

Donkeys and development: socio-economic issues in the use and management of donkeys

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Abstract

The paper provides an overview of the consequences of 'development' for donkey use and management. It argues that the prevailing 'development' model of economic growth and modernisation marginalises large numbers of people. It tries to show how the use of donkeys has enabled these people to withstand some of the threats to their lives and livelihoods. Even though donkeys have been extensively used by people in many areas in the world, their use has been synonymous with backwardness, underdevelopment and low status. This is apparent both in traditional attitudes towards donkeys and in the institutional neglect of donkey issues. Changes in agriculture and transport have favoured tractorisation and motorisation. Most small farmers can afford neither tractors nor motorised transport. So small farmers, transporters and women are increasingly using donkeys for cultivation, for transport and for income-generation. The paper provides several examples of how these different uses ensure the survival of women and men in hostile environments and enables them to integrate into the social and economic processes from which they are often excluded. It concludes that development professionals must recognise donkey use and management as an appropriate and affordable technology for people with minimal resources.

Introduction

Donkeys are said to have originated in north-east Africa and then spread to other parts of the world. The world donkey population is 44 million; half is found in Asia, just over one quarter in Africa and the rest mainly in Latin America (Starkey and Starkey, 1997). Humans have used donkeys for work for thousands of years. There are pictures of donkeys in the tombs of the Egyptian pharaohs and 82 biblical references to donkeys. The ancient Romans used donkeys for pack transport and agriculture. Early documents record the use of donkeys in Ethiopia. Mules, derived from donkeys, were important in military campaigns from about 2000 BC until, and including the first world war (Starkey, 1995a). There has also been a long tradition of use of donkeys as pack animals among pastoralists in East and West Africa.

Development

The socio-economic issues of using and managing donkeys must be considered within the wider social, economic and political changes that are taking place within communities where donkeys exist. Many of these changes have been induced by what has come to be accepted as 'development'. The word 'development' is being increasingly used to describe a process that assumes that the United States and other industrialised nations are at the top of the social evolutionary scale. It has given rise to a model of economic and social development that is being adopted by almost every country in the world (Sachs, 1992). The model assumes that economic growth makes people better off and that poverty can be gradually reduced as incomes circulate from richer areas to poorer ones. In the South (the Third World) as in the industrialised North before it, free trade and growth will lead to 'modernisation'- the increasing productivity of agriculture, the movement of people into towns and cities and the transformation from traditional to modern cultures.

In some countries, for some people, the implementation of this developmental model has been successful. In several countries of the South, economic growth has helped to improve education levels, health care and social provision. But there are large numbers of people that have not benefited from its implementation. What has become increasingly obvious as 'development' is pursued by governments and multilateral and bilateral agencies is that economic growth does not eliminate poverty. It can even be said that the existing processes of development cause poverty, even as they generate wealth. For a large number of women and men in the Third World the processes of development have made the

meeting of basic needs more difficult than before.

Despite their low status and sometimes because of it, donkeys have played an important role in the lives of people who have been marginalised by wider development policies and practice. In most societies donkeys have been associated with poverty and low status. People of wealth have used larger animals, such as oxen, horses, and camels for transport. Jesus' riding into Jerusalem on a donkey symbolised humility and poverty. Cattle represent wealth and in many societies 'owning cattle' denotes social status. But ownership of donkeys has seldom brought social advantage (Starkey, 1995a). In more recent times 'development projects' have sought to promote the use of donkeys. These projects have recognised the value of donkeys in enabling poor farmers and their families to survive some of the consequences of 'development'.

This paper will provide an overview of the consequences of 'development' for donkey use and management. It will attempt to show how the use of donkeys has enabled people to withstand some of the threats that 'development' has had on their lives and livelihoods.

Traditional knowledge

In the thousands of years that donkeys have been used by humans, different historical processes have influenced their spread to different countries and societies. These processes are continuing today. One of the consequences of the development process has been to reduce the 'validity' of traditional knowledge and indigenous forms of livelihood. What was not 'modern' was considered 'backward' and 'underdeveloped'. Little information on the traditional practices relating to donkeys has been considered worth documenting and much of it could be lost.

Historically, the main use of donkeys has been for transport. In the circum-Saharan regions and parts of East Africa, there is a long tradition of their use as pack animals by pastoralists and by traders (Starkey, 1994). For many years, in the Andean regions of Bolivia, donkeys (together with horses and llamas) provided the only alternative to headloading, backpacking and walking (Dijkman and Sims, 1997). In some Saharan and Sahelian countries they have also been used to draw-up water or to carry it in leather bags or in containers held in traditional panniers (Starkey, 1994).

The traditional users of donkeys possess knowledge about their utilisation and management. A recent study (Mutharia, 1995a/b) tells us that Maasai women in Kenya have noted that when a child has pneumonia or a severe cough it is given donkey's milk that is still warm. Donkey milk is also drunk to prevent disease. The milk is only used by children. Also, to prevent a child from getting a cold, Maasai women cut off the edge of a young donkey's ear and tie it round the child's neck. The Maasai women also have different traditional equipment that they use with donkeys for fetching water, carrying household goods and carrying sick calves (Mutharia, 1995a/b).

Beliefs and myths

Traditional communities also have certain beliefs relating to donkeys. Maasai believe for instance, that donkeys must be exchanged, not sold, because selling a donkey for money will bring misfortune to the seller (Mutharia, 1995). Local sayings reflect local communities' attitudes towards donkeys. In South Africa, the longevity of donkeys is celebrated in a local saying that states that if a donkey is presented at a wedding the grandchildren will see it. But very often, sayings about donkeys reflect negative attitudes. In Ethiopia, where donkeys are well known for their multi-purpose use only a few sayings were recorded that encouraged donkey use and management (Bekele, 1997). In Swahili there is a saying that donkeys reward you with a kick.

Sometimes, the myths associated with donkeys prevent their use. In the Kibwezi and Ikanga regions of Kenya there are several myths about donkeys held by people who have little experience of using them. They believe that donkeys attack women during their menstrual period; that overworking a donkey in a field will make the donkey cry and if a donkey cries in a field the crop will fail; that donkeys are stubborn and difficult to train; that donkeys die instantly from a bee-sting or the bite of a tsetse fly and that donkeys are difficult to feed because they want to eat all the time. Farmers who had experience of using donkeys dispelled all these myths (Croxtton, 1993). In Tanga, donkeys, elsewhere considered as gentle, if stubborn animals, were dismissed by farmers with no experience of them as "animals that kick and bite" (Starkey and Grimm, 1994). In South Africa, the perpetuation of myths about donkeys by the 'formal' agricultural institutions provided the justification for systematic destruction of donkeys despite the fact that they were a cheap, affordable and sustainable power source for rural communities (Starkey, 1995a).

Institutional neglect

The devaluation of donkey power by the process of modernisation has had other consequences. In South Africa in the nineteenth century, donkeys were important in agriculture, transport and mining. At the beginning of this century, there were about one million donkeys and mules at work in the country. With tractorisation and motorisation donkeys became less and less used in mining, large scale farming and long distance transport. This led not just to a dramatic decline in the

donkey population, but also to their disappearance from 'official' documents and training and educational material. Articles about donkeys no longer appeared in farming journals and they were no longer considered farm animals in agricultural syllabuses (Starkey, 1995a).

Despite the fact that donkeys play a significant role in the farming systems and livelihoods of a large number of small farmers in South Africa (and elsewhere), research and development into donkey use and management has been minimal. This is borne out by several people writing about or working on promoting the use of donkeys. Croxton notes that the Divisional Veterinary Officer in Kibwezi, Kenya, "confirmed that there is only limited amount of 'formal' knowledge on donkeys" (Croxton, 1993). In Zambia, Bwalya says that there is little extension information on donkeys and that staff do not know the diseases of donkeys. He attributes this neglect to government preference for other types of livestock (Bwalya, personal communication). There are no international research institutions working on donkeys. The International Livestock Research Institute (ILRI) based in Addis Abeba and Nairobi, is extremely reluctant to direct their funds and expertise to research on donkeys even though donkeys often support the other livestock systems with which they work. In effect, 'development' and 'development institutions' have marginalised an extremely valuable resource of small scale farmers and transporters.

Donkey owners

The numbers of donkeys are growing in the developing countries of Africa, in the north of the Indian sub-continent and the tropical highlands of Latin America. They are declining dramatically in the industrialised countries of Europe and North America. These trends could be said to reflect the insignificance of donkey ownership and use in 'developed' countries. However, donkey populations have not declined in rapidly 'modernising' countries such as Brazil, China, India, Mexico and Pakistan. This shows that within these countries there are still large rural populations that do not have access to the modern technology, and continue to benefit from using donkeys (Starkey and Starkey, 1997).

In areas where donkeys are used, they are owned by many smallholder farming households, by pastoralists and by micro-entrepreneurs in the transport sector. They are no longer prevalent among large scale commercial farmers or in commercial operations such as mining. Neither are donkey owners the 'poorest of the poor'. The poorest members of most communities cannot afford donkeys.

In Botswana, small-scale farmers own 99.4 per cent of the donkey population (Aganga, Tsopito and Seabo, 1994). A study of six villages in the Diourbel region in the groundnut basin of Senegal, showed that almost every household (except the very poorest) owned a horse and a donkey, even though few owned cattle (David and Niang, 1995). A survey of Kebkabeiya Rural Council area situated in the south-west of Northern Darfur State in Sudan showed that 78% of the farming households owned donkeys and 50% owned more than one donkey. Those who didn't own donkeys were either elderly, disabled or otherwise dependent (Abu Sin and Hadra, 1994).

Donkey owners are usually those who use donkeys in pursuit of their livelihoods. In Limuru, Kenya, donkey ownership is high among farming households and low among those whose main source of income is business or formal sector employment (Njenga, 1993). In areas where non-farm employment is becoming a critical factor in the economies of rural households, donkeys are often owned for providing transport services. This is true in areas of Ethiopia (Marshall, Ali and Tefera, 1997) and in the Sudan (Abdelgadir, 1996).

In Limuru, as well as in Matamba in the Makete District of Tanzania, donkey-owning households typically had bigger fields (Njenga, 1993; Sieber, 1997). It is hard to say whether donkey ownership stimulates greater economic well-being or whether the transport demand resulting from the larger land ownership results in greater donkey ownership.

Reasons for ownership

One of the major reasons why small farmers have access to donkeys is that in most countries donkeys are cheaper than work oxen. In the Gambia in 1987, a donkey could be bought for US\$15-25 while oxen cost US\$100-170 (Starkey, 1987). Aganga and Maphorisa (1994) reported that in Botswana, the price of a donkey (US\$50) was one eighth the price of an ox (US\$400).

The low price of donkeys is in most part related to the fact that they are not perceived as multi-use animals. Cattle, buffaloes and camels are usually kept for their milk and their meat as well as for work. In many areas donkeys are not sold for their meat. Donkeys are also not usually considered in the payment of bride price. The lower cost of donkeys makes them more affordable to small farmers.

It should be noted that the low regard for donkey meat is not a universal rule. One of many exceptions is Lesotho where donkeys are culled for meat when they are considered too old to work. Donkeys are relatively expensive in Lesotho (Moorosi, personal communication).

Price is however not the only determining factor for the increased use of donkeys in farming. The farmers of Kibwezi

and Ikanga gave the following reasons for preferring donkeys over oxen. They said that donkeys are stronger than an ox of similar size; that it is possible to plow with a single donkey; that donkeys work faster than oxen and are easier to train; that donkeys are hardier than oxen in that they tolerate drought better, are less susceptible to disease and are in good condition at the end of the dry season and do not need supplementary feeding before they begin plowing (Croxtton, 1993). The perception of donkeys as hardy animals is fairly widespread. But even in the Gambia, where donkey mortality rates were high, farmers invested in donkeys because they were easily obtained from traders who imported them from Senegal. Gambian farmers valued the fact that they could (unlike oxen) be worked by one person (Starkey, 1987). The low value of donkeys also makes the donkey less susceptible to theft. Another reason for donkey ownership is that they can also be more easily used by women.

Hiring and sharing donkeys

People who do not own donkeys have access to them through different local sharing or hiring relationships. In Limuru, Kenya, 43% of the households own donkeys and an additional 20% of households use them (Njenga, 1993). People without donkeys in most rural communities in Botswana can hire them for about \$ 15-20 for a distance of 12 km (Aganga et al, 1994). In one community in Ethiopia where donkeys are used daily for hauling water from a distant source, members of the community who do not own donkeys borrow animals from neighbours to transport water. The water is then shared for no cost or repayment. The community considers it not possible to charge a neighbour for something as basic as fetching water. The use of donkeys in this community is a part of the social network (Marshall et al, 1997).

Sharing arrangements may not always be equal, however. Greater bargaining power deriving from ownership of animals and/or implements means that owners have the advantage of using the animals at the optimum time.

Diffusion of donkey ownership and use

Changes in the distribution of national donkey populations point to the existence of a natural dissemination of donkey use in response to changing socio-economic conditions.

In the northern areas of the Sahel region of West Africa, donkeys have been important transport animals for many years and have been used for riding and/or for carrying a wide range of goods. Lightweight carts for use of donkeys and horses were introduced many years ago. The popularity of the carts combined with traditional riding and pack uses have allowed the donkey to have a great importance in facilitating trade within local economies. As the importance of donkeys increased, and agro-ecological conditions changed, they slowly spread southwards (Starkey, 1994). Though the official estimates of donkeys in the countries in this region have remained constant, field observations suggest that the donkey populations in the drier regions are increasing in size and expanding in geographical area (Starkey and Starkey, 1997).

In Limuru, Kenya, the symbiotic relationship between the Kikuyus and the pastoralist Maasai may have been a factor that led to the diffusion of donkeys as a means of transport. The most preferred source of access to donkeys in Limuru is from the neighbouring pastoral community. However unlike in Maasai land where donkeys are primarily used as pack animals, the Kikuyu people use donkeys for drawing carts. The Kikuyu peoples' use of cart technology could be influenced by their commercially oriented lifestyle that requires transporting greater volumes and the importance of water transport in their livelihoods (Njenga, 1993).

In the Gambia, use of donkeys spread largely due to the ease by which they could be obtained from traders from Senegal (Starkey, 1987). Farmers in northern Namibia have accessed donkeys from areas where donkeys are bred, often walking long distances with their animals (Starkey, 1992). In some areas donkeys are accessible through development projects promoting their use. In contrast to the spontaneous diffusion of donkeys through local trading, donkeys supplied through these projects are relatively expensive (Bwalya, 1997).

Changes in livelihoods

The impact that development processes have had on peoples' livelihoods varies between different social groups within countries and between countries and regions. The process has not been equal. Mostly it has favoured those with more resources. Rising per capita incomes of some countries has been accompanied by an increase in the numbers of the poor and a drastic fall in their living standards. The existence of donkeys among smallholder farming households and other groups of poor people has provided them with opportunities to continue with their productive activities, and to increase their cash incomes.

Changes in agriculture

A majority of the people in countries in the Third World earn their living from agriculture. Traditional agricultural practices in most parts of the world have undergone dramatic change. The change has been a result of a variety of factors. In some countries land alienation for commercial farming or export oriented agriculture has marginalised the

small-scale farming sector onto lands with low productive potential. Often this situation has been made worse by population pressures. Recurrent droughts and the loss of common grazing land have led to changes in livestock farming systems. Poorer farmers are finding it increasingly difficult to maintain their herds of larger animals. Pastoral economies are also coming under increasing pressure from both agricultural encroachment and development policies that encourage sedentarisation and the privatisation of land. Traditional land management strategies such as the control of livestock movements and seasonal grazing areas are being undermined.

The focus on increased productivity in agriculture promoted the wider use of tractors and other motorised equipment. In most countries, they were out of the reach of the smallholder farming sector and were not adopted unless heavily subsidised by the state. In many areas, tractorisation was viable only at the expense of the small farmers who gradually lost their lands to those who had the resources to expand their holdings to make efficient use of tractors.

These changing patterns of agricultural and livestock production have implications for donkey use and management. Small farmers, particularly in the dry and arid areas of Africa, are using donkeys to mitigate the negative effects of changes in agricultural production. The use of animal traction has enabled farmers to expand their areas of cultivation and contributed to the timeliness of their agricultural operations. While most small farmers would prefer to use oxen (or even tractors) for draft, they often cannot afford to, and donkeys become their most viable alternative. In many drought prone areas farmers started to use donkeys because their oxen died and they were unable to replace them for one reason or another (Croxtton, 1993; Starkey, 1995b)

Migration of men to commercial farms or to towns has resulted in a shortage of labour on many small farms, creating greater responsibilities for women. The number of female-headed households in many countries in Africa and Asia is increasing. (This is also due to war and conflict.) The use of donkeys for draft has been particularly significant for women farmers. Women often find donkeys easier to use than oxen and for many women-headed households, donkeys are usually more affordable. In many countries, handling an ox is traditionally considered a male activity. A woman needs to get a man to do her plowing for her, even if she does own an ox, and this often costs her a disproportionate amount of her harvest. These traditional beliefs are not often applicable to donkeys. For women, donkeys are often multi-purpose animals, since they can be used for other activities such as water and firewood collection and transporting maize to the grinding mill and for generating income through provision of transport services (Sylwander, 1994; Bwalya, 1997; Marshall et al, 1997).

Changes in transport

As much as tractors are seen to 'modernise' farming, roads and highways and motorised transport are seen as the indicators of the development of transport. In the last few decades governments and development agencies have invested billions of dollars in transport infrastructure. But, for many people in the Third World, investments in roads did not end their isolation or reduce their transport burden because many communities in the world are not part of the road network and because many people cannot afford motorised transport. More importantly, studies have shown that most of the transport activities of rural households take place within the community and are related to subsistence tasks such as the collection of firewood and water and transport to and from the fields (Dawson and Barwell, 1993).

The use of donkeys for transport in Africa dates back to historic times. This is in contrast to the situation in many African farming systems, where farmers have only recently started to use donkeys because of changes in land-use patterns, agro-ecological conditions and labour availability. Packing is one of the most ancient forms of transport that preceded even the invention of the wheel. That it has survived to the present day emphasises its value (Fielding, 1988). The use of donkeys as pack animals or for pulling a cart has enabled small-scale farmers to participate in the market economy. Donkeys have reduced the domestic transport burden of rural women and have created employment and income-generating opportunities for many people.

The Maasai community in Kenya uses donkeys for fetching water, for household shifting (during migration), for carrying the sick to hospital, for carrying sick calves, for transporting shopping and for pulling fencing materials needed for constructing bomas (Mutharia, 1995a/b). In Botswana, donkeys are used for transporting people and goods, for transporting sand for building houses and for fetching water and firewood (Aganga et al, 1994). In the remoter, mountainous areas of Lesotho donkeys are important for transporting grain to the mills (Morosi, personal communication). In Ethiopia, donkeys are a major mode of transport. They transport at least 12 different commodities including food to remote areas during war and peace as well as guns and ammunition during war. Some rural Ethiopians recall that in famines of the past they only survived by someone bringing in food on donkeys (Marshall et al, 1997). Donkeys are also used in densely populated city areas. In Egypt they are used by the Zabbalin rubbish collectors in Cairo and other cities (Fahmy, 1997).

Donkey transport is also used in agricultural production, mainly to transport manure to the fields and the harvest from the fields to the homestead and to the market. These transport functions are becoming critical as land is more intensively cultivated and families begin to depend on income from marketing cash crops. In most countries, governments are dismantling state marketing systems, and the onus is on the producer to reach the market. Availability of transport options enables small producers to jump a step or two in the marketing chain and therefore retain a larger proportion of the profits.

A study of the economic effects of the Makete Integrated Rural Transport Project in Tanzania concluded that the use of donkeys had enabled farmers to transport larger harvests from the fields to the market. It also showed that farmers with donkeys were able to use more fertiliser, because it could be transported easily from the market place to the homestead, and from the homestead to the fields (Sieber, 1997).

The study of the use of donkeys in Limuru, Kenya, indicated that the use of donkey carts is an essential component of the farming system. The Limuru area is a highly productive agricultural area and the agricultural systems practised by the farmers require a great deal of water - 70 litres per day for household consumption, 200 litres per day for cattle and 225 litres per day for poultry. Most (63%) households in Limuru depend on donkey carts for the transport of water. Donkey carts are also used by 60% of the households for marketing maize and potatoes which are sold in local markets and by over 50% of the households for the marketing of carrots which are sold in more distant markets. During the dry seasons, farm animal food is scarce and the owners of livestock have to move from place to place to find it. In such periods, ownership of private means of transport enables the livestock farmer to move longer distances to carry the available food in reasonable amounts. Apart from this, donkey transport plays an important role in transporting industrially processed poultry food (Njenga, 1993).

Hiring donkeys and donkey carts can be a good source of income. In Niger in 1990, ox and donkey carts became very popular because hiring them out became a good source of income (Kruit, 1992). In Omdurman city in Sudan, farmers and pastoralists who migrated to the city because of drought and famine in Western Sudan were unable to start new and different jobs. They used their expertise in using donkey-drawn carts to become water vendors and transporters of people and goods. Owning and operating donkey carts is a good and profitable career and daily incomes are often higher than the average formal sector wage. Many of these donkey cart owners and operators support big families living in the villages (Abdelgadir, 1996).

In Ethiopia after the war, many ex-soldiers started lucrative businesses in the transport sector using donkey carts (Marshall et al, 1997). In a large-scale resettlement project in Eritrea, the number of donkeys provided by the project was increased by up to 7.3 times the original number in the project plan in response to the demand. The high demand among both male- and female-headed households was explained by the importance attributed to donkeys as a means of carrying water and firewood and the possibility of hiring out a donkey to other people (Catley and Blakeway, 1997).

Gender issues

The gender issues in the use and management of donkeys are dependent on the roles and responsibilities that women and men have in the different communities where donkeys are used. These roles and responsibilities are not static and change with time.

Typically, roles and responsibilities can be divided into three categories. Child-bearing and rearing responsibilities and domestic tasks relating to the maintenance of the household (cooking, fetching water, collecting firewood) are referred to as *reproductive roles*. In most societies these are the responsibilities allocated to women. Women and men also carry out *productive roles*, producing food or cash crops, working in the formal or informal sector. There are also *community-related* roles. These relate to management of collective community resources (usually the responsibility of women) and the participation in formal community politics (usually men).

Gender is also about power relationships. These power relationships are rarely equal and in most societies they reflect male dominance and female subordination. This is supported by differential access to resources. At a practical level, women and men need resources to carry out their gender-allocated responsibilities. At a more strategic level, gender needs include legal rights, ownership and wages. Meeting strategic gender needs implies achieving greater equality between women and men.

The gender differences in the ownership and access to use of donkeys vary according to the different social arrangements prevailing in different cultures. The low status of donkeys has designated them as animals to be used by women. In most societies they have none of the 'masculine' characteristics associated with wealth and status. Though ownership of donkeys by women is not uncommon, in many societies they are owned and controlled by men. Among the Maasai for instance, though women have access to the use of donkeys, a woman cannot sell a donkey without a man's permission (Mutharia, 1995). Studies of several communities in the Sahel countries, show that the ownership of donkeys is almost entirely by men. In El Ain in Sudan, women and men ride donkeys but it is extremely rare for women to own one. In Diourbel, Senegal, men do the buying and selling of animals for women and are the owners of donkeys and other large animals such as horses, oxen and cattle. Among the Dogon people of south-eastern Mali, a woman may own female donkeys, but the management of livestock is nearly always in the hands of her husband. Though a Dogon man will say that women owners have full rights over what happens to their livestock, the situation is frequently ambiguous (SOS, 1995).

The gender differences in the use of donkeys, and in the benefits accruing from this use, stems from the fact that in most

societies women and men carry out different tasks in agricultural production, cultivate different crops and different fields. A woman's transport burden derives primarily from her reproductive or domestic responsibilities whereas a man's transport burden is related to his productive role.

Where agricultural operations are carried out by hand and where head loading, backloading and walking are the main means of transport, the use of animal traction has had different impacts on women and men. The use of animal traction has enabled smallholder farmers to expand their areas of cultivation and to increase the quantity of their harvests. Weeding, harvesting and crop processing tend to be women's tasks and the increase in areas cultivated increase the burden of these tasks on women. On the other hand, where work animals are used for plowing and weeding, men can sometimes take on the tasks of weeding and also use their animals to plow women's land (Starkey, 1992; Sylwander, 1994). The plowing of women's plots may rarely receive priority and is often carried out after the work on men's lands and communal land is completed which may not always contribute to the timeliness of the operation. Women's restricted access to livestock in general, and donkeys and donkey carts in particular, also limits their access to manure and makes it difficult for them to transport whatever manure they may collect (usually household waste and compound sweepings) to their fields (David and Yabré, 1995). In areas where women have been the main transporters of goods between regional towns and isolated villages, the development of roads suitable for carts and motor vehicles has meant that women can no longer compete with marketeers (usually men) with transport facilities and capital to monopolise large shares of the market. In the absence of women's access to animal-drawn carts, their trading is now restricted to the village itself (Ruthven and Koné, 1995).

In many countries, reduction in male populations through male out-migration or as a result of war and conflict, has left women as the majority of the stable active work force in rural areas. In many areas, the numbers of female headed-households is significant. In some areas of Ethiopia, the number of female-headed households is as high as 30-40% (Marshall et al, 1997). In the Kebkabeiya region of Sudan, women comprise 40% of the farmers (Abu Sin and Hadra, 1994). The shortage of male labour means that women have greater pressures on their time as they take on additional farming responsibilities in addition to carrying out their own food production activities and domestic tasks. Domestic tasks, particularly the transport of water and firewood consume a great deal of women's time and energy. Community level transport studies carried out in Tanzania and Ghana indicate that transport of water comprises a quarter or more of the total transport burden (in terms of tonnes-km) and 50% of the time of a rural household (Dawson and Barwell, 1993). In the villages of Kweneng and Kgatleng Districts in Botswana, women typically travel 5 km to fetch firewood for domestic use (Mrema, 1995).

The use of donkeys in plowing, weeding and for transport can help women with these responsibilities. In the predominantly cattle-keeping area of Western Zambia, women farmers and female heads of households have embraced the use of donkeys. In this area, most of the donkeys are owned by women who use them for work on the fields and to carry out most household chores (Bwalya, 1997). In Ethiopia, donkeys are commonly used to assist women in fetching water and firewood. Even in areas where priority use of animal power is for economic activity, there is a much greater likelihood of donkeys being used to lessen the transport burden for women, than oxen. A comparison of two Maasai women, one using a donkey to fetch water and the other carrying it herself indicated that the use of donkeys could save up to about 25 hours per week for other activities. The women saw this time saved as valuable for carrying out other tasks, for rest and leisure and for more involvement in community work (Fernando and Keter, 1996).

The absence of men does not necessarily imply a change in the gender status quo. In some societies, male tasks are taken over by the extended family. Where women do not have an extended family to support them they do not always take on traditional male activities but look to other activities such as trading, to cope with subsistence. In Northern Ethiopia, ownership of donkeys still poses women with a problem of cultivating their fields (because plowing is a male activity and only done with oxen). But female heads of households were especially articulate in their analysis of the importance of donkeys because use of donkeys could provide them with income generating opportunities that would enable them to make as much money as men and diversify their risk by securing an alternative, off-farm income (Marshall et al, 1997).

Lack of assets or the right to dispose of them, restricts women's ability to purchase donkeys and/or equipment. In the Kweneng and Kgatleng Districts of Botswana, where ownership of donkeys by women is high, many women cannot afford to purchase the equipment needed for field operations or the carts for transport (Mrema, 1995). Access to alternative credit arrangements can facilitate women's use of animals, carts and equipment. In the Tanga area in Tanzania, a labour-intensive road construction programme contracted farmers to bring gravel to surface the roads. The income they acquired from this activity enabled them to repay loans for the purchase of donkey carts (Starkey and Grimm, 1994).

Intermediate Technology's West Kenya Rural Transport programme working with Future Forest, a local NGO, used an already existing 'merry-go-round' savings and credit scheme to enable a women's group to acquire donkeys. Eighteen members of the group divided themselves into smaller groups of three. When each of the smaller groups had saved half of the cost of a donkey, Future Forest provided the balance money as a loan and the women purchased a donkey. The members then began repayment. Three women collectively own a donkey and use it for collecting water and for other transport tasks. The frequency of trips has not changed, but the women benefit from a reduction in the burden of head loading and from the ability to collect twice as much water. They see the donkeys as giving them the potential to generate income through hiring to other women and men, through petty trading of grains and through the transportation

of sand. They are also able transport soda ash for barter with food items, increasing their food security (Fernando and Keter, 1996).

The use of donkeys enables women to meet several of their practical gender needs, particularly their need for transport. The gender inequalities that restrict women's ability to make use of existing systems of trade to access donkeys, carts and equipment can be overcome by alternative credit arrangements. Access to donkeys can also bring greater economic benefit to women, improve their status and change power relationships.

The Kebkabeiya Small Holders' Project in Darfur in the west of Sudan promoted the use of donkeys for draft power. Donkeys were chosen as draft animals because nearly all the households in the area owned at least one donkey. The project identified two plow designs that were sold to farmers and for which there was a high demand. A survey conducted during the third year of the project indicated that the plows were being used predominantly by men even though 40% of the farmers in the area were women. The project modified its extension and training strategy to target women farmers. Two years after this strategy was implemented (in 1994) an evaluation indicated that women's adoption of the plow was still slow, but that "women's culture of silence was broken and the women started to raise their voices and claim equal access and use of project resources". Some of the benefits of the project were identified as moral support and recognition within the household and the community, recognition in society and better treatment by men. Women using the plow found the time saved valuable, in that they could devote more time to child care. They were also able to cultivate cash crops and increase their incomes, creating a sense of family stability despite male out-migration. Some women used the time saved to take literacy classes and to become more involved in public and community affairs. All these benefits reflect a change in gender power relationships and the status of women within the Kebkabeiya community (Abu Sin and Hadra, 1994).

Summary and conclusions

Donkeys have not been considered a significant component of the development process. For many of the institutions promoting 'development', the use of donkeys has been considered an indicator of backwardness and underdevelopment. Traditional attitudes to donkeys have also been quite negative and in some instances have inhibited the spread of donkey use. This attitude has led to a loss in the traditional knowledge relating to donkeys and to a lack of investment in the research and development of donkey issues. Field observations however indicate that this may be changing. In parts of Ethiopia, farmers observed that in periods of significant food insecurity, donkeys were more important than oxen. In one area, people are now even considering donkeys as appropriate for bride price (Marshall et al, 1997).

Donkeys are owned and used by large numbers of people engaged in small scale agriculture, by small-scale transporters and, in some areas, by women. Ownership and access is made possible by the relatively low value of donkeys and by their perceived low status. Increasing recognition of the importance of donkeys (particularly their ability to withstand drought and their role in transport) is resulting in a spontaneous diffusion of donkeys to 'new' areas. In many communities households without donkeys are able to access them through sharing and hiring arrangements.

Donkeys are used in a variety of activities. Smallholder farmers use donkeys to cultivate their land, coping with labour shortages and loss of other livestock due to drought. By using donkeys in agriculture and transport, farmers have increased their productive potential and expanded their marketing options. Donkeys have also provided employment for many people who hire out donkeys or use donkey carts on a commercial basis for a transport service.

The use of donkeys has enabled women to overcome the cultural barriers to the use of work animals and to mitigate some of the additional burdens that extensification of cultivation and shortages of labour have imposed on them. In most societies where donkeys are easily accessed by women they find it easier to work with them and have benefited from their use in farming, and in relieving women's domestic transport burden. The use of donkeys has also helped women make use of new income-generating opportunities and contributed towards changing gender power relations. Gender inequalities that restrict women's ability to make use of existing systems of trade to acquire donkeys, carts and equipment can be overcome by alternative credit arrangements.

The above discussion indicates that donkeys have been made 'invisible' by the formal institutions of development. However, women and men marginalised by the development process are using donkeys as a resource to ensure their survival in a hostile environment. In some cases donkeys allow disadvantaged people to re-establish links with the social and economic processes from which they have been excluded.

The main objective of development must be the improvement of the lives and living standards of the people who comprise society. This must be the alternative to the model that puts economic growth and 'modernisation' of nations as its goal. For development professionals subscribing to this alternative, the challenge is to recognise donkey use and management as an appropriate and affordable technology for people with minimal resources.

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