

## Calculating the true costs of donkey ownership

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### **Abstract**

*Whether or not the supervision of donkeys is neglected, it still represents a cost. In addition, to get the best work from donkeys, castration and deworming may be necessary. Regarding donkeys as cheap animals because their purchase price is low and they can feed themselves can distort any calculation of the true value of donkeys, and thus does the donkey a great disservice.*

### **Introduction**

The value and, correspondingly, the cost of work is so difficult to calculate that often it is easier not to bother. This is particularly true of the work of women, and of animals. Where African women are concerned, some of the value of their work is reflected in their 'lobola' or 'bride price', but since this also relates to their capacity to bear children, not to mention their social status, the work element is easily forgotten. Likewise with animals, since they also have a social as well as a meat value, and if they perform any work at all (as even dogs and cats do, for instance), this is usually ignored. This failure to calculate the work element impacts particularly on the donkey. Although its flesh can be eaten, it is not normally regarded as a source of meat, and it comes low on the scale of social values - although this is changing. But still in many places the trading value of a donkey is low for the very reason that its work value is not sufficiently taken into account.

It hardly needs saying that items of low value tend to receive very little care and attention, since it is assumed that they can easily be replaced. This is not true of donkeys, as anyone who has recently tried to buy one knows: it is fiendishly difficult to find a seller. Also, on the whole, female donkeys are slow breeders, and all donkeys are slow to mature. It is surprisingly difficult to replace a donkey, which fact demonstrates the essential illogicality of the low price of a donkey. It does not even reflect demand.

Value, however, obviously does not only consist of price, whether buying or selling. The total cost of an animal needs to be known before any calculation can be made as to economic potential.

### **The cost of donkeys**

There are a number of elements to this cost.

#### ***Buying price***

As already pointed out, this can be unnaturally low, although in some countries such as Zambia (Mwenda and Chelemu, 1998) demand can raise the price to

that of an ox. If the price is low, this of course is a bonus for the buyer.

#### ***Castration of males***

As argued elsewhere (Jones, 1997a), this is a necessary operation for male working donkeys, that is for about half of the population of working donkeys. The female half, in balance, have to sacrifice some of their work value to the periods when they are too gravid for work near the end of pregnancy, or cannot easily be separated from their foals for about three months after parturition.

Castration of males is a direct cost, variable according to the availability of the skills required and/or the drugs required. In Zimbabwe, for instance, anaesthetic is required by law, thus making surgical castration very expensive. At the same time, most authorities do not recommend the much cheaper burdizzo for donkeys.

#### ***Deworming***

Not many donkeys can be kept in conditions, which are clean enough, and with low enough populations to minimise infestation by intestinal worms, so the twice-yearly administration of antihelminthic drugs is necessary to maintain good condition and normal life-span for donkeys. Even if the cost of this for each individual donkey is not high, the dosing of a small herd can involve the owner in an outlay which represents, twice a year, a noticeable inroad into that month's income, so making it difficult to accept.

#### ***Other medication***

Some simple remedies should always be kept to hand, such as eyewash made up from boiled water and salt or bicarbonate of soda, and stockholm tar for wounds.

Most owners also find it convenient to keep some kind of wound spray.

## Housing

In the relevant season, donkeys need protection from cold and wet, especially at night, as they are animals of the hot, dry savannas. Walls are not as necessary as roofing, but roofing is the most expensive (and difficult) part of any structure. If it is thatch, it must be well above the level at which a donkey could try to eat it. Luckily donkeys, unlike goats, will not stand on their hind-legs to browse. All the same, the roof must be waterproof, sufficiently large to shelter all the donkeys using it so that none are wet by any rain (Figure 1). Housing, however, does need to be cleaned out on a daily basis, to reduce the risk of parasite infection and also to allow the donkeys proper rest, as they prefer to sleep lying down, but do not like to do so in their own dirt. The manure, however, can give some return (see below).

## Feed

In most of Africa, donkeys simply graze commonage, so there is little calculation of the extent of land (depending on its vegetation) needed to feed each donkey. As they eat a variety of plants and parts of plants, and dry grass suits them better than green, donkeys' demands on the environment are not heavy, and when free-ranging they tend to use a very large area lightly rather than a small area heavily. This ranging also has implications for supervision. It is estimated that, if donkeys are to feed themselves by grazing, they must be allowed at least six hours a day to do this, not including the hot hours of the day. As donkeys only have a small single stomach, unlike a ruminant, this six hours should be spread over the day to allow the necessary frequency of ingestion and digestion. If this is not possible, about 1 kg of legume and 4 kg of straw and 0.5 kg of cereal bran should be provided for each donkey (Fielding and Krause, 1998). This is especially necessary when donkeys are required to work long hours each day, with no days off.

## Equipment

A working donkey must have the minimum of equipment. It must have a single harness if it is

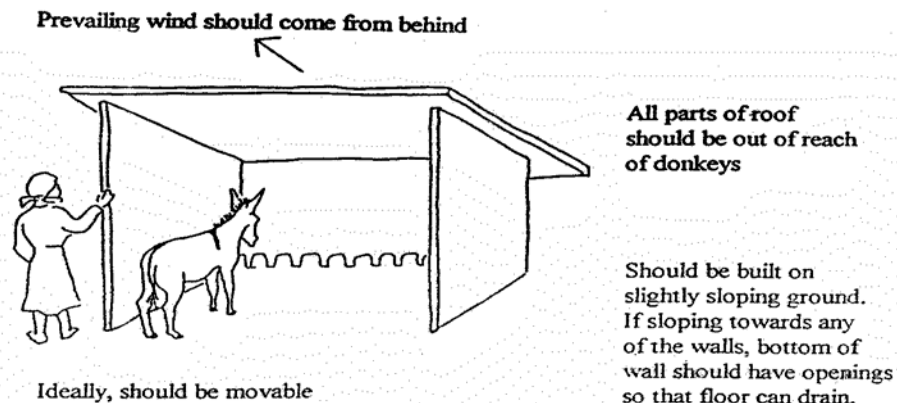
pulling a plough, a double harness (i.e. one with breechstrap and extra backstrap) if a wheeled vehicle is being pulled, and double-sewn sacks at least, preferably a frame or sawbuck saddle, and padding if backloading is to be done. This is quite apart from the implements and/or vehicle, and possibly chains for traces. There must always be sacks of some sort, which can be used as they are, or made into strips or looped strips for carrying poles and the like, but, even more importantly, ropes for tethering and leading. Temporary halters can be made of rope, but it is better to have halters made of straps. For all such things, the more expensive materials (leather for harness, nylon for rope) are better because they are more durable. It is also important to use materials that can easily be made up or mended at home; strong thread and needles are also necessary equipment. Where the donkeys are free-ranging, the leader or leaders might need to be equipped with bells to help in finding them when needed.

## Supervision

Donkeys are good workers for the very reason that they like moving. And they do their moving, largely, for food, soon finding out where the tastiest morsels of the season are to be found. The normal round of a free-range donkey can take it as much as 5 km from home, and if in the mating mood and without suitable mates at home, a donkey will go much further than this, 20 km being no distance at all for a donkey. Another reason for wandering can also be a simple desire for friends, rather than a mate. Donkeys are fussy about the company they keep, and especially if they have been purchased away from a home where they have already formed a friendship, may make great efforts to return.

All this makes the matter of supervision rather time-consuming. Donkeys should be allowed to eat for at least an hour before starting work, so as not to do so on an empty stomach. If free-ranging, and no good grazing is near to home, they might range uncomfortably far in that hour. Or, if needed at unpredictable times of day, as in a transport-contracting role, they may be inconveniently far

Figure 1: Shelter for donkeys



away when needed. Owners generally need to know where their donkeys are, and at the very least the donkeys should be in protective stabling at night, if only to form a good habit. This can involve expenses of supervision: following the donkeys around all day, i.e. full-time work, or only looking for them in the evening - by which time they could be a long distance away or, worse still, scattered, so that this could well amount to regular night work for a supervisor.

There are ways of reducing this supervision:

- Have food (it need not be much, just a handful of their favourite grain for each donkey) and water waiting for the donkeys in the evening to lure them home.
- Make a thrice-daily check on their whereabouts, driving them back to a reasonable distance from home if they have gone too far.
- Initially (for a few months) supervise them on a route sufficiently variable but so unchanging and regularly timed that they form the habit and can be trusted to follow it without supervision. (This is difficult on commonage, where other people and the introduction of other animals might chase the donkeys in another direction, or the planting of fields across their route might make them a hazard to crops).

In whatever way it is done, and however much reduced, supervision is necessary if only to prevent the donkeys becoming a nuisance to neighbours - and it represents the major cost. In different areas different strategies may be used. However, where it is common to neglect livestock, including donkeys altogether during the dry season (because they may only be used for ploughing), the cost of even that can be high, since it often results in the permanent loss of the donkeys. More commonly donkeys - as well as other livestock, if owned - are the responsibility of some dependent child or adolescent. If this person is attending school, it may mean a very long day (including much of the night) with very little chance to do homework. The alternative often is no school at all - and the cost of such a sacrifice of education in the modern world can be high, even though seldom calculated. In Zimbabwe, where the 'street children' of urban areas are now being outnumbered by the 'path children' of rural areas, often orphaned by AIDS, such occupations as livestock herding are these days being suggested as solutions (S. German, pers. comm.), but it still may represent an education loss that the nation can ill afford.

The problem again is how to evaluate work - in this case the work of young humans. What does it cost? A filling meal and somewhere to sleep? It is as difficult to put a monetary value on these as it is on education, but all the same they cannot be forgotten

when calculating the cost of owning a donkey. And immediately it is more apparent that cost effectiveness, here, consists in owning more donkeys rather than few, thus maximising the value of supervision.

### **The value of donkeys**

Under this heading, the income to be derived from donkeys is considered, the better to measure it against costs.

#### ***Work***

The chief value of donkeys is their work. As calculated elsewhere (Berry *et al.*, 1989; Jones, 1997b), a well-cared for donkey can work for up to 40 years; if that donkey works six hours a day, four days a week, this can amount to 50 000 hours of work. Think of that ! But, of course, this is only the potential. For any donkey, it must be calculated how often and for how long it actually works. The return on this work rather depends on what the work is. If the donkey is used for transport, then the rates charged (if any are charged) do not only cover the work, but wear and tear, or depreciation, on the equipment, not to mention the work done by any accompanying handler/s. Still, these things are possible to calculate. It is less easy to calculate the income derived from, say, ploughing. In one district of Zimbabwe, the use of donkeys in agriculture has been estimated to raise yields by 350 kg maize per household, a production increase of 41% (KMTC, 1992), but this is an increase from hoe cultivation, so the cost of the plough must also be taken into account.

#### ***Manure***

Like any animal waste, donkey manure has a value, whether sold or used to improve field or garden production. However, to be useful, it must first be collected, preferably daily so as to keep the stable free of parasites and also to allow it time to heat-convert the nitrogen internally where piled. In a pile, it can be combined with the wastes of other animals (chickens, goats, cattle) and also with any vegetable waste not eaten by those animals - I've yet to discover any myself. Again this involves human labour to be offset against any return, and also a certain amount of wear and tear on equipment such as rake, shovel, sacks, wheelbarrow or cart.

#### ***Milk***

Donkey milk can have a high value, as it is in demand for premature human babies and for people with allergies, not to mention the magical properties

which some cultures ascribe to it, possibly because of its rarity. Donkeys usually only produce enough for their own young which, unlike ruminants, for reasons of nutrition and digestion, should not be separated from their mothers for any length of time. Only in the case of dead foals is a donkey's milk available, so this cannot be considered a significant income.

**Breeding**

All animals may be seen as an investment, since they produce young. Donkeys, however, mature slowly and breed slowly, so the return on such investment can be small - particularly if the selling price of donkeys is low, not offsetting the supervision over the three years between when a donkey is born and when it can work. Since donkeys should not be sold singly, but as pairs of friends (or their behaviour and thus their work is affected), this may add further delay and hence cost.

**Skin, bones and meat**

When a donkey dies, its skin, of much the same quality as goatskin but usefully larger, can be softened and used for clothing and braiding in strips, so it is useful to find out in advance where a local market for this might exist.

Fertiliser companies will buy up the bones of any animal, especially in quantity, so again it is useful to know where such things are bought locally.

Like the meat of almost any animal, donkey meat is certainly edible nourishment for all carnivores, including humans. Some, however, do not like the taste and others do not like the thought of donkey meat. Surprisingly many people eat it, though, and I know of communities in both South Africa and Namibia (CHP, 1995; Jones and Hanekom, 1996).

**Table 1: Checklist for calculating the costs and returns of donkey ownership**

<p style="text-align: center;"><b>Costs</b> (can be averaged over the lifetime of a donkey)</p>	<p style="text-align: center;"><b>Returns</b> (can be averaged over the lifetime of a donkey)</p>
<ul style="list-style-type: none"> <li>• Buying price</li> <li>• Castration of males</li> <li>• Deworming doses</li> <li>• Medicines</li> <li>• Building of housing and repairs</li> <li>• Cleaning of housing (say 0.5h/day)</li> <li>• Fencing (of pastures?)</li> <li>• Supplementary feed when working</li> <li>Evening lures:               <ul style="list-style-type: none"> <li>- snacks</li> <li>- water</li> </ul> </li> <li>• Equipment:               <ul style="list-style-type: none"> <li>- bells</li> <li>- needles, thread</li> <li>- ropes</li> <li>- sacks</li> <li>- harness/es</li> <li>- saddle?</li> <li>- halter?</li> <li>- implements</li> <li>- cart?</li> <li>- rake</li> <li>- shovel</li> <li>- wheelbarrow</li> </ul> </li> <li>(estimate cost on basis of how long they may last)</li> <li>• Supervision (hours per day, week or year per donkey)</li> </ul>	<ul style="list-style-type: none"> <li>• Work (say hours per week/year) (may need to be divided into cultivation and transport, having differential returns)               <ul style="list-style-type: none"> <li>- male donkeys</li> <li>- female donkeys</li> </ul> </li> <li>• Manure</li> <li>• Milk?</li> <li>• Increase in numbers (depending on conditions, for each female say 10 foals)</li> <li>• Selling price:               <ul style="list-style-type: none"> <li>- live animal</li> <li>- meat</li> <li>- skin</li> <li>- bones</li> </ul> </li> </ul>

Where there is no prejudice against it. In any case, pet food suppliers will buy donkey meat, and here, too, it is worth knowing where the local market is.

The main matter of concern here is how the animal dies or is killed. All countries have regulations. Local conditions and markets will naturally determine costs and prices, but the arguments here at least enable one to compile a list with which to work (Table 1).

In our region, donkeys are too often being seen simply as an animal to help with cultivation - but in other parts of Africa and the world the donkey has traditionally been a transport animal (Fernando, 1997; Gebreab *et al.*, 1997; Starkey and Starkey, 1997), and it is in that role that it has proved its worth, stories being told of rich transporters, now with lorries, that started with donkeys. It has been argued, convincingly, that donkeys should be seen as an adjunct to mechanical systems powered by fossil fuels (Starkey, 1995), i.e. doing the short-haul, slow-speed jobs which are uneconomical for engines. But it must be borne in mind that, unless these jobs are numerous enough, the return on them may not be

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governing this, designed to prevent cruelty to the animals themselves, and also the spread of disease.

## Balancing the equation

sufficient to justify the non-reducible costs of animal care. By and large, the costs of both animals and machines are related to their lifespan, which in the case of animals is little affected by the amount of work they do, but in the case of machines has a direct relationship to work. This is a crucial reason for not regarding animals as machines: the longer they live and the more work they do, the more economical they become. A realistic view of the value of this work - which is also closely connected with the value of the work of another animal, i.e. the human - is a prerequisite in calculating the value of donkeys, and ensuring that they give the proper return for cost. Not by overworking them and thus reducing their efficiency, or by being so uncaring as to reduce their life-span, but by ensuring maximum health and ability to work, since work is their most valuable contribution.