

# Animal traction in South Africa: the present situation

*Selected field visit observations reported by*

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## Introduction

In the following pages, some of the information obtained during the survey field visits will be presented. The aim is to summarise some of the interesting information gathered in the different geographical areas of South Africa, with emphasis on the areas where smallholder farming is important. Rather than follow the actual itinerary of the survey (which was affected by logistical factors), the information has been presented province by province, starting in the very north of the country (Northern Transvaal) and passing generally southward (Eastern Transvaal, Gauteng, North-West, Orange Free State, KwaZulu-Natal) to the Cape Provinces (Eastern, Western and Northern).

In each province, some of the observations made by officials and farmers will be reported, together with some general statistics and information on relevant organisation and literature. It would be impractical to report fully on all meetings, and so the observations are inevitably selective. They are intended to provide a balanced impression of the key issues discussed. They are generally presented in such a way that people familiar with rapid appraisal surveys may well be able to imagine what took place. There is inevitably some repetition, as farmers (and officials) often referred to similar constraints and trends to those cited in other areas.

No attempt has been made to quantify the responses for the survey was neither stratified nor randomised, and was based on 'open-ended' rather than 'fixed-response' questions. This

allowed the farmers and survey team to spend more time on those issues and trends that the farmers perceived as important. In some areas animal issues predominated, in others equipment or tractors were of major concern and elsewhere socio-economic topics were of greatest importance (although in all areas, all three 'focus areas' were discussed).

The names of individual farmers and officials have been omitted, but a complete list of all informants, giving the positions of officials and the villages of farmers, is provided at the end of this volume. The survey was undertaken during a period of political change and transition, and some geographical and administrative areas have changed in name or boundaries since the field visits. All names, whether current or 'historic', are used here merely for convenience in identifying the relevant area.

Numbers and percentages quoted are merely intended to help give 'order of magnitude' estimates for the use of animal traction and the costs involved. None should be taken as definitive. Occasionally the figures are conflicting (eg, KaNgwane Department of Agriculture officials put the use of animal power at '2% or less' while farmers suggested figures of 40-60%; the survey team found the farmers' estimates more realistic, but both

*Listening to farmers during the survey in  
Eastern Cape Province (Ciskei)*



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*Listening to the experiences of farmers meeting on a farm in North-West Province (Bophuthatswana)*

figures are reported here). Estimates given by farmers in morgen or plots have been presented as approximate hectare equivalents. Some variation in tractor hire figures appear to be due to local rules, their interpretation and whether charges were per hour, per hectare or per plot. While no individual figures quoted are considered to be authoritative, the members of the survey team feel they have built up a clear picture from the many visits, which justify the 'order-of-magnitude' estimates made in the initial overview. The overall national picture has already been presented in the overview. The following sections therefore present some more

*Survey team members with Department of Agriculture officials listening to a farmer in Northern Transvaal (Venda)*



detailed background information, which provided much of the basis for the conclusions of the team.

The format and style of the following sections does vary to a certain extent. This is because they have been compiled from the written contributions of five different authors, and because the format of meetings and field visits varied between the different areas. However, it is hoped that these variations will not detract from the objective of providing a coherent geographical overview of the many observations made during the survey.

Due to limits of space and time, the details of many fascinating interviews have had to be omitted or compressed into one or two sentences. The authors apologise to all the people who provided information that has not been reported here in depth, and hope that such contributions can be included in more detailed, area-specific follow-up studies.

This chapter is illustrated by photographs taken during the survey. The photographs reflect the fact that transport was the major animal-powered operation being undertaken in the areas visited during the months of the survey (April to July). Donkeys and horses were the main transport animals being used. The lack of photographs of planting and weeding and the relative under-representation of oxen were due to the time of year of the survey and should not be taken as being significant.

# Northern Transvaal

## Venda

### *Geography and overview*

Venda (which was one of the nominally 'independent' territories) is situated in the north-east of South Africa, close to the Limpopo River (the frontier with Zimbabwe) and the Kruger National Park. For many years drought has been a problem, particularly in the north. Venda has an area of 680 000 ha, of which 70 000 ha are classified as having arable potential. The population of 540 000 depends to a large extent on migratory labour and remittances, but agriculture remains important. Population density is high in the south, where pressure on land is greatest, and many communities are 'peri-urban' in economy and outlook.

There are estimated to be about 140 000 cattle. The official estimate of donkeys (5600) appears very low, given the acknowledged importance of donkeys. Cattle used to be widely used for plowing and planting, but the combination of droughts and tractor availability has reduced the number of cattle used for plowing. Some cattle are yoked for planting after tractor plowing. There seems to have been no tradition of using animals for weeding. Donkeys are increasingly used for both plowing and for transport, particularly in the remote rural areas, but carts are not readily available.

### *Authorities*

The survey team met with 13 senior officials of the Ministry of Agriculture in Thohoyandou. Most officials started off by expressing a very negative attitude towards the use of animal traction as they thought this was a step backwards and not forwards. The government was helping farmers in Venda to use tractors. Then, after much discussion, and some observations by a few officials about the benefits of animal power, the meeting became much more positive about the present and future use animal traction.

The veterinary department had been actively discouraging the use of animal traction. They believed that work adversely affects the quality of cattle meat. Also they were proposing the sale of young animals, so there would not be enough time to use animals for work before sale. They also thought that using cattle for animal traction would promote over-stocking.

Farmers had been informed that cattle used for work would fetch a low price (although in practice a heavy ox would always earn more than a light bullock). They considered they had been quite successful in reducing the number of work oxen in recent years, and suggested that nowadays 95% of work animals were donkeys.

The Venda authorities have been encouraging the use of tractors and have run a highly-subsidised tractor scheme. They owned 60-70 tractors and the Venda Development Corporation (VDC) had another 60-70. There were about 200 tractors in private ownership. Government and VDC tractors were said to have plowed 40 000 ha in 1991, giving the relatively high figure of 300 ha per tractor. They charged just R 65 per ha for plowing and R 98 per ha for plowing and planting. Private owners charged R 200-270 per ha. The authorities were going to have a meeting with private owners to agree more 'reasonable prices' (which they took to mean significantly lower private contractor prices). It was clear that tractor use was not economically justified on small plots, and the authorities wished to increase the size of holdings, but there was a shortage of land.

*Six donkeys pulling a four-wheel wagon in Northern Transvaal (Venda)*



In the 1950s, agricultural colleges included information about using oxen and donkey-drawn plows. However this had been stopped in the late 1960s or early 1970s, as part of the pro-mechanisation policy advocated by central government. Thus technicians trained in the past 20 years had never been taught about animal traction.

Two senior officials of the Department of Agriculture participated in some survey visits to farmers. As a result of these, the officials explained to the survey team that their perception about animal traction had changed completely. They had not realised how important work oxen and donkeys were to their people.

#### *Farmers and field visits*

The survey team started at Thohoyandou, and moved north, away from the peri-urban area into the more remote rural areas. In the peri-urban area, a businessman was developing a large-scale commercial farm. He had invested about R 3.5 million (profits from his urban businesses) into a 200 ha commercial farm. Much of the farm was irrigated (for growing tomatoes), but he was restricted in his progress by lack of credit for further development because he could not get title deeds for his land. Although he used tractors on his own land, he did not make a business of hiring them out, believing that it would not be profitable.

Tractors are now used in Venda for much of the plowing. One problem with the tractor schemes is that the people close to the urban areas get the services of tractors most easily, even though they are generally part-time farmers with a job in town. The rural farmers in the remoter areas, who are poorer and for whom cultivation is more important, often cannot obtain tractors. Even if tractors were available farmers could not always afford them.

One farmer reported that people had to use donkeys for plowing in the rural areas, because if they waited for tractors, it would be too late. Donkeys are being used more and more because the people say that they are drought resistant, they do not need veterinary inoculation or treatment and they are very easy to handle, even by women and children. Farmers contacted appeared very concerned about their donkeys and their well-being. Although there were no reports of formal donkey reduction schemes in this area, farmers reported a serious shortage of donkeys.

One farmer interviewed owned eight cattle of which three were oxen. He used his oxen in conjunction with those of a friend, and plowed 2 ha of his own land and 3-5 ha for others. Those for whom he plowed helped him with their labour for other operations. He felt the use of oxen for plowing was declining due to drought and lack of cattle. He estimated that 40% of farmers in his area used animals for plowing (mainly donkeys these days) and a further 10-15% used animals for planting after tractor plowing. As it was difficult and expensive to obtain tractors on time, more people were plowing with donkeys. He had six donkeys, which were used for carting his own goods, and for hiring out. He had never heard of people using animals for weeding and had not seen a cultivator himself.

Another farmer interviewed explained that prior to 1958 many people owned cattle, and most people plowed with oxen. Then cattle started to die, due to drought and insufficient grazing. People started to use donkeys, as these could survive better and seldom, if ever, became sick. There was a severe shortage of donkeys in the area. He himself had experienced so many problems of cattle dying that he claimed he would not buy an ox or cow for five Rand, but he was willing to pay up to R 100 for a donkey. He currently owned eight adult donkeys (and two foals) and used them in two teams of four to plow 8-10 ha a year. Six donkeys pulled his (heavy) four-wheel cart. His female donkeys gave a foal every two years. His plow was bought many, many years ago for R 5. He had never heard of use of animals for weeding, but would like to consider this, and a lightweight cart. He did not like the idea of pack transport, thinking it would be cruel to the donkeys. He predicted that donkeys would be increasingly used in Venda in the coming years, if the supply could be improved.

## **Lebowa**

### *Geography and overview*

Lebowa comprised many different areas of land scattered across Northern Transvaal. The total area is large (2.1 million ha), but much is classified as 'grazing' land, with only 350 000 ha considered as 'arable'. The population is estimated at 2.5 million people. There are about 500 000 cattle and the estimated population of equines of 28 000 (mainly donkeys) is second only to that of Transkei.



*Span comprising one bull and three oxen pulling a four-wheel wagon in Northern Transvaal (Lebowa)*

The use of draft animals for work is a long-standing tradition. Cattle used to be the main work animals, and they are still quite widely used, particularly towards the east. However, drought conditions over many years had reduced the use of cattle for work. Theft of cattle has been a major problem, which also discouraged smallholder farmers from using oxen. Donkeys have been increasingly used, and are quite common, particularly in the more remote rural areas. They are widely employed for transport, and to a lesser extent for plowing.

#### ***Authorities***

At the government offices situated in Lebowakgomo, the survey team met senior staff of the Department of Agriculture, including the Director and Deputy Director. These conveyed a generally negative feeling towards animal traction, doubting its future relevance. In particular, donkeys were not considered productive, they merely used valuable cattle feed resources. However, despite undisguised bemusement that the team was spending time looking at animal traction, full logistical support was given to the survey, with staff of the veterinary department arranging meetings and actively participating in the survey.

A subsidised government tractor hire scheme has operated in Lebowa, with over 50 tractors at work, charging R 108/ha. Private owners charge R 120/ha or more. The tractor scheme

had been expensive to operate and was not being continued.

The authorities of Lebowa have for many years tried to keep down the population of donkeys. In the period 1976-79, donkeys were actually banned. For a six-month period farmers could sell them for seven Rand, and any left after this period were confiscated. To this day, any donkeys found on roads are confiscated and sometimes sold to a crocodile farm. However, even during the period of prohibition, farmers in the remoter areas continued to breed and to use donkeys. Although donkeys are discouraged, they are no longer prohibited.

In another attempt to reduce donkey numbers the Salique mule breeding station ('Equidae farm') has been supported. The aim has been to encourage farmers to replace the many small donkeys they owned with a much smaller number of larger, stronger mules. Moreover, as mules did not breed, there would not be the continuing problem of 'surplus' animals that existed with donkeys (as the authorities perceived it). Initially eight donkeys could be swapped for one mule, but the demand for mules was so great that they increased this to 15 donkeys for one mule, at which rate people were not very interested. In any case, the output of the present mule breeding station was very small, compared with the number of donkey-using farmers.



*Eight donkeys pulling a four-wheel wagon in Northern Transvaal (Lebowa)*

### ***Farmers and field visits***

Even in the urban and peri-urban areas near Lebowa, some donkeys were being used for transport. As the survey moved into the rural areas, it was found that more and more donkeys were being used. The donkeys are used mainly to transport water and wood for daily use. In the Lebowa area few cattle are now used. Before the big droughts (and the concentration of population), cattle were widely employed and were the main power source for tillage. Because so many cattle died in the droughts, while the donkeys survived, the tendency was now to use donkeys rather than cattle for animal traction. Another reason is the high rate of cattle theft in Lebowa (donkeys are stolen but to a lesser extent).

Farmers seemed to be very proud of their animals and the donkeys were in quite good condition. Due to the government-arranged donkey reduction schemes (including feeding donkeys to crocodile farms and game parks), there seems to be a shortage of donkeys in the area. This means more drudgery for the people who have to carry wood or water or pay

*Travelling by donkey cart  
in Northern Transvaal (Lebowa)*



someone to do it for them. Tractors (government or private) appear to do much of the plowing in Lebowa, with some use of donkeys and a small number of cattle. In the Bochum area up to 50% of the plowing is done by donkeys or mules.

### *Thabamoopo District*

One woman farmer contacted in Thabamoopo District owned two donkeys which were used daily to collect water (1.5 km) for domestic use and for other people (R 3 per 200 litre drum). They also carried manure and wood and plowed garden plots. The farmer had not heard of animal-drawn weeding implements. Donkeys required virtually no maintenance, for they fed themselves and did not suffer health problems. The farmer predicted the number of donkeys would increase in the coming years, even if tapped water were provided.

Another group of farmers painted a similar picture. They had used oxen in the past, but cattle died due to drought and were stolen. They started to use donkeys, which were particularly useful for transport, carrying water, wood, people and shopping. Women could use donkeys by themselves. For a time it appeared that donkey plowing would be completely replaced by tractor plowing, but tractors are now difficult to obtain at the right time and expensive, and so many people still use donkeys.

Donkeys tended to foal every two years, and lived for about 14 years. The normal price for donkeys was just R 30, but in practice there was a shortage of donkeys and it was difficult to buy them. If donkeys were found by the roads they were impounded. Donkeys were also stolen (the village chief who had had eight donkeys, now only had four). People make their own harnesses from industrial belting.

There was only one animal-drawn planter in the village, but this was hired to several people. No one used animal-drawn weeders, but they would be interested in learning about this technology.

One farmer who owned mules was contacted. He had purchased these from a ('white') estate for R 1500. The mules were stronger, and did not walk so far from home when grazing. During the plowing season he worked five days a week for two months. He charged about R 50 for plowing one hectare which he could complete in one day, working from early morning until lunch time with a 25 cm plow. He used to achieve similar work with six oxen and a 30 cm plow. Out of the plowing season he used his mules for transport, carrying, for example, four sacks at R 5 per sack.

#### *Nebo District*

A women farmer interviewed in Nebo District owned oxen, donkeys and a tractor. As far back as she could remember, her family had used oxen. The first donkeys were bought in 1987 and the second-hand Massey Ferguson was bought in 1989 for about R 12 000. All were currently used. The tractor (operated by her son) plowed 30-40 ha per year, bringing in an income of R 3000-4000. The oxen (and one uncastrated bull) were used in a team of four for pulling a heavy four-wheel wagon (for domestic use and hire), for plowing (for hire), and for weeding (self and hire). The donkeys

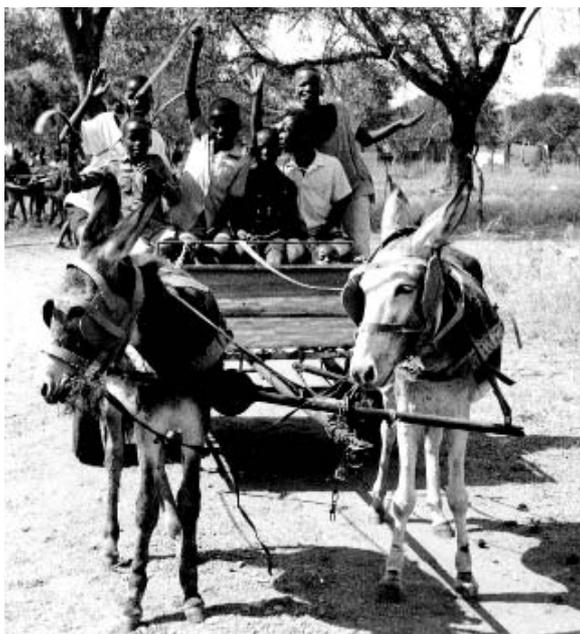
were used for harrowing and for a lighter cart (domestic and hire). The women preferred to span and work the oxen, rather than the (relatively new) donkeys.

#### *Thengwe District*

On hearing there was an animal traction survey visiting the areas, farmers in Mulodi Village, Thengwe District, arranged a meeting and demonstration with 40 people arriving with 13 donkey carts and two carts with mules. They claimed their donkeys and mules were invaluable, but the authorities repeatedly tried to discourage them from keeping working animals. For generations they and their ancestors had used work animals, but they were now told not to span oxen and not to keep donkeys. Although cattle had been the traditional work animals, cattle ownership had decreased due to drought and inadequate cattle numbers.

Donkeys were now the main work animal, as these were cheap (about R 60), easy to use (by men, women and children) and could survive drought with very little management. The authorities had claimed that there were too many donkeys and that not all donkeys were used, but the farmers insisted that all donkeys were owned, had names and were regularly used. About 40-60% of the people in the area (which was of recent but unofficial settlement) owned donkeys, but probably 100% used them, through hire or borrowing arrangements. They

*Children in a two-wheel cart pulled by two donkeys in Northern Transvaal (Lebowa)*



*A mixed team of a mule and a donkey pulling a four-wheel wagon in Northern Transvaal (Lebowa)*





*Four-wheel wagons drawn by mules in Northern Transvaal (Lebowa)*

were mainly use for transport (water, people, goods, shopping, etc).

The authorities had tried to persuade them to use mules, but mules were much more expensive (R 1000) and had to be bought from afar (from 'white' farmers). Furthermore, although they could work for many years, in the end one had nothing as (unlike donkeys and cattle) they did not reproduce. Mules were certainly stronger and faster, and all farmers would swap one donkey for one mule, but they could not imagine swapping 15 donkeys for one mule. Mules had to be worked almost every day, or they would start to become difficult. Unlike donkeys, mules were not thought to be suitable for women and children (women farmers were quite adamant on this).

Farmers considered that broadcasting seed was appropriate in that area due to the high drought risk and therefore weeding with animals was no practicable. They would be interested in lightweight plows for donkeys, and would like to learn more about donkey harnessing (they made harnesses themselves using belting, but felt they were not as good as leather harnesses they had seen elsewhere). The farmers predicted that the use of donkeys would increase, provided the authorities did not remove them.

#### ***Tompi Seleka College of Agriculture***

Although the college is located in Lebowa, and agriculturalists who attain diplomas there often work for the Lebowa extension service, the

syllabus has been determined by Pretoria Technikon. Thus for many years training has not been orientated to smallholder farming or to local conditions. There were also gender biases (women students did not normally do the agriculture diploma).

Although animal traction is very important in Lebowa in general, and the area immediately surrounding the college in particular, neither animal traction technology, nor the issues involved, has been taught there for many years. Theoretically the college could have developed its own syllabus but, had it done so, its students would have lost the possibility of a nationally-recognised qualification. Although the principal and staff saw the urgent need to re-introduce animal traction into the curriculum, there was a problem in that college staff had little knowledge, having never had any training in the subject themselves. There was a need to make the curriculum relevant and to orientate and motivate the staff.

Although all those at the meeting were quite enthusiastic about including animal traction in the curriculum, it was felt there was likely to be some resistance among some other staff, who might consider it a step backward. The college could bring animal traction into its environment by making greater use of animals on campus. Mules had been used for transport (including delivering of milk), and some horses might be worked. Staff were thinking of training some Nguni oxen from the college herd, and possibly



*Mules (bought from a large-scale farmer) pulling a wagon in Northern Transvaal (Lebowa)*



*Salique Equidae Farm and Mule Breeding Centre in Northern Transvaal (Lebowa)*

obtaining some donkeys. They appealed for resource books, information and training on the subject.

### ***Salique Equidae Farm***

The government-owned, Salique Equidae Farm (commonly known as the Mule Breeding Centre or Salique Teelplaas) was started in 1978 to provide mules for forestry plantations. It was thought at this time that the Lebowa forestry department could use 120 mules a year. However, senior staff started to implement a policy of mechanisation in the forests, and the station was passed over to the veterinary department.

In 1982, there were said to be 36 000 donkeys in Lebowa, which were consuming pasture that cattle could eat. Mules would eat less (because fewer would be needed), and since they would not reproduce, numbers would be stable, or might fall. Rather than sell mules for cash, it was intended to swap them for donkeys. This was not simply to make it easier for farmers to obtain them, but it would also eliminate some more donkeys (these were culled for meat). Demand was very strong at 8 donkeys per mule, but less enthusiastic at 15 donkeys per mule. These prices were cheap, for donkeys in Lebowa were valued at R 30-50, so even at 15 donkeys, the mules were valued at less than R 700, while mules from commercial suppliers cost over R 1200.

Although the centre is geographically isolated, it has a good infrastructure, with stable blocks and fenced pastures. It has been producing mules of high quality, using Friesian mares and Spanish donkeys. It has been trying to build up its stock of mares and currently has 88. This ought to lead to about 50 mules a year (a 70%

conception rate) although in 1993 there were only seven.

Mules should be handled young (preferably within two weeks) and often to ensure good behaviour during a working life of about 20 years. It would be uneconomical for the centre to sell trained mules, for this would put the cost up to R 3000 at three years, which would be unaffordable by most farmers. Thus mules were currently being sold for R 1350 at four months.

The centre did not have any estimates of market demand, except that it appeared large. Most mules actually left Lebowa, with speculators selling them as far away as Transkei and Western Cape. There was little or no feedback concerning how and where mules produced by the centre were being used. The centre was involved in some local agricultural development initiatives (eg, fruit trees), but there was little (if any) contact with farmers using mules or other work animals. Although the centre could be used for training, there was presently no work relating to animal traction at Salique. Students and staff from Onderstepoort sometimes came for veterinary practicals.

The future of the centre was currently under review, as it was quite costly to maintain, and the Lebowa authorities did not see the immediate benefits of the centre to their development programme. Among the suggestions was that it should become a national centre, that it should undertake a training role, that it should be privatised, or that it should integrate more closely into the agricultural development programme of Lebowa. The director of the centre argued strongly that the specialised facilities, expertise and genetic stock built up over the years should



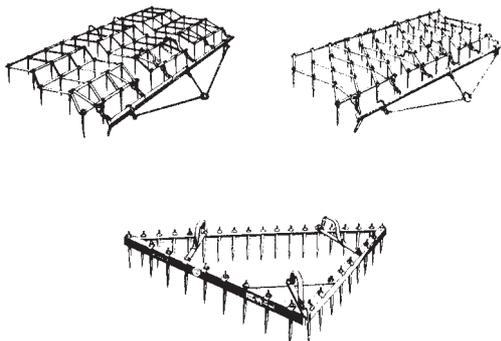
*Transporting wood by donkey cart in Northern Transvaal (Lebowa)*

not be dissipated or wasted. Perhaps the centre should become a national centre for supplying breeding stock. In any case, it was apparent that 'market research' was needed to establish the demand for mules in the country.

### **Pennells, Louis Trichardt**

Pennells Implements, based in Louis Trichardt, manufactures animal traction implements, including plows, ridgers, cultivators, harrows and single-row planters. These are generally based on the long-standing 'Safim' designs. Pennells used to manufacture for 'Fedmech', but terminated the agreement just before it went into liquidation. For a time, Pennells' main competitors for the national market were Vetsak based in Bothaville. However, while they still 'compete' in marketing equipment, they now manufacture on contract for Vetsak. They therefore perceive Zimplow of Zimbabwe as the main threat to their market. Recent annual sales have been in the region of 3500 plows, 1500 cultivators and 2000 seeders, with no sign of decreasing demand. Sales of spare parts were also very important, with around

*Animal-drawn harrows manufactured by Pennells Implements at Louis Trichardt*



20 000 plow shares a year sold. Pennells would be interested in diversifying or further improving its range of animal traction equipment provided this was commercially realistic, and looked forward to cooperation with SANAT in this regard.

### **Gazankulu**

#### *Geography and overview*

Gazankulu comprises about 748 000 ha of land in Northern Transvaal, with a population of about 600 000 people, most of whom live in rural areas. Although many of the 95 000 households only maintain small garden plots, there are about 28 000 smallholder farmers, with average allocations of 4 ha of land. Although many families are supported by the remittances of migrant workers, agriculture is important in rural communities. There are estimated to be about 140 000 cattle and 9000 donkeys. Animal power is important for plowing and for transport. Traditionally, oxen have been the main work animals, and they remain very important. As a result of recent droughts, donkeys are increasingly used.

#### *Authorities*

Due to the strikes taking place at the time of the survey, representatives of the agricultural authorities were unable to meet the survey

*Four-wheel donkey wagon with high bench seat in Northern Transvaal (Gazankulu)*





*Carrying water for several households using a donkey cart in Northern Transvaal (Gazankulu)*

team. However, staff of the Department of Agriculture and Forestry faxed information, indicating that cattle and donkeys were quite widely used and were beneficial to the farmers. Staff visited Hlanganani District and identified many users of oxen, cows and donkeys. Cows were used for work, being yoked in spans with oxen. Donkeys were widely used for transport, and some plowing/cultivation. All family members (men, women and children) participated in animal plowing and transport. The authorities provided on a limited scale a subsidised tractor plowing service (R 87/ha) which was much cheaper than private contractors (R 250/ha).

#### ***Farmers and field visits***

Research in Mhala District in the mid-1980s described the importance of draft animals in rural villages. It was noted that as a result of oxen dying during drought years, farmers tended to purchase cows that could both work and reproduce, so rebuilding herds. Farmers sometimes opted for donkeys, being much cheaper than cattle, and better able to survive. While people preferred owning and working with cattle, the use of donkeys was increasing (Fischer, 1989).

The same study also highlighted the great difference in perceptions of villagers and of the agricultural authorities, the latter trying to regulate land use and animal keeping in terms of theoretical land-use plans which did not suit the needs and aspirations of the farming

families. According to the study, farmers considered plowing with oxen was better than plowing with tractors from an agronomic point of view. The shallower depth of animal plowing led to a better planting depth and less soil desiccation. Where tractors were used private contractors were favoured for, although they were more expensive, they were more reliable and timeliness was important. However, tractor hiring was too expensive for most people. Teams of cattle cultivated for several farmers, sometimes for cash, sometimes for labour exchange or for family assistance. An example was given of 10 teams in one village plowing for 40 farmers (Fischer, 1989).

A woman farmer interviewed confirmed the major problem of drought that had been affecting animal survival for many years. While people had traditionally mainly used oxen for plowing, donkeys were now more common. Women and children could plow with donkeys (the woman and one helper worked with a team of six). There was now a scarcity of donkeys, and theft of donkeys was a problem. One had to travel far to obtain a replacement donkey. People generally aspired to use tractors, regarding animal power as old fashioned. Tractors cost about R 120/ha while donkey plowing cost R 15–20 a plot or R 80–100/ha. The use of donkey carts for carrying wood, water, grain, shopping and other goods was very important. The donkey cart was used daily, and was busy at weekends. People hired carts for about R 20–30 per trip.

# Eastern Transvaal

## KwaNdebele

### *Geography and overview*

KwaNdebele is very close to major industrial areas of Gauteng and this greatly influences its economy. A high proportion of residents, particularly in the south, commute out of KwaNdebele on a daily or weekly basis. For many residents, particularly in the south, smallholder farming tends to be a secondary activity, rather than the major source of livelihood. The importance of smallholder farming to communities increases away from the peri-urban areas. Of the 115 000 rural households, only about 7000 are thought to be active in agriculture. About 300 of these are emerging commercial farmers. The area is prone to drought, and cattle numbers are relatively low (35 000). While official figures put the total number of equids at just 1200, donkeys are used for transport in many areas, and they appear quite common in the north, where they are used for plowing as well as transport (suggesting the actual donkey population is higher than the official figures).

### *Authorities*

The survey team met with officials of the KwaNdebele Department of Agriculture including the Deputy Secretary and Principal Agricultural Technician at the government offices in KwaMahlanga. The officials conveyed the general feeling that animal traction was of little relevance and was seldom used by farmers. Draft animals caused overgrazing and accidents on the roads. Due to the expansion of the population grazing was becoming scarce. It was felt that all farmers, even those with small areas should have access to tractors.

Although it had been a policy to reduce donkey numbers, the campaign had not been rigorous. The Department was proud of its 300 emerging commercial farmers, including 140 settled on 38 600 ha in the south of the country. These generally use tractor power for farm operations, although a small number were said to own some animal traction equipment.

The KwaNdebele Agricultural Corporation (KAC) is a resource-rich parastatal organisation charged with developing economic agricultural development. Although it has a broad official mandate, including favouring 'labour-intensive

technologies' and 'participation with communities' it has no involvement with animal traction at all. It concentrates on working with a small number of 'emerging commercial farmers'. It also provides limited tractor hire services.

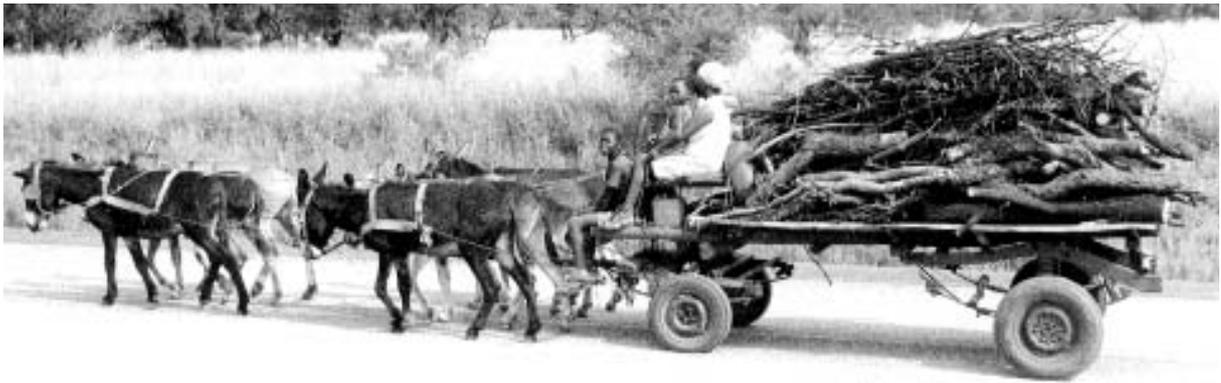
KAC's tractor hire services to its 'emerging' farmers have not presented major problems as these farmers have large areas of consolidated land close to the headquarters. KAC has had major problems maintaining its few centres for the smallholder farmers. Although it has charged hire rates that should, in theory, lead to cost recovery, the service has run at a loss. One reason is that hire rates have been based on 700 hours a year, which would be reasonable on large farms. Actual usage of tractors has been about 400 hours a year, which is not unreasonable for smallholder hiring. This has effectively meant a 60% subsidy over theoretical costs, plus the additional subsidy attributable to using the same charges for the isolated locations as those near headquarters. KAC knew that it was not meeting demand for tractor use in remote rural areas, but did not wish to expand this due to the logistical problems and uneconomic nature.

### *Farmers and field visits*

Farmers were visited in 'peri-urban' and 'remote rural' areas. There would seem to be little animal traction in the peri-urban areas, although a few donkey carts were seen. Some people suggested animal traction was not widely used because of lack of need (there were few large fields to plow, some tractors available, plenty of motorised vehicles for transport), lack of animals (numbers had

*Contractors transporting sand by donkey wagon in Eastern Transvaal (KwaNdebele)*





*Peri-urban contractors carrying wood on a wagon pulled by seven donkeys in Eastern Transvaal (KwaNdebele)*

declined, grazing was limited and stock theft a danger) and poor image (people had been told it was backward and the younger generation believed this). There were said to be more social problems (eg, split families, alcohol abuse) in peri-urban areas.

However, a local Chief visited in the southern area (where animal traction appeared low) said that at least 50% of the people in his area were still using animal traction mainly for transport but also for weeding. He reported that hiring tractors was not easy and he himself had plowed an area of 1 ha in 1994 using donkeys which he hired for R 55 per ha. He recalled that in 1981, politicians had tried to reduce the number of donkeys, claiming they were bad because 'donkeys poisoned the ground and killed the pasture'. However, donkeys remained important to people and he predicted that their use would increase in his area. One problem was lack of marketing opportunities for vegetables and farm produce.

One old farmer who had used 12 oxen until the 1970s, claimed government authorities had forced him to reduce his cattle herd, from 50 to 10. He reported that agricultural extension officers discouraged people from using animal traction. He therefore did not keep oxen and hired tractors instead. Now that the government had stopped hiring out tractors, it was difficult to obtain plowing services (if available, they were currently R100/ha). Some years ago the authorities had imposed limits of two donkeys per family, and had shot the others. In some cases even the two remaining donkeys had been shot by officials.

#### *Wolwekraal and Bloedfontein*

Further north, in the more remote rural areas, it is evident that animal traction is still commonly used by the farmers for plowing, transport and

some weeding. Some private tractors are available for hire, with contractors charging a price of about R 80–120/ha. KAC also does some plowing for small-scale farmers but it was difficult to obtain their services (limited supply of tractors) which were considered 'expensive' at R 137-150/ha with cash payment in advance.

Cattle used to be the main draft animals, but since the 1950s, droughts and pressure on land had made it difficult for cattle to survive. Farmers talked of 'poisonous plants' reducing cattle survival. There was also a problem of stock theft. Limits had been imposed on animal ownership.

As a direct result of lack of work oxen, donkeys had become increasingly employed and farmers reported that in some areas most people were now dependent on donkeys (sometimes owning 4–16 per family). Donkeys are used in spans of four for plowing and farmers with many donkeys could change donkeys during the day. Plowing with animals used to be done with three people, but this was becoming more of a problem due to the fact that the children were at school. Some farmers hired out their donkeys for plowing, but only after they had finished their own work and then at a rate of about R 60 per ha. Four to eight donkeys pull carts (with disselbooms) that carry firewood and sand.

Farmers reported that, unlike cattle, donkeys seldom suffered health problems. The biggest threat to donkeys was from humans (not the owners) who sometimes abused them. In the northern areas of Wolwekraal and Bloedfontein it was reported that in 1987 the government had planned to kill the donkeys, and had even excavated a pit for their bodies. The local people objected strongly, and were relieved that



*Calf suckling work cow, Eastern Transvaal (KaNgwane)*

nothing came of this. More recently (in the last year) it was reported that men had come in trucks and collected donkeys, sometimes offering children money. The children were scared of the men and the farmers were scared of losing their donkeys in this way. No one knew who the people were or where the donkeys were being taken (one suggestion was they were being obtained for a local lion park).

While donkeys themselves were not a problem, the availability of spare parts for the plows and weeders was a problem, as was the availability of suitable donkey carts. Farmers stressed that their animals were invaluable, and they would continue to be used in the future. Their biggest fears were the government culling their animals and the lack of interest of the younger generation in animal power. If this continued, animal power use might end when the older people died, but this was unthinkable, as there were no realistic or affordable alternatives to donkey power in the remote rural areas.

## **KaNgwane**

### ***Geography and overview***

KaNgwane comprises three districts, two of which (Eesterhoek and Nsikazi) border Swaziland, and the third (Nkomazi) borders the Kruger National Park. The total land area is 391 000 ha of which 60 000–90 000 ha are

considered to have arable potential, 190 000 ha is classified as grazing land and 23 000 ha are deemed suitable for forestry (in the hills bordering Swaziland). There are estimated to be about 140 000 cattle, 2000 donkeys and 1800 horses and mules. The northern Nkomazi District is relatively flat and arid. The southern Nsikazi District is very hilly (the edge of the Drakensburg). The central Eesterhoek District contains both plains (with some irrigation schemes and sugar cane) and mountains. Commercial forestry is undertaken in the hills. Mules were once widely used for timber extraction, and while most have been replaced by engine power, some continue to be employed. Cattle-keeping traditions are very strong in KaNgwane, and most farmers either own cattle, or aspire to do so. The use of oxen and cows for tillage and/or transport is very common.

### ***Authorities***

Discussions were held with senior officials within the Department of Agriculture and Forestry, including the Secretary, Deputy Secretary, Principal Agricultural Officer, and Agricultural Adviser. The survey team was informed that animal traction had virtually died out in KaNgwane. Apparently most farmers used tractors and probably fewer than 2% of farmers used oxen. The Department of Agriculture did not wish to encourage animal



*Woman farmer with mixed span of oxen and cows, Eastern Transvaal (KaNgwane)*

power use as it was old fashioned. Children were not available to work with animals and they did not wish to do so (agricultural tasks were used in schools as punishment, so children were no longer interested in agriculture). Private sector tractors were increasingly used. As part of agricultural and land-use policy cattle were no longer kept in the villages, but in 'camps', which made use of oxen difficult (and theft more of a problem). In 1987 there had been a policy to reduce the number of donkeys in the highveld. Donkeys that were owned were compulsorily purchased and sold to game parks for meat.

### ***Farmers and field visits***

#### *Nkomazi District*

Farmers visited in KaNgwane reported that animal traction was widely used, and more than half the farmers in the rural areas made use of animal power. A group of farmers in Nkomazi

*Farmer with animal-drawn two-row seeder transported on a simple wooden sledge by work cows, Eastern Transvaal (KaNgwane)*



District arranged a demonstration of draft animals and implements, and participated in wide-ranging discussions. Animal traction was very widely used in the area. Cattle keeping was an important part of local tradition, and people had used oxen and cows for work for as long as people could remember. Although oxen were stronger, many farmers used work cows, particularly now that herds tended to be smaller. Farmers with many oxen faced much risk of theft (stealing was now a major constraint). Farmers used to plow with spans of eight animals, but this was increasingly difficult. Spans of two or four oxen were more common, and these were sometimes used after tractor plowing for secondary operations such as ridging and planting. Animal-drawn weeding was not very common, as weeders were not available. Some farmers used donkeys because they could not afford cattle. Local traditions favoured cattle, and farmers reported that the government officials had told them that donkeys 'destroy pastures' and 'eat 24 hours a day'.

Most cattle-owning farmers had sledges for basic transport, as these were very cheap. Ox carts or donkey carts were better for transport, but there were not enough of these in the area as they were difficult to obtain and expensive and credit was not readily available. The owner of a donkey cart hired it for R 15 per trip, and often made two trips a day.

The major constraint was shortage of land and insufficient grazing for cattle. There was little food for cattle at the end of the dry season,



*Farmer with the cultivator he uses with his oxen, Eastern Transvaal (KaNgwane)*



*Single-furrow ox plows and cultivator used in the present season, Eastern Transvaal (KaNgwane)*

particularly in drought years. Animal health was a problem, drugs were expensive and some (but not all) farmers had little faith in the veterinary officials. Some traditional herbal remedies were used. It was difficult to obtain spare parts for animal-drawn equipment. Despite the problems, farmers were sure they would still be using animal power in ten years' time.

#### *Eesterhoek District*

A farmer visited in Eesterhoek District painted a similar picture. About half the farmers in his area actually spanned oxen, and others hired them. Spans of six animals were common, with mixed oxen and cows (cows increasingly used). Animals were used for plowing, weeding and transport. Most cattle-owning farmers had sledges, and a few had carts. People who hired tractors for plowing tended to weed with hoes, which was more of a problem than animal-powered weeding. The farmer was adamant that using oxen and animal-weeders led to higher yields (about 40 bags per ha compared with 25 bags per ha with tractor plowing and hand weeding). The main animal constraints were

*Plow transported on sledge by work cows Eastern Transvaal (KaNgwane)*



drought, theft of animals and animal health problems. Equipment spares were difficult to obtain (people travelled into Swaziland).

#### *Nsikazi District*

A farmer visited in Nsikazi District had a wide range of animal-drawn implements, but found it difficult to obtain spares. In his area, tractors had been quite widely used for several years for plowing the large, valley-bottom fields, but animals plowed the smaller and higher plots. Tractor services were often difficult to obtain. Animals were used for weeding and transport (both carts and sledges). Cattle were not as available or accessible as in the past. Although some people felt animal power was old-fashioned, it would remain in use for many years provided the people could obtain the necessary equipment and spares.

*Descending hill with ox cart loaded with wood, Eastern Transvaal (KaNgwane)*



# Gauteng

## *Geography and overview*

The Gauteng area (formerly PWV, for Pretoria, Witwatersrand and Vereeniging) is highly industrialised and predominantly urban and peri-urban in infrastructure and economy. Although many residents cultivate the plots of land around their houses, smallholder agriculture is not of major economic importance. Animal power is used to a small extent for transport. Horses are used for transporting coal and steel scrap in Soweto and other 'townships' and in some peri-urban areas. Some donkeys are used for rural transport, notably in the north adjoining areas formerly designated as Bophuthatswana and KwaNdebele. Elsewhere, on some large-scale farms, donkey carts are used by the workers, and may carry family members to the main roads or to school. Earlier this century animal power was very important in the area for transport, cultivation and mining. This is commemorated in several museums. Several organisations located in Gauteng are interested in animal traction research, development, promotion or improvement.

## *Highveld Horse Centre*

The Highveld Horse Care Unit located near Vereeniging is run by the Society for the Prevention of Cruelty to Animals (SPCA), and operates an animal inspection service that, in theory, covers the area of Transvaal and Orange Free State. In practice, limited staff (four veterinary nurses) and resources mean that the unit operates mainly in the Gauteng (PWV) area.

Some of the transport animals used in the 'townships' are poorly treated, causing SPCA to intervene on occasions. One problem is that most of the horses used are 'thoroughbreds' culled from the racing industry, and sold very cheaply. These animals have been bred for racing on turf, and tend to be unsuited for cart pulling on tar roads in traffic. Many only live six months, and the SPCA would prefer them to go straight to the abattoir from the race industry and not be used for work. Hardy Lesotho ponies would be better for urban work, but some SPCA staff would like to discourage any use of animal-drawn carts in towns. The feet of urban animals often need treating (there is one farrier on the programme), and harnessing is

often a problem (donkey harnesses made in Soweto by SPCA cost R 400 for a pair).

SPCA has found that it has been difficult to motivate the users of animals on welfare issues and young people have often shown little interest in the subject. SPCA and the Highveld centre have been predominantly 'white' organisations and their reputations within townships have not been helped by their law enforcement role (confiscation or culling of suffering animals). For many months the police advised Highveld unit staff that it was unsafe for them to enter townships.

## *University of Pretoria, Onderstepoort*

The Faculty of Veterinary Sciences of the University of Pretoria has recently shown interest in the topic of animal traction. It organised a one-day workshop, sponsored by the Foundation for Research Development (FRD) attended by about 33 people (Krecek, Starkey and Joubert, 1994a, 1994b). Participants included ten Onderstepoort faculty members, the present survey team, staff of the Medunsa Veterinary Faculty and the SPCA, and other people interested in animal traction including sociologists and anthropologists.

Issues relating to animal power were discussed at the FRD workshop and it was concluded the most important draft animals in South Africa were donkeys, cattle, mules and horses. The lack of reliable information on draft animals in South Africa was recognised, and it was recommended that a questionnaire be prepared to facilitate data acquisition during local in-depth surveys. A working group involving six institutions was established to undertake this. It was also concluded that a comprehensive,

*Afrikaner oxen used for plowing demonstrations at Willem Prinsloo Museum, Gauteng*





*Donkey with animal-powered water-raising system at Willem Prinsloo Museum, Gauteng*

multidisciplinary draft animal research programme should be developed with a strong focus on farming-systems methodology and the participation of smallholder farmers. It was agreed that, in the first instance, some survey work relating to donkey utilisation and health would be carried out by faculty staff.

It was noted that the Equine Research Centre based in the Faculty has been carrying out studies relating to race horses (funded by the racing industry) and makes use of Faculty facilities (including tread-mills and gas analysis systems) that could be used for physiological or energy-utilisation research relating to animal traction. As there was a serious lack of available literature on animal traction in South Africa, attempts would be made to establish an 'on-line' animal traction bibliographic database



*Part of the large reserve collection of old animal traction equipment, including scoops and graders, at Willem Prinsloo Museum, Gauteng*

using the University of Pretoria computer system.

#### ***Willem Prinsloo***

Willem Prinsloo museum has a large collection of equipment relating to animal traction. It ranges from historic wagons to more recent equipment such as scoops and seeders. The museum maintains oxen, horses and donkeys for demonstrations. Staff of the museum expressed interest in including modern applications of animal power in its displays, which are seen by large numbers of adults and children each year.

#### ***Rutec***

Rutec is a small company orientated towards small-scale development that specialises in supplying equipment for labour-intensive operations. It sells carts, harnesses, plows and seeders and other animal traction equipment. As it is located in Johannesburg, far from smallholder end-users, its main customers are development programmes that order consignments of equipment. Rutec would be very interested in marketing new equipment (such as donkey plows) based on designs brought in from elsewhere or developed in collaboration with other organisations.

# North-West Province

## Bophuthatswana

### *Geography and overview*

Bophuthatswana comprised a number of separated areas mainly in the North-West Province, with some parts close to big cities and towns, eg, Pretoria, Brits, Rustenburg and Zeerust. There was also a section (Thaba Nchu) near Bloemfontein in the Orange Free State. Bophuthatswana had many peri-urban areas, as well as remote and very remote regions.

Most of what was known as Bophuthatswana is quite flat, and parts to the west are very dry and infertile. The more central areas have better rainfall and form part of the 'maize triangle' or 'mealie belt'. It is estimated that 84% of the population of two million are based in rural or peri-urban areas, and that 70% of these cultivate some crops. The number of 'commercial' farmers is estimated at 7800 (2.5% of the rural population) and these are mainly based in the central maize belt. The 230 000 cattle are owned by 53 000 families, with 75% of herds comprising less than 20 head. There are estimated to be about 15 000 donkeys, 3000 horses and 200 mules.

### *Authorities*

During the survey, about one hundred people were contacted in Bophuthatswana, including small-scale farmers, agricultural extension officers and officials at Agricor (Bophuthatswana Agricultural Corporation). During the meeting at the Agricor Headquarters in Mmabatho, several district managers presented information concerning official attitudes and policies.

In the recent past, the authorities in Bophuthatswana have actively discouraged the use of draft animals. Bophuthatswana authorities wanted the territory to be seen as progressive and modern, and so tractors were generally encouraged. It seemed as if animal traction began to decline around the 1970s due to the drought, the introduction of other breeds of cattle and the importation of tractors. More and more land was being cultivated by tractors (which are much quicker than draft animals) and this led to diminishing pastures. The combination of drought and reduced grazing meant that cattle were not in a good condition to plow. Furthermore, the animal health and production staff considered animal production

and meat quality would be higher if cattle were not worked. Exotic breeds less suited to draft work were promoted and Agricor advised people not to use their cattle for plowing. Farmers were told that non-working animals would attain higher prices at auctions.

The 'success' of the policy of eliminating work cattle is indicated by some Agricor research, said to incorporate a cattle-owner perspective. This did not even consider the actual or potential role of cattle as draft animals (Schmidt, 1992). Other research involving about 500 households noted that use of cattle for plowing had fallen markedly in Vryhot, close to Mmabatho, but then cited key farmer-perceived problems which included lack of labour and draft power for land preparation, unavailable tractor services and "donkeys shot" (Tire, Mothibi and Tsamaesi, 1993).

It was believed by the authorities that many of the donkeys seen in the countryside were unnecessary pests, unowned and unwanted, and this culminated in a major compulsory culling ('massacre') of many donkeys in the early 1980s. As policy has been aimed generally at the phasing out of animal traction, there appear to have been no official attempts to assist those farmers who have been using animal power. Many of the past attitudes remain among existing agricultural staff, but some agriculturalists now accept that animal traction is important to local farmers.

During the 1970s and 1980s, the government ran subsidised tractor plowing schemes. These proved expensive and generally uneconomical, and in 1992 it was reported that only 15% of the national tractor fleet was in good operational condition, with 60% requiring rebuilding and 25% needing to be replaced (Bophuthatswana, 1992). The new policy was that there should be no direct tractor subsidies and that tractors owned by Agricor should be privatised. Mechanisation support strategies should now focus on selective finance, training, improved servicing capacity and collective use of machinery. There was no official policy relating to animal traction, possibly because this was not considered of relevance and the authorities were still very worried about 'overstocking', estimated at 55% over carrying capacity (Bophuthatswana, 1992).



*Donkey cart, North-West Province (Bophuthatswana)*

Despite official neglect, it seems that animal traction is still widely used in Bophuthatswana, especially in the more remote rural areas. Even in the peri-urban areas animal power is used for transport, and to a lesser extent for garden cultivation. In the central maize-growing area tractors are hired for plowing, and then planting and weeding are done by animal traction. In the peri-urban areas most of seed is broadcast and therefore weeding is done by hand. The tradition in Bophuthatswana has been to span large teams of animals. Spans of 10–14 oxen or donkeys are not rare. However, due to previous government policies and at least two big droughts, the number of cattle being spanned for cultivation and transport is now much smaller than the number of donkeys spanned. The use of donkey carts is very common, particularly in the western areas. The carting of feed for cattle is sometimes seen.

The authorities have been encouraging sharecropping. One leader farmer is appointed. He then gets enough small farmers to 'lend' him their land for cultivation to make up a unit of at least 75 ha, the minimum size required by Agricor for financing. The leader farmer then gets soft credit to purchase a tractor and implements. In return for the use of the land the small farmers get 30 bags of maize for every 15 ha that is part of the big farm. In 1994 there were 350 leader farmers on this system and at least 80% of the farmers in the Ditsobotle District (part of the relatively productive maize belt) form part of the system. There is,

however, now a problem with some farmers feeling that the leader farmers are making too much profit and they are pulling their land out of the system, making it unviable for the leader farmers to continue.

It is now acknowledged that various expensive, centrally-managed agricultural projects did little to benefit the local people (Bophuthatswana, 1992). It is envisaged that many will be privatised.

### ***Farmers and field visits***

#### *Odi, Madidi, Mothutlung*

In Madidi (just 60 km from Pretoria) interviews were held with seven farmers at an Agricor Service Centre. Here it seemed that the number of cattle has decreased significantly since the 1950s, due to droughts and the government policy of livestock reduction. In the early 1950s, almost all farmers plowed with oxen. Around 1954 farmers were limited to a total of four animals. As oxen became scarcer, farmers started spanning bulls and cows as well, so that perhaps only four out of 12 cattle spanned were oxen. Then, because of the problems, donkeys started to be used for plowing as well as transport. Nowadays they are mainly used for transporting a wide variety of goods including sand, harvest and wood. In Mothutlung donkey carts transporting water are abundant.

In the peri-urban areas, there is a tendency not to sow crops in rows in the small plots. Weeding is seldom done by animal traction and few planters and weeders are owned. In this area farmers are advised by the government to form groups, so that the land of several farmers can be plowed at the same time for R 100/ha.

Donkeys seem to be very important to people in this region. The farmers reported donkeys could work for up to 25 years, so that a donkey that witnesses a marriage may live to see the grandchildren of the marriage! However, donkeys are very scarce, due largely to theft. The farmers reported that the authorities seemed not to be very worried by donkey theft. They apparently joked, and suggest that donkeys are common property. The farmers disagreed and pointed out that, even if donkeys graze together, each donkey belongs to one farmer. Some are branded for identification or marked on the ear, but it is still common for donkeys to be stolen. The new owner then cuts off the old brand and adds a new marking. Notwithstanding their claimed usefulness and scarcity, the price of the donkeys very seldom

goes above R 60, although farmers say they cannot easily buy them at any price.

Most farmers thought mules were very useful for strong, active male farmers, but they were very scarce and expensive (R 1500 was quoted). They also had to be used very regularly to ensure good behaviour, and they could not be released for a lunch-time break.

Farmers talked about the donkey cull of the 1980s. All female animals and uncastrated males in their area were shot without any compensation. Farmers were allowed to keep up to four castrated donkeys, which was not enough for plowing. Farmers reported that when some people tried to ask questions, they were warned that anyone complaining might face the same fate as the donkeys!

#### *Rietgat*

While meeting with farmers of the Rietgat area the effect of the government policy of cattle reduction became very clear. People used to plow with oxen, but there were now very few farmers in the area plowing with cattle. Farmers claimed that around 1960 they had been told by the government to stop plowing with oxen. It was now difficult to work with cattle as severe stock theft problems have reduced animal availability. As children attend schools, family labour can be scarce. Donkeys were now the main work animal in the area.

Most of the plowing in the area was now done by private tractor contractors who charge R 85/ha for plowing, R 60/ha for planting and R 60/ha for weeding. Out of the 12 farmers present at the meeting two were using donkeys and one had two mules. Theft of cattle and donkeys seemed to be a big problem, but the police did not take the theft of animals seriously. As people are scared of mules, they were less likely to be stolen.

Because of the thefts, donkeys were hard to obtain, but the trend was that they were increasing. They would increase more rapidly if theft could be controlled.

The unfavourable myths about the donkey (eg, that it eats too much and it eats 24 hours per day) commonly quoted elsewhere did not seem to be well known here.

During the donkey cull of the 1980s, farmers were allowed to keep just two castrates, and all other male and female animals were shot without compensation. One farmer claimed hinnies were good, and easier to deal with than



*This locally-made bridle, bit and harness were causing some distress to the donkeys. The owner was unable to obtain affordable harnesses locally in the North-West Province (Bophuthatswana)*

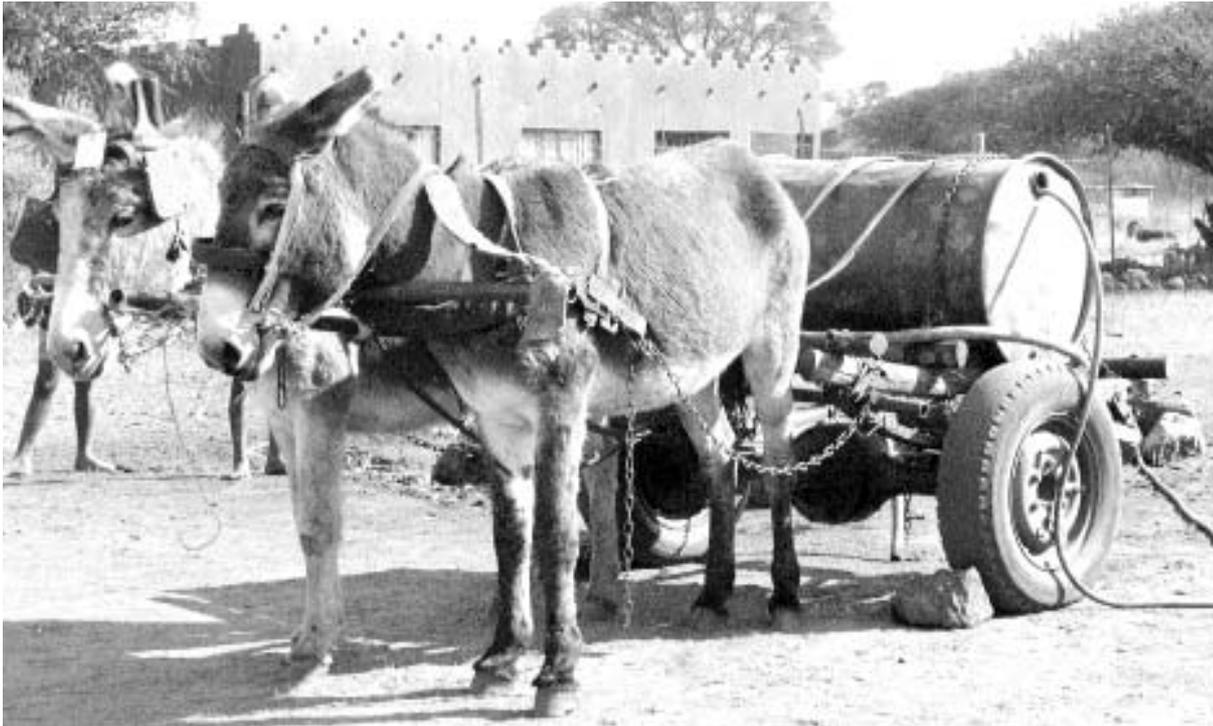
mules, but his were killed during the donkey cull and his horse subsequently died. Farmers said that the donkey cull made them realise how much they had benefited from donkeys. Apparently no one in the area had supported the cull, but they had no choice. They claimed that the state of the veld had not changed as a result of the cull.

#### *Mankwe District*

Speaking to farmers from the Mankwe District, it was clear that most people in the area used to plow with oxen. Then drought reduced the number of oxen (no reference was made to compulsory cattle reduction) and few cattle were now used for plowing. As oxen became scarce, some people started to use donkeys.

One farmer said that it was old-fashioned to plow with cattle and that it was more modern to use donkeys! He plowed with six donkeys and a single-furrow plow (and at least three other farmers did the same).

Most plowing in the area was now done by tractors at a rate of R 50/ha. Weeding was done by hand as the seed was broadcast. Farmers expressed interest in the possibility of weeding



*This locally-made donkey-drawn cart has been specially designed for water transportation in North-West Province (Bophuthatswana)*

with donkeys. Locally-made donkey carts were widely used for transporting wood, water and other goods. One farmer interviewed collected water for others using a 200 litre drum, charging R 3 per load. It was said that in the peri-urban areas, agriculture was no longer very important and that transport (including used of donkey carts) brought in more income than crop production.

#### *Madikwe District*

In the first village visited in Madikwe District, it seemed that there was no one using animal traction for cultivation, only donkeys for transport. In the second village however, there were at least three farmers who spanned up to 10 donkeys for plowing. Transport was still the main activity for donkeys. Horses were used for riding but not for cultivation. Donkeys were increasing, but theft was a major problem. One farmer suggested a scheme for registering donkeys, to help overcome the theft problem. He had had two donkeys stolen, and claimed to know the thief but stated that the police were not interested in donkey matters. The 'thief' apparently claimed he had found the donkeys 'wild and unowned' by the road.

#### *Lehuruthse District*

Lehuruthse, in the north-west close to Zeerust and the Botswana border, appears drier and

poorer than other areas visited. There is also much more animal traction being used, with few tractors available. Many residents are Xhosa, whose great-grandparents settled in the area at the end of the last century. In one interview, three farmers used donkeys but all four used oxen. In another interview, three farmers used donkeys and two used oxen. They estimated that 30-40 farmers in the area presently use their own cattle for plowing, and a further 20-30 people would plow with animals if they could obtain spare parts for their implements. Thus about 25% of the farmers owned spans of cattle and plowed for themselves as well as for neighbours.

There were generally 10 cattle in a span for a single-furrow plow and 12 or more if a double-furrow plow was used. Spans were of mixed gender, and cows were commonly used for plowing now that there were fewer oxen. Such teams could plow about 0.4 ha per day.

Oxen were also used to pull dam scoops. The work is done communally, and land is first loosened by plowing, and is then moved with scoops pulled by 10-12 cattle. The main problem with cattle was lack of forage, and this was particularly severe at the onset of the rains, when plowing was needed. Some farmers believed that the authorities, who actively discouraged the use of oxen, had introduced

new cattle marketing arrangements that reduced their freedom to sell their animals for the best price. They were told that any work animals were 'marked down' in price.

Donkeys were spanned in tens for plowing and in fours or sixes for transport. About 25% of farmers owned donkey carts, which were widely used. The prices of donkeys varied between R 50 and R 100, but donkeys (if available) could be swapped for a full-grown goat. Mules cost about R 1000, but had to be brought in from a large-scale farmer 200 km away. Several farmers used teams of two mules for transport and for plowing. Horses were only used for riding. Farmers said that they were 'still feeling the pain' of the 1983/84 donkey 'massacre'. Widows who had depended on donkeys had suffered particularly. The donkey population had not fully recovered, and donkey theft was a serious problem.

Farmers complained that the local extension officers and animal health officers actively discouraged people for using animal traction. Agricor extension officers confirmed this and thought farmers should take loans to buy tractors. In 1988/89, Agricor had provided a plowing service for R 28/ha, but this had ceased as the tractors had broken down. Some private tractor plowing was available at about R 160/ha. One farmer had purchased a second-hand tractor, but he could not afford to run and maintain it (one repair bill had been R 5500).

#### *Molopo District*

Twelve farmers were interviewed in the Molopo district, a peri-urban area close to the administrative centre of Mmabatho. The sharecropping system of farming seems to be very alive in this area. One farmer previously used 12 donkeys for plowing but since the drought he has been using four horses. The horses are used for plowing, weeding and planting. He was happy to work with horses, and having seen the debt problems of some neighbouring farmers, he did not want to risk a tractor loan.

Another farmer had used four mules and four horses in a team for plowing but all of them died during the drought. He then started using cattle and then tractors, but felt that using animal traction was 'backward'.

One of the farmers used eight oxen for plowing, but all died due to the drought. Thereafter he resorted to donkeys for plowing, spanning 12-14 of them. He lost his donkeys

during the drought of the 1970s and the government donkey cull of the early 1980s. He changed over to sharecropping but still feels that if he had people to help him he would rather use animal traction.

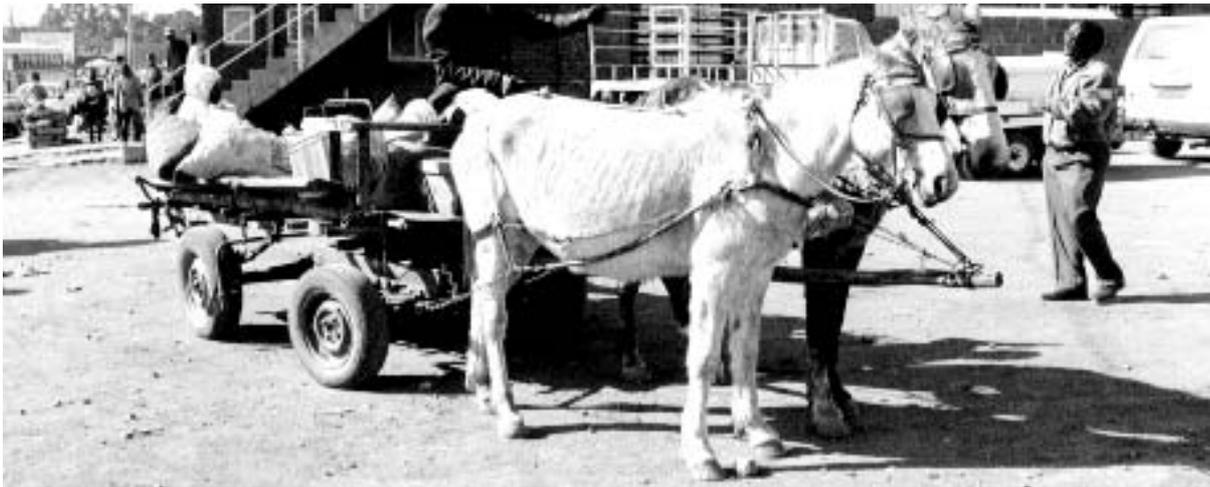
It seems that all the farmers used cattle until a big drought when most of the animals died. The useful role of the donkey was stressed by one farmer who said that he and his wife could easily work with 4-14 donkeys. He thought it best to own at least 16 donkeys. Using large numbers of oxen was not possible without additional labour, and their children were now at school. A single donkey would not be able to plow deep enough, so one would have crop failure. Donkeys were widely used for transport and in emergencies they could be spanned quickly to take people to hospital. Farmers were 'still crying' about the donkey 'massacre'.

At the Mareetsane Agricor service station in the Ditsobotla area, a farmer mentioned that he used five donkeys for plowing but would prefer using a tractor since he was alone. He would still keep two donkeys for transport. Agricor extensionists confirmed they discouraged people from using cattle for work, because they understood this was 'not productive'. They noted that any cattle known to have worked would be 'marked down' in price at auction.

#### *Donkey culls*

There seems to be much controversy surrounding this matter. There is the viewpoint of the officials and then the contrasting viewpoint of the farmers. In Bophuthatswana there are a lot of donkeys visible in villages and fields. To someone from the towns, these donkeys appear to be just roaming around. The farmers claimed that all donkeys were owned by specific farmers and that even if they appeared to be roaming freely, donkeys generally had names and identification marks. Officials claimed that donkeys were often wild and considered as a pool. Farmers thought it possible that in some villages, a person might take a nearby donkey for work, but this would be strongly disapproved of by the rightful owners. Ownership of donkeys was very important to many farmers.

In the early 1980s, the population of donkeys was increasing although pasture was poor and limited (due to drought). The agricultural authorities estimated that the land was severely over-stocked (some estimated over 200%). In



*Wagon drawn by two horses used for urban delivery, Thaba Nchu*

some areas there was also a problem of donkeys walking onto the roads and into other farmers' gardens. Farmers say that at this time there were not too many donkeys. All donkeys were used.

In any event, it was decided by the government that the number of donkeys should be reduced. According to officials, farmers were informed of the decision (and the reasons) and they were instructed to bring their animals to be killed. Officially, people were allowed to keep four castrated males and one female.

Unfortunately the whole situation got out of control and in some areas a total cull was attempted. Police force members were reportedly seen shooting donkeys on sight, sometimes for 'target practice'. Farmers had many tragic tales of that period and most are still very sad and bitter. Several farmers who owned spans of 14 donkeys used for plowing

were left with four, too few to pull a large plow. One woman who had just four donkeys that she used daily for water collection and other transport had them shot in front of her while still harnessed to the cart. Thousands of donkeys were killed.

Farmers reported that the killings did not seem to affect the condition of the veld, which appeared similar in the years before and after the shootings.

Some officials still believe the cull to have been necessary and justified. They argue that the stories of unfortunate excesses should not detract from the validity of the campaign.

*Wagon drawn by a single horse used for urban delivery, Thaba Nchu*



# Orange Free State

## General

Although the large-scale farms of the Free State are highly mechanised, carts pulled by donkeys, or sometimes by horses or mules, are sometimes used for transport by farm workers and their families.

## Thaba Nchu

Thaba Nchu located near Bloemfontein in the Orange Free State was part of Bophuthatswana, although geographically far away from the other areas. In Thaba Nchu town, horses with four-wheel wagons are widely used for local deliveries and travel from villages to the town. Horses are also employed for rural transport, as are ox wagons.

Unlike similar areas in Bophuthatswana, there is an marked absence of donkeys in Thaba Nchu. The Bophuthatswana authorities (as discussed above) were worried about 'overstocking' and for many years attempted to reduce the numbers of livestock maintained. However, it appears that in Thaba Nchu donkeys and goats were totally banned as early as the 1950s and this ban has generally remained in force.

Ratabane village was visited. The one farmer that was interviewed has much animal traction equipment, including single and double plows, weeder, planter and disc harrow. During the 1994 season he used a tractor for plowing but planted, weeded and disc-harrowed with animal traction. When he plowed, he used a team of 10-12 oxen.

According to this farmer 50% of the weeding in the area is done by tractor, 30% by hand and

*Survey team examining equipment including double-furrow plow with farmer in Thaba Nchu*



20% by animals. Plowing with a tractor costs R 50 per ha and weeding R 20 per ha. Another farmer recently bought himself a tractor with money saved from working on the railways. It was a 1968 Massey Ferguson that cost him about R 6500. It was used for plowing 25 ha per year and was not used for transport.

## Qwaqwa

### *Geography and overview*

Qwaqwa is a very small and hilly locality. Of its land area of about 64 000 ha, only about 6000 ha is deemed suitable for arable crops. The area is densely populated with over 457 people per square kilometre. There are over 50 000 households, most of which only have small garden plots. There are some small farmers with up to 3 ha. The whole area can be considered 'peri-urban' as nobody is ever far from a town. Wages and remittances from outside Qwaqwa are extremely important for the local economy and agriculture contributes less than 3% of the Qwaqwa 'GNP'. According to 1992 statistics, there were 12 600 cattle, 94 horses and 31 donkeys in Qwaqwa.

### *Authorities*

The Department of Agriculture of Qwaqwa was contacted and discussions held with staff of the veterinary service. Farming is not a major activity in Qwaqwa due to its small size and the high proportion of migrant workers. It is estimated that perhaps only 1% of the rural people would use animal traction, if any at all. Horses are used for riding and donkeys are used as pack animals. There are no reports of mules. The Department of Agriculture provides a tractor plowing service at the highly subsidised price of R 22/ha. Private contractors charge R 82/ha.

## Plean Clydesdale Stud

In Clarens, near the border with Lesotho, the small Plean Clydesdale Stud has been established on a commercial farm. The Clydesdale draft horses, originating from Scotland, are used daily on the farm, mainly to transport animal feed. The horses are also kept for shows and are all trained for tasks such as pulling rollers on the new lucerne fields and for plowing. Two horses can easily pull a load of 1500 kg on a trailer in the hilly area. It is



*Clydesdale heavy horse with wagon at Plean Stud  
Orange Free State*

intended that the stud develop, and supply Clydesdale horses to farmers throughout the region.

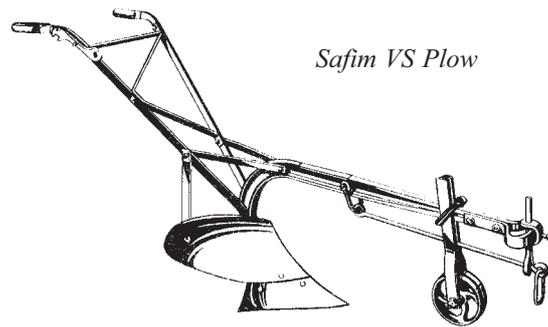
### **Vetsak equipment**

Vetsak, a major manufacturer and distributor of animal traction implements, is based in Bothaville in the Free State. The firm took over the manufacture and sale of 'Safim' implements from Fedmech, initially marketing under the name 'Nalva'.

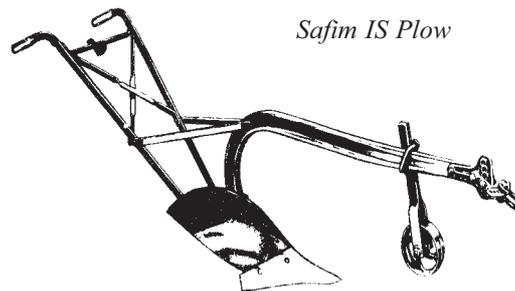
During the period 1988-92, annual sales volumes were in the region of 8500 plows, 4600 cultivators and 5300 seeders, with no sign of decreasing demand. Vetsak's exports to Namibia, Swaziland and Lesotho can account for 25-50% of sales.

Although Vetsak continues to market independently, it has recently contracted Pennells Implements, based in Louis Trichardt, to undertake the actual manufacturing for them. Vetsak, which provided much valuable information to assist this survey, would be interested in diversifying or further improving its range of animal traction equipment provided this was commercially realistic, and looked forward to cooperation with SANAT in this regard.

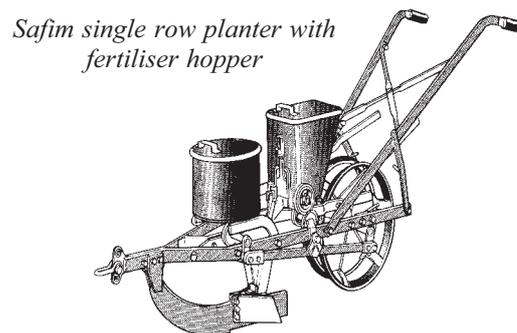
### *Safim equipment marketed by Nalva*



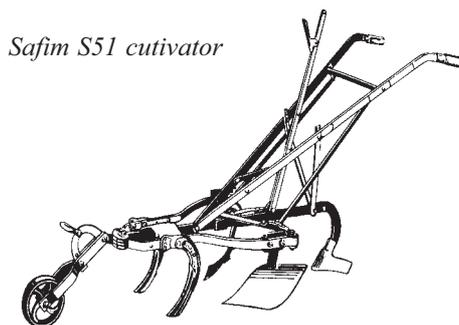
*Safim VS Plow*



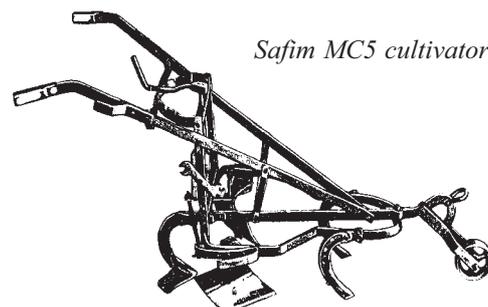
*Safim IS Plow*



*Safim single row planter with  
fertiliser hopper*



*Safim S51 cultivator*



*Safim MC5 cultivator*

# KwaZulu-Natal

## KwaZulu

### *Geography and overview*

KwaZulu is large (3.6 million hectares) and populous (4.5 million rural people) and has strong cattle-keeping traditions (1.5 million cattle). Although much of the land is classified as having only 'grazing' potential, smallholder crop production is important, particularly the cultivation of maize. Cattle fulfil numerous economic and social functions, including the provision of draft power.

The combination of drought, grazing pressure (considered by some as 'overstocking', but others as 'land hunger') and population growth has led to poor animal condition and/or fewer cattle per farming family, and an apparent shortage of animal draft power. To some extent this has been relieved by increasing tractor use, but cattle remain very important as draft animals in many rural areas. Donkeys (population estimates ranging from 10 000 to 40 000) are common only in certain areas, where they are used mainly for transport.

KwaZulu comprises four regions: Mabedlana, Ogwini, Mpandleni and Umzansi, which are subdivided into a number of districts. These regions are geographically very different from each other and vary from hilly, broken, dry areas to fertile, flat coastal terrain. Sugar cane is economically important in several more fertile coastal areas and in Simdlangentsha District just south of Swaziland.

### *Authorities*

The Department of Agriculture was visited in all four regions. It seemed that officials were receptive towards animal traction. They had a system of training called 'appropriate technology' where the farmers are taught tractor skills in the tractor (mostly sugar cane) areas and animal skills in the areas where animals are more often used. However, animal traction is not in the syllabus of the training colleges. It was also felt that the image of farming was not that good with the younger generation.

There are no more government-operated tractor schemes due to competition with private tractor contractors. The government-owned tractors are being used only on the demonstration farms. It was also mentioned that with the increasing supply of water and electricity to communities, the need for animal-drawn transport for water

and fuelwood will decrease. Cattle are the main draft animals and these are used in mixed teams.

Donkeys are used in certain areas, but are often associated with poorer people. There had been attempts to reduce the number of donkeys through auctions and sales but this did not prove to be successful for farmers did not want to sell their animals. One incident reported involved a senior officer in KwaZulu who was convinced there were too many donkeys. He asked extension agents to persuade farmers to dispose of their donkeys. He arranged a big sale and predicted sales of thousands of donkeys. Buyers came in lorries from great distances, ready to buy the donkeys (as cheap meat for pet food, zoos, circuses, etc). To the embarrassment of the authorities, most lorries went back totally empty. Only about 30 donkeys were sold that day, because it was voluntary, and farmers did not want to sell their animals.

The parastatal KwaZulu Finance Corporation (KFC) has concentrated on capital-intensive farming systems, including irrigation schemes and sugar cane production, and it is said to have minimal impact on the majority of smallholder farmers. It has provided some tractor plowing services, but these proved to be a drain on resources. To encourage entrepreneurial farming, loans have been given for the purchase of tractors. Repayments were said have been reasonable in the sugar cane areas but poor elsewhere (figures quoted indicated 86 loans out of 88 were in arrears).

### *Farmers and field visits*

The Makhathini Research Farm (run by the South African Department of Agriculture) near Jozini in northern KwaZulu was visited. At the nearby irrigation scheme, 250 farmers have been allocated 10 ha each to grow crops, notably cotton and maize. Animal traction is not used in the scheme. A little further away, there is another scheme where farmers have plots of 40-50 ha, with tractors used for plowing. Weeding is by hand. Although quite a number of people own tractors, many are in poor condition, and even tractor owners hire-in tractors for plowing and use their own for planting and transport. Old ox planters are sometimes used behind tractors. In 1990, a few



*Donkeys used for plowing, KwaZulu-Natal*

farmers from the Kwangena and Daggakraal villages bought some small two-wheel Ferrari tractors, but they proved to be unsuccessful.

On smaller (1–5 ha) plots animal traction is often used for plowing and some weeding. Cattle-drawn sledges are being used for water transport but donkey carts are very rare. It was estimated that about 50% of the farmers in the entire area used animal power for plowing.

Those that hired tractors often used animals for subsequent operations and for transport. Cattle were preferred to donkeys, as they were multipurpose and provided milk. Oxen were the work animals of choice, but people also used cows to make up a span.

Some farmers in the vicinity of the research farm who used cattle had formed a group who plow land together with up to four spans of oxen (with four plows). They work together to achieve rapid plowing of one farm and then move on to the land of another farmer. The farmers often broadcast the seeds and therefore cannot weed with animal traction. Plowing with a tractor would cost approximately R 150/ha and with animal traction R 50/ha.

One farmer who uses donkeys for plowing was visited. He plows about 1.5 ha with his donkeys, but weeds by hand as he has no cultivator. He uses donkeys as he cannot afford oxen (the donkeys cost R 100 each). Advantages of donkeys included lack of health problems and ability to survive whatever the conditions. The female (which worked with the males) gave a foal each year. The farmer had an old cart, but needed one in working order, and he could make money hiring it out. He knew of no source of cart nor of credit with which to buy it. His donkeys pulled a sledge to carry water.

Another farmer visited had about 18 ha of land, 10 ha of which he plowed with his three spans of oxen. As he had no cultivator, weeding was done by hired hand labour (which cost him about R 800 in 1994), but the quality was good as the labourers cleaned within the rows as well as between the rows. The system of payment for animal plowing is based on the width of the plowed strip rather than its length or area.

The use of animal power in the Makhathini area has been discussed in some detail by Derman and Poultney (1987). They noted that while the cattle population in the area remained fairly constant at about 65 000 between 1930 and 1958, the human population had doubled in this time, and therefore the proportion of farmers able to own a full plowing team has tended to drop. Between 1978 and 1986 the proportion of farmers controlling four working cattle dropped from 17% to 14%. However, animal power use was much greater than this percentage implies, for each plowing team serviced several families through cash hire, exchange labour or family obligations.

#### *Mabedlana Region*

In the Mabedlana Region it was reported that cattle are still frequently used in the Ingwavuma, Nongoma and Ngotshe Districts, but the use of donkeys is quite rare. There seems to be an increase in the use of wheelbarrows for water transport. In the Simdlangentsha District the use of tractors is increasing, attributable to the relatively good land, better infrastructure, availability of water and provision of finance from the Sugar Cane Industries and the Financial Aid Fund. The tractors work faster than oxen and, according to the farmers, plow better and therefore in the sugar cane areas their use can be justified.

There is also a tendency for the working husband to send money to the wife on the farm to hire a tractor. In the Mahlabatini and Simdlangentsha Districts there are tractor associations formed by tractor owners to cooperate and fix work prices.

#### *Ogwini Region*

In the Ogwini Region, the situation seemed similar to that of Mbedlana Region with sugar cane important. Sugar cane production is carried out on 10% of the total number of farms, even on small 1-2 ha plots. Animal traction cannot be used for transport of the sugar cane as the distance to the nearest sugar mills is far (about 30 km). About half of all farmers use tractors for plowing and weed by hand. There seems to be a recent tendency for the men to come back to the farms, due to the unavailability of jobs in the cities. In the lowveld and drier areas donkeys are being used to a small extent.

At the Institute for Natural Resources in Ndundulu it was made clear that some of the trends in this area were similar to those observed in other regions. The human population has expanded significantly, but the number of cattle has declined over the past few years due to drought conditions that have been severe since the early 1980s. There are a lot of contract workers and commuters in the area and at least 80% of the plowing is done by tractor. Donkey carts are very rare in the mountainous parts as well as on the flatter areas. At Mtunzini there are a couple of farmers who use mules in their sugar cane. In Greytown animal traction is used for the carting of wood and garden refuse. According to the head of the local farmers association, tractors are the main power sources for plowing despite the steep gradients. Animal traction is no longer common, although some people cultivate with hand hoes.

Some of the recent changes that have taken place appear quite well documented in the Biyela area. It had been reported that in 1983 about 82% of the land was plowed using oxen (Auerbach, Nichol and Gandar, 1991). In 1987, about 15% of the cattle maintained in the area surveyed were oxen, and although no new data were obtained relating to animal draft usage, it was assumed that draft cattle were still very important (Colvin, 1989). However, both researchers and farmers now say that despite the very hilly terrain, 'most' land is cultivated with tractors.

While some farmers implied that 'no one' used oxen any more, field observations suggested that at least 10-20% of land was cultivated using cattle. The main reasons for the change were said to be drought and inadequate grazing land (reduced cattle numbers and poor condition). There was also the question of increased tractor availability and the feeling that tractors were more modern.

One woman interviewed was initially adamant that no one used oxen anymore in the whole area, but after the interview she admitted that she herself had been plowing with oxen that very morning. She did not wish people to think it was a 'backward' area.

#### *Mpandleni Region*

The Mpandleni Region has six districts, and agricultural officers described them as follows. In Emnambithi District, most plots are 1 ha, and 80% of these are tilled by animal traction. Animals are used for plowing, planting and cultivation. The private contractors charge R 120/ha for plowing.

Msinga district is in the lowveld and very hilly. The donkey population is very large. The area is very dry with a low annual rainfall. According to estimates by one extension officer animal traction accounts for at least 65% of the tillage. Pack donkeys are used to transport water.

In Nqutu District, there is better soil but still at least 30% of the farmers use animal traction. Many families in Estcourt District depend on employment rather than agriculture (the economy has many peri-urban characteristics) and only 10% of the farmers use animal traction. Many of the small 1 ha plots are kept going by the money sent home by working men. Madadeni District has private ownership of land, and much is rented out to informal settlers as a means of income. In Bergville District about 20% of farmers use animal traction, mainly oxen and a few donkeys.

#### *Umzansi Region*

Umzansi Region to the south of KwaZulu consists of seven districts. Agricultural officers reported the following observations. In Umbumbulu District sugar cane is very common and therefore the use of animal traction is very low. The more sugar cane is planted, the less grazing there is for animals. As animals decrease, more land is planted with cane. A little cultivation and weeding is done



*Two donkeys with locally-made harnesses pulling cart made from old vehicle, KwaZulu-Natal*

using animal power, but planting is done by hand. In Izingolweni District sugar cane is rare, and at least 50% of the farmers make use of animal power. Mostly the plots are 1-4 ha. About 25% of the farmers have ox-drawn weeders. Tractor transport is very common here and is a big source of income. Only 2% of the farmers who own tractors have not fully paid them off. There are a number of reservoirs, boreholes and taps which makes water transport by animal power unnecessary.

In Vulamehlo and Mpumalanga Districts it was thought that little animal traction was being used, partly due to the social unrest. Umzumbe District illustrates many of the features of animal traction in KwaZulu. Part of this district is close to the coast where sugar cane is produced, and here 20-30% of the farmers use animal traction. In the more inland areas, away from the profit of sugar cane, at least 70% of all farmers use animal traction. It was estimated that at least 60% of farmers in Vulindlela District and at least 50% of farmers in Hlanganani District use animal power.

#### **Relevant literature**

Several research studies have highlighted the importance of draft animal power in KwaZulu. In one study it was found that while most farmers surveyed considered the main role of cattle was for family milk production, many other functions were also important including *lobola*, sales, meat and draft power (Tapson and Rose, 1984). About 40% of farmers owned some work oxen, but only 11-25% owned at

least four oxen (sufficient for the normal plowing span), suggesting a shortage of draft power even at this time. One problem is that while the number of families has increased, the number of cattle has remained fairly constant (limited ecologically and sometimes politically). This has meant that the proportion of farmers able to own a full plowing team has tended to decrease (Derman and Poultney, 1987).

One study reviewed survey data from 1981-83 and concluded that about 70% of arable land in KwaZulu at that time was plowed with oxen (Auerbach, Nichol and Gandar, 1991). In Nhlanguwini (Umzumbe District, to the south), 85% of farmers used draft animals for some tillage (7% hand hoes, 8% tractors, 24% tractors in combination with draft animals and 61% draft animals). The survey found that 49% of farmers owned ox plows and 61% of cultivated land was plowed using oxen. In Biyela (Ogwini Region, to the east) 82% of the land was plowed using oxen. Although farmers complained about the condition of their animals at the end of the dry season, there was no absolute shortage of animal draft power, based on the total population of cattle (Auerbach, Nichol and Gandar, 1991).

Despite repeated cataclysmic warnings of the dangers of overstocking, overgrazing and pasture degradation from the agricultural authorities over the years, there have been those willing to argue that the general cattle-keeping strategy of the rural population has been



*Manure spreading from hitch-cart and trailer, Ballina Farm, KwaZulu-Natal*

effective and logical, given the aspirations of the people and the environmental constraints (Tapson, 1991). Irreversible degradation of the pasture is not inevitable (Shackleton, 1993).

Eland were apparently used for work on a trial basis in the early years of this century around Giant's Castle, Estcourt. According to reports eland were good riding animals and could pull wagons (Moe, 1915; Symons, 1915). Apparently, to the obvious regret of those reporting the information, the work was not continued.

## **Natal**

### ***University of Natal***

Staff and students of the University of Natal have undertaken several research studies on rural farming systems and these have included discussion of animal power issues. The Institute of Natural Resources has been involved in the implementation of a development programme at Biyela, KwaZulu. One study by the Institute of Natural Resources discusses draft power issues, concentrating on tractors but giving some information on animal traction usage (Auerbach, Nichol and Gandar, 1991). Another study, published by the Energy Policy Research and Training Project (EPRET) of the University of Cape Town includes an assessment of draft animal power in the context of smallholder energy requirements (Auerbach and Gandar, 1994). Team members participated in a seminar on animal traction at the Institute of Natural Resources, and the University of Natal staff present indicated significant interest in the topic.

### ***Cedara Agricultural Development Institute***

At Cedara, near Pietermaritzburg there is an Agricultural Development Institute and Agricultural College. The College has been orientated towards large-scale farming systems rather than smallholder farmers. Some of the staff of the Institute are working on smallholder production systems, and at least one was concerned with animal traction research (Fowler, 1995).

The survey team gave a seminar on animal traction to staff of the College and Institute, which provoked much discussion. The impression given was that the majority of staff at Cedara (who were all 'white') thought that animal traction was an old-fashioned technology that had virtually died out in South Africa, and which had little or no relevance in the future. However, a small but influential minority of staff felt that animal traction was very important in South Africa, and that agricultural research and training institutes, such as Cedara, should address the topic.

### ***Ballina Farm***

The largest breeding herd of heavy draft horses in Africa is kept on the 435 ha Ballina dairy farm near Mooiriver in KwaZulu-Natal. The horses are mainly Percherons (23) and Shires (15). Only 6-10 are regularly used for work, with the others maintained for breeding. The farm, situated in rolling hills with abundant water, depends on the work horses, and the owner estimates that he saves at least R 100 000 per year in direct machinery expenditure. Furthermore the horses are 'self-financing' in that sale of horse progeny covers the entire horse operation.



*Shire hores used for regular on-farm transport, Ballina Farm, KwaZulu Natal*

Using horses for most farm transport and power, the owner has developed an intensive but ecologically-sensitive irrigated mixed farming system making much use of organic manures. He claims to have more than trebled the agricultural output of the farm compared to previous owners (who used tractor power, chemicals, less suitable pasture grasses and less rotation). The horses are used for tasks such as slurry dam building, manure spreading, a little plowing and transport. There are two tractors on the farm which are used for operations which require high power such as plowing and harrowing. It is estimated that these tractors work for about 500 hours per year.

A range of agricultural implements (some designed for tractor use) including seeders and

fertiliser spreaders can be attached to a two-wheel hitch cart. This has a bench seat for the operator(s) and is drawn by two horses. Breastband harnesses are employed.

Two specific examples were given on the usefulness and 'cheapness' of these horses. The first was the slurry dam that was built using the horses and a scoop for an estimated cost of R 0.50 per cubic metre. Hiring a contractor with machinery would have cost R 6 per cubic metre. The second example was the horse-drawn manure spreader which the owner built from scrap for R 50, while his neighbour bought a tractor-drawn spreader for R 30 000 and this was pulled by a 55 kW tractor. The owner is convinced that his animals are highly profitable, and that without them he would have gone bankrupt long ago.

# Eastern Cape Province

## Transkei

### *Geography and overview*

The topography of Transkei is generally hilly, sometimes mountainous, particularly in the north and the east, with a flat coastal area in the south. There are few major towns. Much of Transkei could be classified as 'remote rural'.

The main animal traction activities are weeding, planting and transport. It is estimated that 40-80% of the farmers use animal traction for weeding and planting. At least 30% of the population uses animal power for plowing. There are some areas where there are no tractors available. Cattle are often used for plowing, transport and some weeding. Cattle are worked in spans of 4-8 animals.

In the more remote areas donkeys are used mainly for transport and a little plowing. Even though the donkey is looked upon as a poor person's animal in Transkei the price of donkeys is much higher than in other parts of the country at R 100-200 each. There was an attempt to discourage the people from using donkeys by taxing them at five times the rate of oxen (R 5 per head for cattle, R 25 per head for donkeys). Although this legislation was enacted, it was seldom enforced rigorously. The last payments were said to have been made in 1988.

Mules are not uncommon and used for transport as well as for weeding. Farmers sometimes span four oxen and one mule for transport. Sledges are common, but carts are quite rare, and difficult to obtain. Cart builders are few and charge R 500-700 for a two-wheel cart.

In Transkei there have not been any strong policies against animal traction. However, animal power has tended to be discouraged by a major tractor supply programme and by the so-called 'betterment schemes' which have involved 'rationalisation' of land use with grazing restrictions.

### *Authorities*

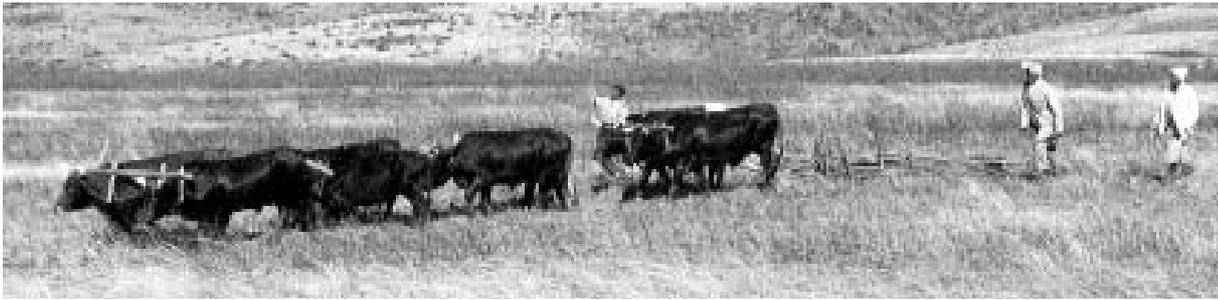
In Transkei about 100 people were interviewed, including farmers and representatives of the Department of Agriculture, Transkei Agricultural Corporation (Tracor), Transkei Agricultural Bank, Transkei Appropriate Technology Unit (TATU), a tractor firm and an NGO (ACAT).

The Department of Agriculture started its subsidised mechanisation programme in the 1970s with the importation of many tractors, mainly from Austria. The mechanisation programme led to a definite decline in the use of animal traction. The government faced serious problems in trying to maintain its fleet of tractors on which the farmers had come to depend. Therefore it decided to sell the tractors to potential contractors, sometimes to the driver. Since 1983 at least 2000 of the government tractors have been sold, of which only about 35% to 40% are still working.

It is estimated by the officials though that even if most plowing is done by tractor (80% of all plowing was mentioned as an estimate) a very large number of farmers still use animal traction for weeding and planting. However, if tractors are unavailable, farmers now increasingly leave the land fallow, rather than using animal traction.

For many years, the authorities have been developing a policy called 'betterment', involving land-use planning and consolidation. According to this policy some of the villages and towns are selected for upgrading. In the planning process different areas are demarcated for cropping and for pasture, and the necessary infrastructure of fences, roads and water is provided. In most cases donkeys and goats are removed completely from the area and the number of cattle is heavily restricted. When the scheme was implemented there were some areas (notably the north-eastern coastal areas) that resisted the policy. Nowadays almost 90% of Transkei towns and villages are said to be involved in the scheme. Consolidation of cropping areas makes tractorisation more efficient, and restriction of animal numbers reduces the animals available for plowing. However, cattle numbers appear to be sufficient for much of the weeding.

Tracor has recently been promoting animal traction. It organised a workshop on this subject, which was well-attended by professionals, and received a speech from an African National Congress (ANC) politician (agricultural commissioner) that was highly positive about animal traction. Tracor has recently started a small mule breeding station. This has 13 horse mares (Friesian, from Salique, Lebowa) and two Spanish donkeys.



*Eight oxen pulling load of wood on a flat sledge, Eastern Cape (Transkei)*

There is likely to be strong demand for the small number of mules that will be produced (Yoba, 1994).

The Transkei Agricultural Bank in Umtata specialises in the small farmer sector and does not cater for large commercial farmers. The Bank finances farmers with pieces of land bigger than 5 ha but also advises and helps people with less land to form groups that will then work together. About 15% of their loans are for tractors, mainly second-hand machines bought from the government at a subsidised price (eg, R 24 000). The Bank bases its calculations on 200 work hours per tractor per season. Money is lent to farmers at a subsidised interest rate of 13.7%. The spokesman mentioned that the Bank is more than willing to lend money to farmers buying animal traction equipment and draft animals, but that there has been no demand.

### ***Farmers and field visits***

#### *Umtata*

In the central, mainly peri-urban Umtata region, Sakhela Village was visited. Here it is quite common to mix different draft animals. There was an ox cart being pulled by one mule leading four oxen. The mule increases the speed of walking, while the oxen are better at braking the cart or sledge than the mule. Mules are more abundant in Transkei than in any other area visited. The price of a mule is between R 1500 and R 2000. The only problem with the mules seems to be their unavailability, which

will partly be helped by the Tracor mule breeding unit. The mules are used mainly for transport and weeding and some planting. Carts are scarce but there are farmers that manufacture them from wood and old car axles. A cart costs R 600, provided the farmer supplies an axle, which is not always easy.

Many farmers in Sakhela use tractors for plowing but some use spans of four oxen and one mule. Whether people plow with tractors or animals, most plant and weed with animals. Only one person in the area was known to weed with a tractor. Plowing with a tractor costs R 70 per hour if using a private contractor while Tracor charges R 180/ha. In the 1950s there was a drive to castrate all male donkeys but this was never carried out.

The Ngqunge Farmers' Association was formed in 1990 by a group of retrenched workers who decided to use heavy draft horses (Percherons and Shires) for farming and for transport operations. They obtained credit to purchase several horses. Heavy horses were chosen as they were thought to be more effective and 'modern' than cattle, and cheaper than tractors. It was considered uneconomic to hire tractors from local contractors who charged R 230/ha for plowing. Ironically, a key figure in the association is the local storekeeper and businessman who himself owns an old tractor, but he has found it uneconomical to hire the tractor out (he therefore just uses it on his own 3.5 ha and for a little transport).

*Eight oxen pulling a load of maize on a sledge incorporating a basket container, Eastern Cape (Transkei)*





*Oxen pulling cart carrying water  
Eastern Cape (Transkei)*



*One of the Percheron horses bought by a farmers' group, Eastern Cape (Transkei)*

Members of the association recently purchased two Shires and four Percherons. The horses were bought for about R 4000 each and strong, four-wheel wagons cost R 8000. Harnesses were about R 800-1000 per animal. The use of heavy horses in Transkei is quite innovative, and it has yet to be established how easy it will be for the small-scale farmer to feed and manage such animals. Members of the association are in close contact with SANAT and some other users of heavy horses.

In another area in central Transkei it seemed that 80% of the plowing is done by private tractor contractors charging R 180 per hour. Mules, cattle and donkeys are used in the area but mules are by far the most important. They are used for a little plowing, weeding and planting as well as for transport, again by being ridden or pulling a cart together with four oxen. The price of a mule in this area is R 800. Six cattle are spanned for plowing and two draw a planter. Animals are also used for weeding and dragging firewood.

#### *Lusikisiki*

The Lusikisiki area is much more rural than the two previous areas mentioned and is situated more towards the coast and between rolling hills. The area has been a cattle-using area, but farmers reported that pasture quality had been declining over the years and cattle no longer thrived. The first donkeys were introduced to the area about 20 years ago by one farmer. He still uses four donkeys for plowing and two for weeding and planting. As cattle survival has become increasingly difficult, the number of donkeys has been slowly increasing. The price of donkeys in this area is one of the highest in the country at R 100 to R 200 each. One farmer interviewed was using a specially-designed donkey cart with two wheels and three shafts.

He spans two donkeys between the shafts, and two in front of them. He argues that the design allows the donkeys to brake the cart easily, and the weight of the cart is on the backs of the donkey, not on their necks. For added comfort, he wraps the donkey harnesses in soft foam. It is not certain where the idea comes from and nobody else has yet copied it. The man hires his cart out for transporting goods such as groceries, crops, water and manure at a price of R 30 per load. Another farmer interviewed owns four mules which he uses for plowing for himself but he also hires them out to others at a rate of R 50/ha. Carts are quite common and cost R 800 to build.

#### *Engcobo*

In the area of Engcobo (a small town situated in the western part of Transkei) the situation appears to be the same as in Lusikisiki. There are no tractors available for plowing and therefore the farmers still use mainly donkeys and cattle for plowing and weeding and horses and mules for weeding and planting. There are also many carts in the region which are manufactured by some farmers. It costs R 700 to build a cart using an old car axle.

#### *Qamata*

In the Qamata area (on the western edge of Transkei) tractors owned by Tracor are quite commonly available and plow for R 180/ha. However animal traction is still widely used. Most of the farms are 2 ha in size. Cattle were mainly spanned for plowing in teams of six or eight. Until fairly recently very few donkeys or mules were used or available, but they are increasing quite rapidly. Animal traction is widely used for transport, weeding and planting. Mules were said to be available in the town of Butterworth (90 km away).



*Locally made donkey cart with three shafts  
Eastern Cape (Transkei)*



*Youth with two mules pulling cart  
Eastern Cape (Transkei)*

### *ACAT*

The African Cooperative Action Trust (ACAT) is a non-governmental organisation active in the Transkei, with a local office situated outside Umtata. The main task of ACAT is to form savings clubs for the small farmers. The representative of ACAT said that at least 60% of the farmers in Transkei still use animal traction for weeding, planting and transport. The majority of the farmers plow with tractors. It was also said that if the drought continues more farmers will resort to the use of tractors because more animals will die. More horses and donkeys will be seen.

### *TATU*

The Transkei Appropriate Technology Unit (TATU) is a government-funded autonomous organisation with rural development goals. It has not been active in the field of animal traction, as it was under the impression that most farmers were using tractors. On reflection, staff estimated that at least 40% to 50% of the farmers in the more rural areas were still using animal traction. TATU was unaware of important demands in this field, for example relating to animal-drawn carts. TATU would be prepared to cooperate in a programme relating to animal traction, although it did not have specific expertise in this field.

### *Fedmech*

Fedmech is a Massey Ferguson company which, with the support of an eight-year government contract, has established a sales and repair unit in the town of Bizana in the north-eastern part of Transkei. The money was provided by the South African Department of Foreign Affairs and the aim was to provide and maintain 150 Massey Ferguson tractors in the northern part of Transkei (150 other tractors were to be provided and maintained in the

southern part of Transkei by Malcomess Landini). Since 1993 they have sold most of their tractors to local farmers and are keeping only 48 for irrigation and soil conservation works. They also sell rehabilitated tractors. Until 1986, Fedmech manufactured and sold 'Safim' animal traction equipment.

It was said that in the Bizana, Lusikisiki area, where there was enough rain and good soils, there were a few farmers who owned two or more tractors and used them for contract plowing on the 1-5 ha plots in the area. Most of the contractors were public service or army pensioners. The contractors obtained some funds during the non-plowing season by doing a little transport work and by drawing up contracts for the coming plowing season, for which deposits were charged.

### *Lima Project Survey*

In 1988, the Lima Community Development Association in Mqanduli District, with support of World Vision South Africa, commissioned a base-line study, in which interviews were held with a stratified sample of 240 households in eight areas (ARDRI, 1989). Of the households surveyed, 78% used animal traction and 42% owned draft animals. Of the cattle population, 28% were oxen. Tractor availability was low, averaging one tractor per 1250 ha planted, yet provision of tractors was not a major priority under 'felt needs'. Although only 12% of households owned planters, 59% used them, indicating a high level of local hiring or borrowing. Similarly 19% owned animal-drawn weeders but 39% used them (ARDRI, 1989).

## **Ciskei**

### *Geography and overview*

Ciskei can be broadly divided into two different geographical areas: the flatter coastal area and

the inland area of undulating hills and mountains. In the more flat, arable areas of Ciskei, especially near the coast, there are a number of large irrigation schemes with 30-100 ha commercial farms, using government-supported tractor mechanisation. Here animal traction is little used. The amount of animal traction increases as one moves inland and in some areas is very important, despite constraints such as peri-urban settlements, hilly topography, drought and previous government policies.

Cattle are the main animals employed for plowing (4-8 per span), planting and weeding. Oxen also pull sledges and a few carts. Horses are mainly ridden, but are sometimes used for weeding and occasionally for plowing. Donkeys are mainly employed as pack animals and for dragging wood. According to the 1992 census there were 130 000 cattle and 2800 donkeys, mules and horses in Ciskei.

#### *Historical overview*

In previous years, most small-scale farming in Ciskei made extensive use of ox-drawn equipment for plowing, cultivating transport and dam cleaning. Historically, horses have been regarded as status symbols, used mainly for personal transport by males. A small population of donkeys was maintained, primarily to pull carts.

In 1981 the government authorities greatly increased the scope of its Mechanisation Unit, adding 100 tractors. The Unit was to offer tractor services to all farmers, charging them below the actual cost of the service. This was popular with farmers because it reduced drudgery and their animals did not lose condition as they had done when plowing.

From the introduction of the mechanisation service deep plowing with tractors was encouraged and extension advice on animal traction fell away. In many seasons the Mechanisation Unit was unable to plow for all the farmers that paid for plowing and was regarded as unreliable for other operations such as planting and weeding. Because of this the use of oxen did not die out but their use for plowing decreased considerably. A simple survey carried out at this time indicated that most people had experience with using oxen. Most respondents liked tractor plowing if they could obtain it, although they were worried about its cost and availability. Even if they used tractors for plowing, the majority of

respondents used animals for planting and weeding (Rose, Williams and Ndawo, undated).

In 1992 the Mechanisation Unit was terminated abruptly and 40 tractors were sold to private individuals for contracting. By 1994, private contractors with working tractors increased from fewer than 50 to just over 300. The cost of plowing increased from the last government charge of R 65/ha to the contractors' average charge of R 175/ha towards the end of 1993. Over this period there was a noticeable increase in the use of animals for tillage. At the same time there was a reduction in the total area plowed, partly because of the drought.

#### *Authorities*

The Director-General of Agriculture and Forestry welcomed the survey team and supported increased emphasis on the use of animal traction. It was clear that smallholder farmers could not afford to pay the contractors' rate for tractors (R 185/ha for plowing alone).

The Ciskei Agricultural Corporation (Ulimocor) administers the large irrigation schemes in Ciskei, including those growing citrus and pineapple. Farms range from 30 to 100 ha and Ulimocor policy is to provide high technology mechanisation services to all scheme farmers. The farms are close together and plowed all at once by Ulimocor for the subsidised price of R 125/ha. Animal traction is not included in their work, but on one of their schemes farmers themselves use private donkeys for transport. Apparently some Ulimocor-managed farms may be divided into smaller 3-6 ha units on which animal traction could be considered.

The Ciskei Agricultural Bank has funded the purchase of tractors and implements. The bank has 20-30 farmers with loans on tractors. Apparently these people have an 80% default

*Farmer with seeder, yokes and other ox equipment, Eastern Cape (Ciskei)*





*Four oxen plowing, Eastern Cape (Ciskei)*

on their payments, and the past default rate in repayments on tractors has been approximately 50%. In principle, the bank could give loans for draft animals and animal-drawn equipment provided farmers meet the requirements of 10% deposit and 20% collateral with a minimum loan of R 100. To date, there has been no demand for animal draft power loans (there has been no publicity or promotion relating to this).

### ***Farmers and field visits***

#### *Machibi, Mount Coke, Zwelitsha District*

Annual rainfall is 600-650 mm. Most villagers grow crops, mainly maize. They nearly all use oxen for plowing, planting and cultivating. When the Mechanisation Unit was in existence, villagers used tractors, mainly for plowing. Tractors were also used for carting manure to the fields and whole crops, including stalks, to the village. Now that the Mechanisation Unit is no longer available most of the farmers use animals for plowing and hire a truck for carting manure and crops. Most farmers have an animal-drawn sledge, used to carry implements to and from the lands. A cart was looked upon as desirable but too expensive. The farmers were prepared to swap an ox for a cart.

Farmers used 4 or 6 oxen to plow and expected to take 3 days to plow a hectare with 6 oxen. Labour for working with the oxen is not short because of lack of jobs in towns. Wives and daughters help to inspan oxen and there are a few women who drive the oxen themselves. Not all farmers have planters and cultivators. They hire these for R 5 per day. A cart could be hired for R 4 per day. To assist those who do not have oxen, neighbours would plow for R 15

per day. It is normal practice to use longer yokes for planting and cultivating. Arable land holdings are about 2 ha per person.

One farmer has horses, which he uses one at a time to plow and swaps when they get tired. There is a person in the village who makes donkey and horse harnesses. The farmers learnt all their animal traction skills from their parents. It has been difficult to get spare parts since the closure of the Ciskei Agricultural Cooperative in King William's Town. Farmers now have to travel to East London to buy parts which is expensive and takes a whole day. One of the problems with using animal traction is training the animals. They normally start when the animals are two or three years old.

Oxen, at the age of four teeth, cost R 600 to R 800. Horses cost R 400. Donkeys are not usually bought and sold. Donkeys are not widely used for cultivation as they are found to be uncontrollable when they are tired and so will not pull together.

*Ox-drawn sledge with drum, Eastern Cape (Ciskei)*



*Cata, Keiskammahoek District*

In this village, with annual rainfall 800-900 mm all the farmers use oxen for crop production. Land holdings are about 1 ha of irrigated land per person. The main crop is maize. Pumpkins, peas and potatoes are also grown. Among the villagers interviewed, five farmers owned animals, including eight oxen and 13 cows. There is widespread use of cows for draft purposes. Animals are used two or four at a time. Sons of farmers may work the oxen, but in this village women or girls never work with animals as there are enough men and boys. In past years, donkeys were prohibited in the area, but although the law has not changed, it is no longer enforced.

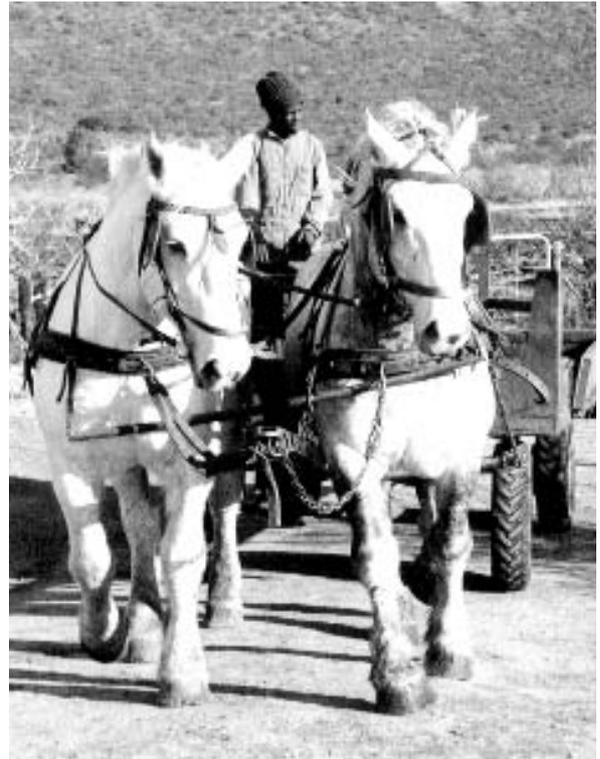
None of the group interviewed owned donkeys or horses, but some other farmers in the village use donkeys for transporting water using sledges or 20 litre drums carried on the back of the donkeys. Manure, sand and firewood are also carted. All the farmers have sledges. One woman interviewed uses donkeys for water transport for domestic use and for neighbours. She hangs two 25 litre drums over the back of the donkey and by carrying water she can earn up to R 28 per day.

There are no problems with animal-drawn equipment that the farmers cannot sort out themselves. Spare parts are available in Keiskammahoek, but they are expensive. Health problems with the animals are rare. Farmers use some traditional remedies but rely mostly on animal health officers.

The farmers have to pay R 160-200 per ha for contract plowing by tractor. Some hire oxen to plow for them at R 50–100/ha. Those with adequate oxen plow for others and some do share cropping. In the group, three people hired a tractor to do an initial plowing and two of them then plowed again with oxen. One farmer who has one ox works with a friend who also has an ox and they do all operations together on both holdings. One of the farmers hired a tractor to plant as well. All the farmers regarded the non-availability of government or private tractors in the community as a problem.

*Upper Mnyameni, Keiskammahoek District*

This village (annual rainfall 800-900 mm) is situated in hilly terrain with rocky lands. It has arable fields of only 0.5 ha per person. Cattle are very important traditionally, and in addition to providing milk, meat, manure and work, they are used in relation to funerals, unveiling of



*Percheron horses used regularly for transport on a large-scale farm, Eastern Cape*

tombstones, tributes to ancestors, weddings and initiations.

Cattle, donkeys and horses are used in the village, with oxen by far the most important. One person in the village has horses and uses them two-at-a-time to draw a cart, cultivate and plow. The donkey population is static but cattle are beginning to increase slightly since the drought.

Cows are rarely used for work. Oxen are preferred to donkeys, being considered faster and more intelligent. It is mainly children who use the donkeys for transporting sand, wood and maize and for riding. Oxen are used for plowing (spans of four or six) and for dragging bushes for kraals and transporting harvests using sledges.

Women assist or work together with the men when using oxen. Teenagers are taught how to use oxen and how to plow by older members of the community. No farmer interviewed had an animal-drawn seeder.

Transport of water is not required in this village. There are a few animal-drawn carts around being pulled by horses, but donkey carts are rare, possibly due to the hilliness of the area. Tractors with trailers are often hired when



*Commercial forestry logging using a Percheron horse, Eastern Cape*



*Small-scale timber extraction and log delivery using donkeys, Eastern Cape*

transport is required and may cost the farmer up to R 80 per load. Some farmers hire their ox carts out for R 50 per load. They can make up to four trips per day.

There are no tractors in the village. Those farmers who plow with tractors hire them from a group of tractor owners called *Tracta* in Keiskammahok. They charge R 160/ha. After tractor plowing, farmers use oxen for other operations. None of the five farmers in the group interviewed had recently hired a tractor for plowing.

#### *Kamastone Village, Hewu District*

In this arid area (rainfall 400 mm) arable land holdings are about 2.5 ha. Work animals have been widely used in the area, but donkeys were destroyed some years ago at the instigation of the agricultural department. Horses are mainly used for riding, to escort bridal couples and for gymkhana competitions. Cattle have been badly depleted by droughts. In the group of six farmers interviewed, all oxen were either too young or too weak to be worked.

Much less land is cropped now compared to when government tractors were readily available. Most farmers hire private tractors to plow at R 300 per arable unit of 2.5 ha. One or two farmers in the village plow with oxen. Whether or not tractors are used for plowing, most other operations are carried out using oxen and hand labour. In the group interviewed, two farmers hired tractor-drawn planters and five used ox-drawn planters (one farmer owned a planter and four borrowed). When they had oxen they used six or eight to plow. They all still use oxen to cultivate using a 3-tine

cultivator drawn by two oxen unless they are weak when they use four.

The old people know how to use oxen and have the equipment but do not use it, because of the problem of animals. They say that they are now too old to train new oxen, but the young people are not interested in farming (“The young are only interested in football”). Custom is against women using cattle but there are some exceptions and custom is changing. It was normally the women’s duty to hoe, to protect the crop and to reap. However, there was a woman in the group who knew how to use oxen and plow.

Water taps are available in the village for domestic use but when the engine fails villagers have to cart water on their heads. One person has an old-style four-wheel ox wagon, but as there has been no blacksmith to repair it, it is now derelict. Some people have ox carts which they use to collect firewood, cart manure to the lands and to collect maize from fields. Carts are hired out at R 50 per load when ox-drawn and R 60 per load for a tractor and trailer. It is difficult to obtain ox carts. Two members of the group said they would be happy to swap an ox for a scotch cart, which they would use to hire out to others farmers with working oxen.

#### *Suppliers of animal-drawn equipment*

The main wholesalers to Ciskei and Transkei are McLaren Farm Implements. Burmeisters in East London is a major supplier and distributor, with sales representatives travelling to stores throughout Ciskei and Transkei selling ox plows, cultivators and planters manufactured in South Africa. A wide range of spare parts is sold, as well as some yokes and chains. Bridles

and harnesses for both donkeys and horses were available. Burmeisters reported a small but steady increase in sales over the last ten years.

#### *Whittlesea, Hewu District*

At Henge's Store in Whittlesea, a four-wheel wagon pulled by two white Percheron horses is used for local deliveries. The store manager said that the horses cost less to own and operate than a *bakkie* truck. The store owns six horses and uses each pair every third day. Professionally-made leather harnesses are used. No problems were reported concerning the management and use of the horses.

#### *University of Fort Hare*

The University of Fort Hare has not included animal traction as part of its syllabuses for many years. However, some staff, notably those of the Agricultural Rural Development Research Institute (ARDRI) have undertaken a number of studies over the years that have included some information on animal power (Tapson and Rose, 1984; Rose, Williams and Ndawo, undated; Bembridge, 1987; ARDRI, 1988; ARDRI, 1989; Joubert, 1995).

The University of Fort Hare has recently established a small animal traction centre which it uses for training and research. During 1994, the centre's technician was sent to Zimbabwe for a six-week training course in animal draft power. Five Percheron horses and seven oxen have been acquired. A collection of 'Safim' animal-drawn implements has been donated by Vetsak. Equipment built includes a horse-drawn wagon, an ox cart and a road smoother. A collection of animal traction documents is being assembled.

Draft animals are used on the research farm for transport as well as for harrowing, cultivating

#### *Innovative 'Golovan' ox cart on a large-scale farm, Eastern Cape*



*Percheron horses used regularly for transport for local store deliveries, Eastern Cape*

and rolling lands. They are also used for road maintenance and for hauling wood for farm labourers. A comparative study is being undertaken on the relative costs of tractor and animal power. The innovative 'Golovan' cart (Nel, 1994) developed by a farmer based near Cathcart is being evaluated.

During the second semester of 1994, the first training course in animal traction was offered to degree students and a one-day introductory course was offered to those working for extension diplomas.

Staff of the University of Fort Hare were instrumental in establishing the South Africa Network of Animal Traction (SANAT) which currently has its secretariat based at Fort Hare (Joubert, 1993 and 1994). This SANAT Secretariat was responsible for initiating and coordinating the national animal traction survey reported here.

## **Other areas of Eastern Cape Province**

### *Forestry operations*

Some forestry operators make use of animals for logging. One operator near Hogsback uses a small number of Percheron horses, and claims it is highly profitable. A smaller operator in the same area makes a living by using donkeys for pulling timber and a sledge for hauling cut firewood.



*Span of ten oxen pulling old wooden wagon on a large-scale farm, Eastern Cape*

#### *Large-scale farmers*

A number of large-scale ('white') farmers make use of animal power in the Eastern Cape Province. Near Queenstown, Percheron draft horses are bred and used for on-farm transport for a large piggery and vegetable enterprise.

Another farmer near Cathcart uses crossbred Percheron/thoroughbred horses on his farm for transport. The farmhouse was built from materials transported using his horses and a wagon. A special animal-drawn cart, the 'Golovan', has been developed. This was initially intended for use with a single ox. Designed for the convenient unloading of

materials it has a rear gate that allows items to simply drop to the ground and also allows water drums to be loaded and unloaded easily (Nel, 1994).

Near Alexandria, a few large-scale ('white') farmers use traditional large spans of oxen for work on their farms. One farmer interviewed has a 1000 ha stock farm and uses his span of 10 Afrikaner oxen for plowing, harrowing, planting and weeding the 14 ha of land he uses for fodder production. He has no tractor and uses oxen for all on-farm transport. He believes he would have gone bankrupt if he had tried to purchase a tractor for use on his farm.

*Span of ten oxen pulling disc harrow on a large-scale farm, Eastern Cape*



# Western Cape Province

## *Geography and overview*

Much of the Western Cape comprises flat land with good soils and adequate winter rainfall which is set against a backdrop of high mountain ranges. Most agricultural land is used by large-scale ('white') farmers. Smallholder farming is restricted to very small areas ('coloured reserves'), which have developed in the past century for various historical reasons (eg, churches providing land for smallholder farmers). Many people from the smallholder areas work in towns, or have done so in the past, so even the remoter 'reserve' areas tend to have 'peri-urban' economies and attitudes, with agriculture considered less important than wages, pensions and remittances. Nevertheless, animal traction is important in all the smallholder areas visited.

Horses are most important, and donkeys to a lesser extent. The use of cattle seems to have died out about 35 years ago. The operations being carried out include urban and rural transport (most important), plowing, weeding and ridging. In one area horses are used for mowing, raking and baling. Until fairly recently, some farmers in the wine areas used animal traction to weed between the rows of vines. Although the specialised animal-drawn weeding implements are still to be seen on some farms, in most areas the vines have been replanted to a wider spacing to allow tractors to be used. It was reported there may be some vineyards using draft animals in the Worcester area.

## *Farmers and field visits*

### *Haarlem*

Haarlem is situated near Joubertina, about 500 km from the city of Cape Town, near the boundary with Eastern Cape Province. Smallholder agriculture on 0.5–15 ha farms provides some income to families in Haarlem, although external employment is more important for the overall economy. Crops include fruit trees, potatoes, onions and vegetables, grown under irrigation. The closure of the railway line some years ago made the marketing of farm produce more difficult. A few (5–6) wealthier farmers own tractors, some of which are made available to smaller farmers (relatives and friends), often at low cost. The management board hires out some tractors at a

subsidised price, but smallholder farmers cannot rely on obtaining such services at the required time.

The main work animals are horses and donkeys. Horses are used for pulling carts and some land preparation (plowing, harrowing, ridging and weeding). Donkeys are used mainly for pulling carts. There are a few mules but not as many as in previous years (reportedly now just two) as mules are very difficult to obtain. Many years ago, some farmers used oxen, but now the limited grazing land is used for dairy cows. The use of work cows does not appear to have been considered. A lack of grazing seems to be a problem and buying supplementary feed such as lucerne is too expensive. It was reported that the drought during the period 1990–93 had led to an increase in the use of donkeys.

Haarlem has a Management Board (in past years this was imposed by the government not elected). The board was provided with two tractors (from government funds) which are contracted out to the farmers at just R 40/ha for plowing. Despite the low price, availability is a problem, due to the bottlenecks that occur at plowing time, and influential people (eg, board members) benefit most. The management board had tried to discourage the use of donkeys. It was argued that ten sheep could be grazed on the pasture used by one donkey. In one scheme in the 1960s, older donkeys were branded and had to be culled. Younger animals could be retained, provided they grazed on the plot of the owner. This scheme apparently caused some distress (to those who owned old animals) but ended when the superintendent concerned died.

*Donkey cart, Haarlem, Western Cape*





*Plowing with horses at Buysplaas, Western Cape*

Donkeys were cheap (R 35) but it was difficult and expensive to obtain harnesses for horses and donkeys. Theft of animals was a problem. Spare parts for the basic plows were available in the cooperative, but not in Haarlem itself. Lightweight plows and weeders suitable for single donkeys were not available or known. (Interest in these was expressed.) It was not a major problem to obtain or make two- or four-wheel animal-drawn carts based on old vehicle axles. A farmer can have a cart built for R 300. Haarlem was the first area where the survey team saw lightweight animal-drawn carts made from wood and special lightweight axles with coil springs (not simply old vehicle axles).

### *Buysplaas*

Buysplaas is a small settlement lying within a relatively inhospitable river valley near Albertina, 350 km east of Cape Town. Until recently there was neither electricity nor tapped water. Arable land is neither abundant nor very

fertile, and most families depend on external employment for survival.

Horses and donkeys are used for transport and some cultivation. Horses are particularly important for travel to outside areas for work, and they may be ridden (eg, for sheep farming) or used with lightweight carts along the roads. Small plots of land are farmed to grow garden crops and oats for the horses. Horses pull single-mouldboard plows for such cultivation. The animals and equipment appeared in good condition. Harnesses are increasingly difficult and expensive to obtain. Donkeys are mainly employed for cart transport.

### *Saron*

The settlement of Saron is about 100 km north-east of Cape Town. Many families living there obtain their income from external employment, so that despite the rural setting, the community tends to have more 'peri-urban' than agricultural characteristics. Nevertheless there is some fertile and irrigated agricultural land, some of which is farmed to produce vegetables on 2 ha plots.

Animal traction for crop cultivation (plowing, riding and cultivating) is only used by about three farmers in Saron, but several people own horses for pulling carts. Carts are used for transport to and from the main road, and for farm work. One farmer interviewed has four horses which cost him R 100 per month to keep. Agricultural implements are generally old, and in need of spare parts. Thirty-five years ago, some oxen were employed for cultivation, but these were replaced by horses. There are two mules in the area.

*Hitching a cart and a wagon pulled by horses and mules, Saron, Western Cape*





*Plowing with horses, Ebenhaeser, Western Cape*

Donkeys used to be widely employed for transport (there were at least 200 donkeys only a few years ago), but the management board (and some non-agricultural residents) tried to discourage the ownership of donkeys. It was argued that they were no longer required for work, they reduced the quality and quantity of grazing for other livestock, they caused accidents on roads and they damaged people's gardens. Police would shoot donkeys found at the road side, and numbers declined.

The reduction in animal traction in recent years appears related to the increased levels of wage-employment and associated reduced interest in agriculture (only about 18 farmers cultivate land, although a few years ago 200 plots were cultivated). There is also the problem that animal traction is perceived as old-fashioned and some highly subsidised tractors have been acquired. The management board owns a tractor and sometimes hires it out for R 40 per hour. One group of farmers (with a relatively small land area) has recently acquired two new tractors with money donated by the Japanese government and the Kagiso Trust. These

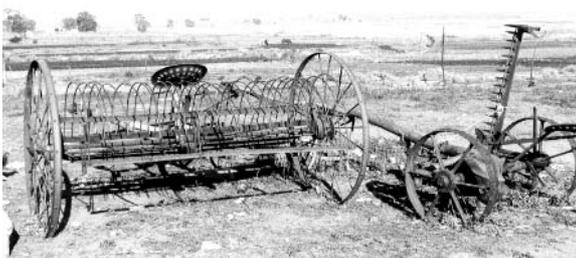
farmers do not presently hire out their tractors, but they have caused the animal-using farmers (cultivating a few hectares) to yearn for their own tractors.

#### *Ebenhaeser*

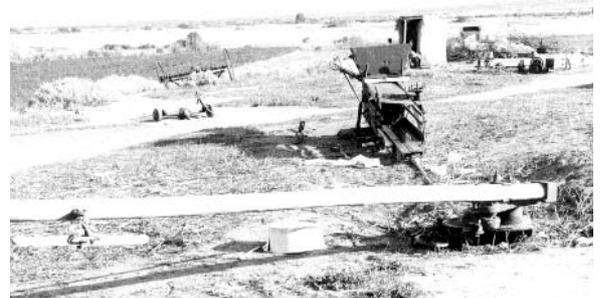
Ebenhaeser is a remote rural community in the north-west of the Western Cape Province. While external employment is important, agriculture still plays a major role in the local economy. There are about 160 farms of about 4-5 ha. Crops include lucerne, beans, coriander and vegetables.

The majority of households appear to employ horses for transport and for cultivation, with perhaps 250 horses in use. There are five tractors in the area (three public sector, two privately owned) but although these are relatively inexpensive to hire (R 30 per hour), problems of availability and timeliness mean that most farmers use horses for tillage. Where tractors are hired, horses are also used in a complementary way for transport and secondary operations.

*Horse-drawn rake and mower used regularly at Ebenhaeser, Western Cape*



*Baling system powered by horses that turn the long shaft, Ebenhaeser, Western Cape*





*Interview with urban transporter outside the University of the Western Cape*

A very wide range of old animal-powered equipment exists, including plows, harrows, planters, hay mowers, hay rakes and earth-moving scoops. Some old animal-powered machines exist for compressing hay bales. Much of the equipment is in need of spare parts and/or replacement. As mowers break down, some farmers have found it difficult to continue growing lucerne. Some farmers hire horses and mowers from others (one farmer suggested that with two assistants and four horses working in teams, he could mow 3 ha a day, earning R 30 per hour).

#### *Elsenburg Agricultural College*

At the Elsenburg Agricultural College near Stellenbosch there is a stud of Percheron draft horses. Genetic material was supplied through French assistance. The infrastructure and the animals are impressive, but the Elsenburg animals are apparently not used for anything

other than shows and for plowing about 8 ha per year for the Tobacco Research Department (because it is 'cheaper' to hire the horses). However, Percherons sold from this stud have been used in many parts of the country for breeding and traction purposes.

#### *Urban transport*

In the vicinity of greater Cape Town, and the surrounding towns and suburbs including Bellville, some horses are used for urban transport, including the collection of scrap. There may be 300-600 horses employed to pull four-wheel carts. There is also a small number of donkeys. Persons contacted stressed the profitability of the system. The animals observed seemed relatively well cared for, and owners reported there were few management or health problems. Provision of harnesses was sometimes a problem.

# Northern Cape Province

## *Geography and overview*

The Northern Cape is an immense province (36 million hectares) with a small rural population (200 000). Only 1.3% of the land is classified as 'arable', and most is considered suitable only for grazing or nature conservation. Much of the land is used by large-scale ('white') ranchers, raising sheep, cattle or indigenous antelopes ('game'). Smallholder farming takes place in widely separated areas in several parts of the province. Most smallholder cultivation is found in Namaqualand in the west, and here donkeys are commonly used for both transport and cultivation. Elsewhere smallholder farming tends to be concentrated in much smaller 'coloured reserves' or church farms, for example, at Pella (near Pofadder) and Oppermansgrond and Pniel (near Kimberley), the latter being part of the Vaalharts irrigation scheme. In such areas, donkeys have been quite commonly used for transport and in some cases for cultivation. In Oppermansgrond, where 110 farmers cultivate about 300 ha, the use of donkeys for cultivation declined in the 1980s after management board tractors became increasingly available.

In Gordonia District, donkeys are important for local transport. Along parts of the Orange River, notably near Keimoes and at the Lower Orange River Irrigation Scheme, donkeys are widely used for cultivation as well. They undertake autumn and spring plowing as well as harrowing, planting and cultivating. They are also important for transporting water, wood, crops, manure and fodder. In the town of Upington, local commercial farmers (mainly 'white' grape producers) and townspeople have even erected a life-size bronze sculpture of a donkey to commemorate the contribution of donkeys in the construction and implementation of the major irrigation works in the area.

Elsewhere in the Northern Cape, donkeys (and to a lesser extent horses) are quite commonly used for rural transport, for example, by workers resident on or near the large ranches and by the 'nomads' (itinerant seasonal labourers and their families).

## *Namaqualand*

In Namaqualand, job opportunities are few, and farming is economically important for many local people. Donkeys are the main work animals in areas of smallholder farming such as Spoegrivier. The majority of smallholders appear to own donkey carts, either two-wheel carts or four-wheel wagons. Some farmers owned more than one cart. Carts were used mainly for personal transport and shopping, and for carrying goods such as firewood, water and building materials. Carts are generally pulled by two or four donkeys. The use of carts varies between families and seasons, but many are used at least twice a week, throughout the year.

In the farming systems of Namaqualand, small grain crops (eg, wheat, oats, rye) are cultivated. Tractors are not readily available to, or affordable by, smallholder farmers. Most smallholder farmers appear to till the land using donkey-drawn plows. A particular type of plow is used around Spoegrivier: a three-furrow plow labelled as E6-24 RSL (Rud Sack Leipzig). These plows are pulled, without obvious strain, by teams of 6-8 donkeys. The results achieved in the relatively light soils appear to be of good and even quality. Donkeys were said to be used about five times a week during the plowing season. They could work for 5-6 hours a day (in two shifts), plowing about half a hectare per day.

Farmers appeared unanimous that it was very difficult to obtain plow spares such as wheel bushes. Shares that fitted the plows could be



*Farmer skilled in the making and repairing of leather harnesses (left) and an example of a locally-made leather donkey harness (right) Northern Cape (Namaqualand)*





*Plowing with six donkeys, Northern Cape (Namaqualand)*

bought through the local cooperative, but their quality was considered poor. Some farmers expressed great interest in the possibility of obtaining new, replacement donkey plows.

Since the 1950s, the management authorities had been expressing concern that there were excessive donkeys in the area, and they tried to encourage their disposal. Sometimes donkeys had to be brought in to a central area, and any unclaimed donkeys were trucked out. Attempts by the management authorities to divide the land into 'economic units' had reduced the land available for cultivation and grazing by the smaller farmers (those most likely to benefit from donkey power).

Donkey-using farmers were adamant that there was no surplus of donkeys. Some farmers were said to be too poor to own any, and several farmers interviewed did not have enough donkeys of their own, and so had to borrow donkeys from relatives or friends to make up their teams. Even donkeys that were grazing the veld away from the village were not wild, but had owners (and names). If a donkey were to die (or be stolen/killed), there was no pool of unowned donkeys from where a replacement could be obtained. Donkeys had to be purchased through negotiation, possibly from a neighbouring village or area and were sold for between R 30 and R 50. Donkeys could work for twenty years or more. Old donkeys that were not used were sold, sometimes to visiting lorries that purchased them for slaughter (game parks or circuses were said to be one outlet; it was also implied that some donkeys were bought for slaughter for human consumption in parts of the Northern Cape or southern Namibia).

Farmers were aware of the possibility of using mules, but they were not easily available.

Furthermore, they required more feed than donkeys, and required regular work if behavioural difficulties were to be avoided. Their rapid speed of walking meant they were perceived as suitable for strong, active people (not the elderly farmers).

Farmers were of the opinion that the use of animal power would remain constant or increase in the coming ten years. Donkeys would remain the main work animal.

*Three-furrow plow pulled by six donkeys  
Northern Cape (Namaqualand)*

