donkeys for draught power, more especially for jobs that require careful execution, such as row planting.

Riding and cart pulling continues to be important uses for donkeys in rural areas and at the cattle posts.

Other donkey uses, such as the provision of milk and meat (both for human and wildlife farming purposes) continue to be insignificant amongst the majority of Botswana.