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DONKEY POPULATION AND MANAGEMENT FOR UTILITY IN RELATIONSHIP TO ENVIRONMENTAL DEGRADATION AND TRAFFIC ACCIDENTS IN NORTH CENTRAL NAMIBIA

A National Survey: 17 November 2002 to 14 February 2003

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Contents

Acronyms and Abbreviations

MAWRD- Ministry of Agriculture, Water and Rural Development

MLARR – Ministry of Lands, Agriculture and Rural Resettlement

NCD- North Central Division

AET- Agricultural Extension Technician

RRA- Rapid Rural Appraisal

CAEO –Chief Agricultural Extension Officer

DAE –Department of Agricultural Engineering

DAP- Draft Animal Power

ARDC- Agricultural Rural Development Centre

SMEs – Small to Medium-size Enterprises

FMD – Foot and Mouth disease

Executive Summary

Background and study objectives

- In the North Central Division (NCD) of Namibia a donkey survey was conducted in an effort to address the concerns raised by the public and the politicians that the donkeys were causing overgrazing and traffic accidents which to some extent resulted in the loss of human lives and environmental degradation respectively.

- The goal of the survey was to establish the population status of donkeys preferably by sex and identify areas and farmers with surplus donkeys in the four regions of NCD. Demand for donkeys had already been established in the Caprivi and Kavango regions by earlier studies.

- Therefore it was envisaged that the surplus donkeys would be moved to the demand regions thus reducing grazing pressure on the pastures and the number of donkeys causing traffic accidents. A training programme would be designed to educate the farmers who acquire the donkeys and those who already own donkeys so as to promote efficient and effective use of draft animals as a source of tillage and transport power. In addition to training, the outcome of the survey was used to recommend areas of further research in draft animal power (DAP).

Study Methodology

- Ideally the survey was supposed to interview all the farmers with donkeys in the four regions of the NCD. However, due to time limitations and the wet weather which made some areas difficult to access, some villages and households were not interviewed in Omusati region. In Oshana, Ohangwena and Oshikoto, an attempt was made to cover all households with donkeys. In Omusati region there was random selection of households and villages that were accessible for interviews.

- Farmer interviews were conducted by a team of Agricultural Extension Technicians (AET) using a structured questionnaire. Another questionnaire was sent to all the headmen requesting for the total number of donkeys and households in their villages. The headmen separated the households who own donkeys and those without. The information from the headman was used to back-up and verify figures derived from the structured questionnaires.

- Other stakeholders who included the police, governors, municipalities, the President, the Minister of Agriculture, Water and Rural Development, the under and permanent secretaries of the same ministry, the directorate of Agricultural extension and the directorate of Veterinary services were interviewed using the participatory approach by the authors.

- A workshop was held on 24 April 2003 to gather feedback from the stakeholders thus enabling finalisation of the survey report.

Field Results and Observation

- The survey revealed that there are 32 297 donkeys from 10 202 that were interviewed in the NCD. The donkey sex distribution was 16 930 males and 15367 females. Oshikoto region has the highest number of donkeys followed by Omusati region. Contrary to the belief that there are too many donkeys in the NCD, there was no surplus within the division. Therefore, this means that no donkeys can be exported to Caprivi and Kavango. According to the survey 15983 donkeys are required by the farmers in the division.

- More than half the population of NCD (56.5 %) depend entirely on agriculture and use donkeys for tillage and transport. Of the 10202 households interviewed 59.0 % use donkeys only for draft power although some households use various combinations of animals and tractors.
- Donkey meat is consumed in some areas and it is more pronounced in Omusati region though those who eat the meat do not want to come open.

- Donkeys are not the only animals causing accidents in NCD, cattle, wild animals and goats to mention a few also cause accidents on the roads. According to the police statistics 38.2 % of the traffic accidents due to livestock that occurred in NCD between 1998 and 2002 were caused by cattle whilst donkeys and wild animals caused 24.1 % and 24.0 % respectively. However in Omusati region donkeys caused more accidents than cattle. This can be attributed to the high number of donkeys in this region as shown in the total population of donkeys compared to the rest. In Oshikoto region wild animals caused more accidents than cattle and donkeys.

- In NCD, goats are five times more than donkeys and cattle are twice as many as donkeys. Therefore based on numbers and grazing pressure, donkeys are not the only livestock causing overgrazing which is translated to environmental degradation. It is unfortunate that the donkey is found up-rooting the grass because all the other stock is relocated to the cattle posts once the grazing is depleted around the homestead yet when the grazing is green all the animals are brought into the same pastures.

- Issues of livestock management particularly that of donkeys are given very little attention if any in NCD. There is generally a negative attitude towards the well being of animals. Donkeys are left to roam around without anyone caring for them. They are only remembered when the farmers want to use them either for tillage or transport purposes. As soon as their services are rendered the donkeys are left on their own to fend for themselves for feed and health related issues. Most farmers keep more donkeys than they need for replacement purposes as they claim that donkeys die due to internal parasites and other diseases, again a consequence of poor husbandry.

Recommendations

In view of the above findings the survey concluded and recommended that:

- There is need to change the farmers negative attitude towards the care and management of livestock in particular donkeys in NCD through interaction and farmer participation so as to understand why farmers do what they do. At the same time awareness campaigns, training and demonstrations should be done in areas where need has already been identified. This should be strongly supported by policies that are geared towards rural technologies e.g. training of farmers in draft animal power and manufacturing of low cost animal drawn equipment.

- Intensive extension and research programmes in DAP technology need to be put in place to address feeding, health, animal drawn equipment and marketing of donkeys and donkey meat use. This should be done through farmer participation and interaction.

- The farmers need to be trained on various uses of donkeys so that they can effectively and efficiently use them instead of leaving them idle. This will enable those households with large numbers of donkeys to cut on the number of donkeys they own and those without to have access to some donkeys for DAP purposes.

- Those breeding for sale should be made aware of the feeding and health limitations so that they keep a reasonable number of donkeys at a given time.

- A study into the feeding behaviours and the relationships of the livestock under these grazing areas will help in strategizing grazing patterns to minimise environmental degradation.

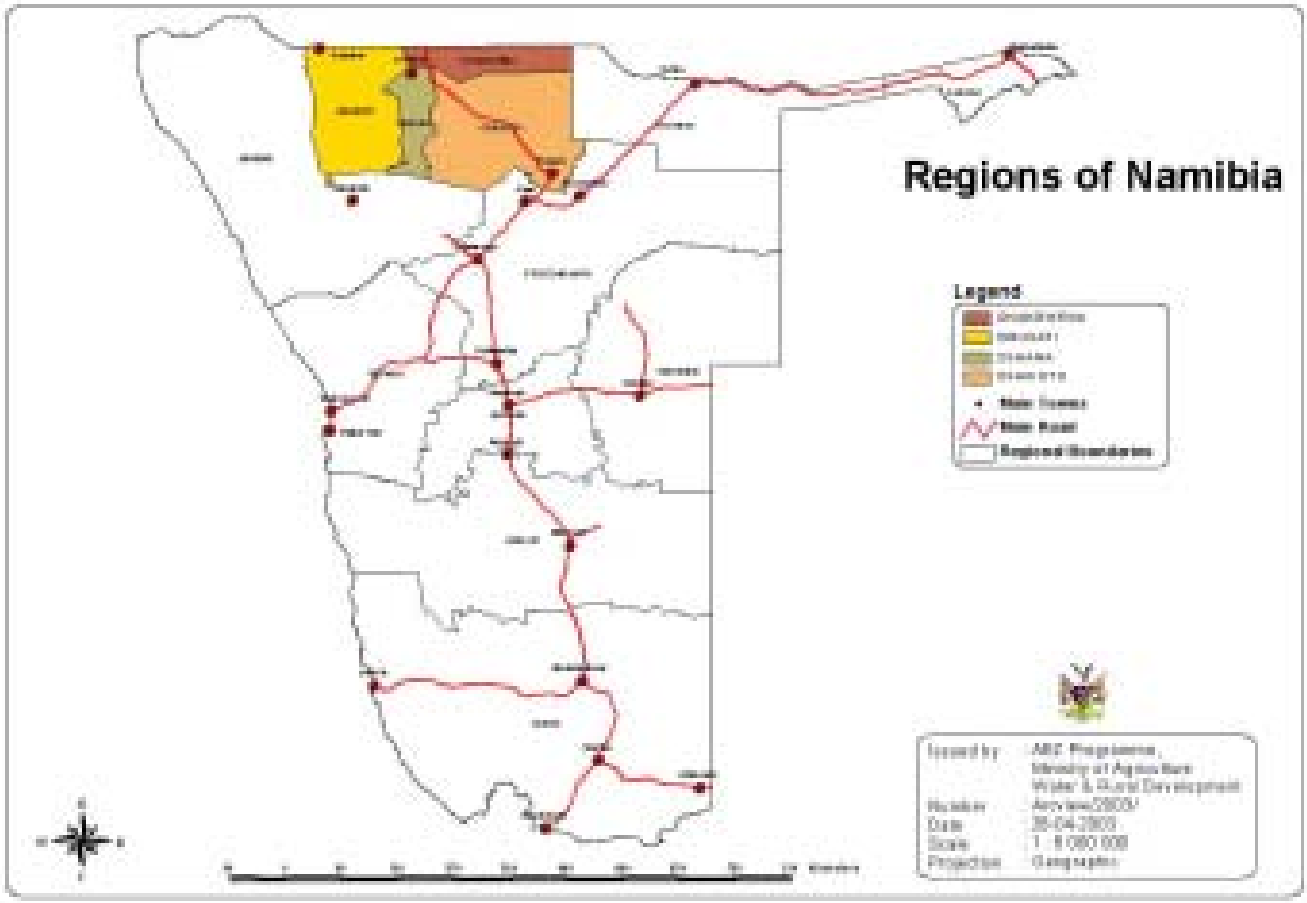
- A system of livestock record keeping including donkeys should be introduced in every Extension Technician's ward to establish livestock numbers at any given time. The system will ensure that livestock records are updated without carrying out expensive surveys.

- Legislation to control accidents caused by livestock and overgrazing of the pastures should be put in place and be managed at local level. This can be in the form of a stock card which stipulates a certain number of animals a household can own before a fee can be charged for the excess stock.

1.0 INTRODUCTION

A donkey survey was conducted in the North Central Division (NCD) of Namibia. (See Figure 1 below) The survey sought to establish livestock statistics and relate them to the environment and the alleged increasing number of road accidents due to donkeys in North Central Division (NCD) of Namibia. The survey also looked into other issues related to donkeys so as to come up with pragmatic recommendations for implementation to solve the environmental degradation and accident problems that are allegedly caused by animals in the region.

Figure 1: Map of the Republic of Namibia showing the survey area.



Donkeys came into NCD in the 1930s from the southern parts of the country. Since then, the donkeys have become an important part of the agro-socio-economic part of the people in the NCD of Namibia. Donkeys provide the draft power required for ploughing, cultivation and transportation for the smallholder farmer at an affordable price. In addition a sizeable population in NCD consumes the meat.

Due to the important role they play in that society, the demand for the donkeys is on the increase which has led to a rapid increase in their numbers in a short period of time. When donkeys were brought into the division, very little, if any, management skills and technologies were imparted to the farmers to be able to rear the animals. The donkey, unlike other livestock, is left to roam about and look after itself. It is only remembered and looked after (kraal at night) during the summer when its services are required for land preparation, thus making it prone to causing road accidents as it wonders in search of pastures.

Donkey mortality is high because the owners pay little attention to the health and safety issues pertaining to the animal. Therefore farmers have adopted an attitude that encourages keeping of many donkeys to replace those which die due to poor health and accidents. This resulted in a high donkey population in the division. This calls for research on proper utilisation and management of the animals.

2.0. BACKGROUND

In response to the concerns of the general public and political leaders' perception of high donkey population in NCD, which are supposedly causing road accidents and environmental degradation, Rapid Rural Appraisals (RRA) were conducted in year 2000 to find out the willingness of the farmers to sell their donkeys.

The RRA revealed that some farmers in the NCD were willing to sell the excess donkeys while some wanted more donkeys.

The RRA was followed by another assessment in December 2001 which indicated the demand of donkeys in other regions such as Kavango and Caprivi. This study was of a more comprehensive nature and it provided quantitative data upon which decisions could be made in order to redress the cited problems. Thus the actual demand in terms of donkey numbers required was established in Kavango and Caprivi regions.

However, the RRA in the NCD was of a qualitative nature therefore did not give figures for policy makers to use in decision-making. General information on the donkey accident and environment degradation impression by residents of NCD was generated.
The actual demand and supply could only be determined through a census that documents all farmers with donkeys and showing those willing to sell and the numbers. The census would also indicate the farmers willing to buy these donkeys and the numbers to be bought. Based on the supply and demand figures and other qualitative and quantitative information collected during the census, decisions could be made to determine the fate of the donkeys in this accident/environmental degradation problem area.

Hence, the donkey survey in the NCD of Namibia (Omusati, Oshana, Ohangwena and Oshikoto) was commissioned by the Ministry of Agriculture, Water and Rural Development (MAWRD) of the Government of the Republic of Namibia through the Department of Agricultural Engineering (DAE) of the Ministry of Lands, Agriculture and Rural Resettlement (MLARR) of the Government of the Republic of Zimbabwe.

3.0 SURVEY OBJECTIVES

The overall objective of the study was to carry out a donkey inventory in NCD (Omusati, Ohangwena, Oshikoto and Oshana) and suggest ways of dealing with the perceived large number of donkeys.

The specific objectives were as follows:

(a) To determine the donkey numbers per region by sex
(b) To identify surplus and deficit areas in the regions
(c) To identify the actual demand for donkeys within the region
(d) To identify the total number of donkeys for sale in each region.
(e) To identify the names, location and addresses of farmers willing to sell donkeys and how many each farmer is willing to sell and at what price
(f) To determine the overall percentage of farmers advocating for the reduction of donkeys in the region
(g) To determine measures to be taken to control the increase of donkeys in the region
(h) To determine the means and cost of transporting donkeys to customer areas
(i) To assess the impact of donkeys on the environment in the identified supply and demand areas
(j) To draw up a training programme for donkey owners
(k) To determine the cost of training donkey owners
(l) To identify and recommend areas of intervention and research in draft animal power

4.0 SURVEY IMPLEMENTATION APPROACH

Formal and informal data collection methods were used in the survey to interview the various stakeholders who included farmers, the police, municipalities, agricultural extension personnel, the Department of Veterinary Services, transport operators, local leaders and policy makers and political leaders. The data collection process employed participatory techniques as and when required.

A structured questionnaire was administered to the farmers in the four regions of NCD. This enabled the enumerators to generate quantitative data on the numbers of livestock and their location in the regions. The questionnaire also captured the farmers' perceptions about the donkeys and the associated problems in NCD.

Plate 1: A draught animal power co-ordinator in discussion with a farmer during the Survey

Separate interviews were conducted for the other stakeholders in an endeavour to verify and fill up information gaps from the farmer interviews. These interviews were done to get information on accidents, the types and magnitude of livestock impounded by the municipalities and general public perception on donkeys.

Plate 2: Survey Team during a lunch break

A team of twenty-seven enumerators comprising AETs from the MAWRD conducted the farmer interviews in each region. Headmen and councillors were used as key informants. The enumerators covered every constituency and village in each region except for Omusati, which was vast and had the highest donkey population. At village level farmers were selected randomly with the assistance of the headmen to give a representative sample of the village. However, due to time limitations and difficulties in accessing some villages caused by the rains some farmers could not be interviewed. An effort was made to reach all the farmers with donkeys in Oshana, Ohangwena and Oshikoto regions. A different questionnaire was sent to each headmen in all the regions so that they fill in the total number of households in their villages and the number of donkeys owned. The same questionnaire was also applied in the other regions to verify the information collected using the individual farmer interviews.

Data computation and analysis was done using Microsoft Excel programme.

Plate 3: Survey Team during data entry

5.0 SURVEY FINDINGS

5.1.0 Findings from the Farmers

5.1.1 Land Ownership

Most farmers in NCD depend on agriculture for their livelihoods and 56.5 % of the households interviewed depend entirely on agriculture. Households generally own between less than a hectare to 16 hectares of land and the average land size is 3.1 ha per household. The major crops grown in the division are pearl millet and sorghum. These are sometimes inter-cropped with cowpeas and beans. The other crops grown are maize, bambara nuts and watermelons.

5.1.2 Draft Power Sources

Of the 10 202 farmers interviewed in the four regions of the NCD, 59.0 % use donkeys, 21.7 % oxen, 19.0 % a combination of donkeys and oxen, 5.0 % a combination of donkeys and tractors, 16.1 % use tractors and 6.9 % use hand hoes as a source of draught power while other farmers either hire or borrow any of the forms mentioned above. The major forms of transport used on the farm include donkey carts, sledges, bicycles, wheelbarrows, head loading and own vehicles. Some also hire or borrow transport for farm use. See table 1 and 2 below.

Table 1: Distribution of Draft Power Sources For the Interviewed households

SOURCE OF FARM POWER	HOUSEHOLDS USING FARM POWER	PROPORTION OF RESPONDENTS (%)
Donkey	6019	59.0
Oxen	2214	21.7
Donkey and Oxen	1939	19.0
Tractor	1641	16.1
Hand	703	6.9
Donkeys and tractors	505	5.0

Table 2: Distribution of Transport Sources For the Interviewed Households

Transport Category	Oshana	Omusati	Ohangwena	Oshikoto	Total
Donkey	533	802	396	1824	3555
Oxen	7	55	25	142	229
Tractor	4	7	3	45	59
Vehicle	239	334	62	133	768
Head loading	466	405	770	854	2495
Wheelbarrow	151	64	102	31	348
Bicycle	154	139	21	12	326
Hiring	14	77	0	0	91
No response	541	931	578	336	2386

5.1.3 Livestock Population from Interviewed Farmers

Figure 2 and table 3 show that, there are more cattle and goats than donkeys in NCD for the interviewed households only. There is a total of 32297 donkeys, 65790 cattle, 153 972 goats and 5113 sheep. Pigs, horses and dogs were also found in this region although in very small numbers.

Table 3 shows the livestock population distribution within the regions in the NCD of Namibia.

Table 3: Distribution of livestock population from interviewed farmers

Region	Donkeys	Cattle	Goats	Sheep
Omusati	**9115	19056	42741	2540
Oshana	6880	9077	23843	1557
Ohangwena	5114	7349	28884	168
Oshikoto	11188	30308	58504	848
Total	32 297	65 790	153 972	5113

** The sample did not cover all households with donkeys therefore the figure will be up dated with information from the headmen.

Goats constitute 59 % of the livestock population in the division, while cattle, donkeys and sheep are 26 %, 13 %, and 2 % respectively. The trend is generally the same in all the four regions of NCD.

A comparison of the figures in the table 3 above and 4 below shows that there are 106 464 households in the NCD. There are 543 51 cattle, 106 800 donkeys and 232 101 goats and sheep. This shows that cattle constitute 61.59 %, 12.10 % donkeys and sheep and goats 26.30 % of the total livestock population.

NB It is important highlight that there were a lot of problems that the survey team encountered in trying to come up with livestock numbers and these were as follows:

- A census to be conducted by the survey team was not possible because of time constraints and personnel to conduct the survey for all the households in the NCD. A sample of households was interviewed instead.
- It must also be noted that in some cases farmers did not give accurate figures to the enumerators because they thought that their donkeys would be killed as had been rumoured in the NCD. This could have distorted the figures given even in the survey considering that in some regions a deliberate effort was taken to interview all farmers with donkeys.
- The census which was commissioned through the headmen is still running, again the constraints were time and personnel to implement it within the agreed time. Once all the questionnaires are back a separate report will be compiled.
- Statistics from other reports were not accurate for the survey team to extrapolate the figures found in the survey.
- It was also noted that some of the figures from DVS had other constituencies left out which made it difficult for the survey team to use their figures for extrapolation.

5.1.4 Donkey Population

The total number of donkeys recorded out of the 10 202 households interviewed was 32 297 of which 16 930 are male and 15 367 are female donkeys (see annex 1separately provided on request). Table 5 shows the breakdown of donkey population in the four regions of the NCD for the interviewed households.

Figure 2: Survey Livestock Population distribution in NCD

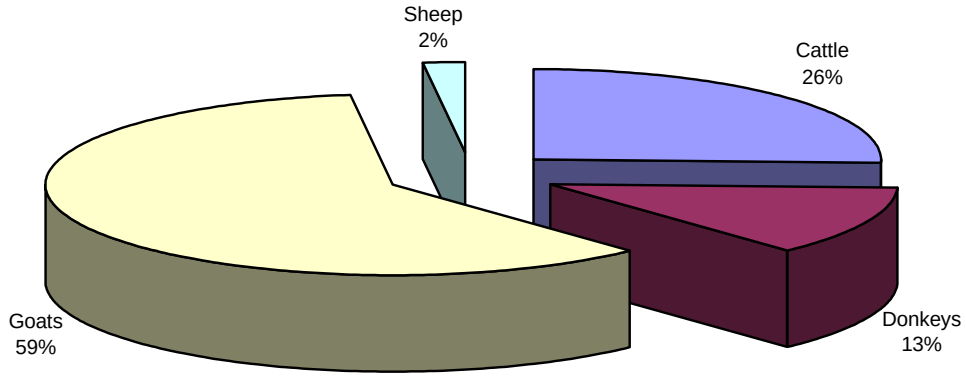


Table 5: Survey Donkey Population distribution

Constituency	Male Donkeys	Female Donkeys	Total Population
Oshana	3477	3403	6880
Ohangwena	2831	2283	5114
Omusati	4934	4181	9115
Oshikoto	5688	5500	11188
Total	*16 930*	*15 367*	*32 297*

5.1.5 Donkey Ownership and Uses

On average, each household that was interviewed and owned donkeys, had about five donkeys, whereas general donkey ownership ranges from 1 to 79 donkeys per household. More than 66.9 % of the households interviewed own donkeys and 60.5 % of the donkeys are used for draft power. The donkeys are mainly used for tillage and transport. The specific uses are ploughing, weeding, transporting the sick to the hospital, transporting people to collect their pensions and also transporting water and firewood to the homesteads. The donkeys are also used as pack animals. Donkeys also provide meat for the communities in NCD. Donkey meat consumption is more pronounced in Omusati region, where 13 % of the farmers interviewed considered it an important issue. It was observed that many of the farmers do not want to come open and accept that they eat donkey meat.

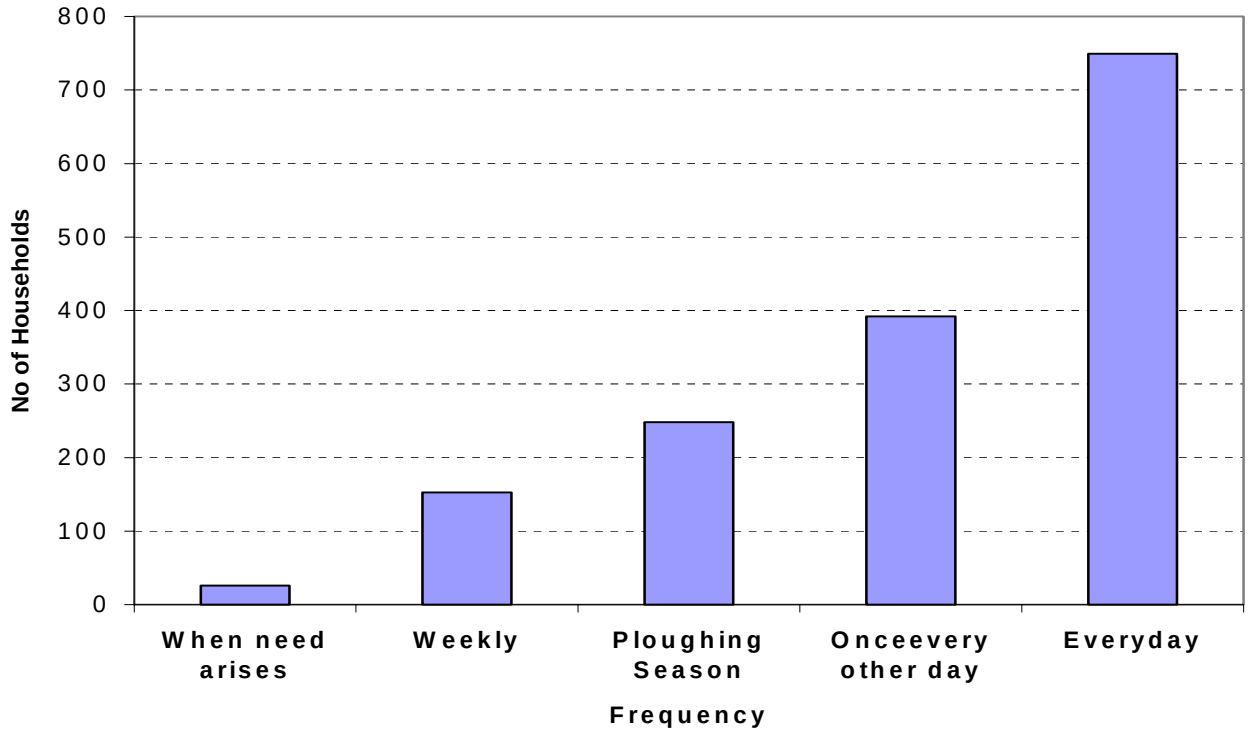
Plate 4: Transporting water with a donkey cart

Plate 5: Donkeys can also be used as pack animals

Plate 6: Villager selling donkey meat in Omusati region

Figure 3 shows the frequency of donkey use.. The survey revealed that 47 % of the interviewed farmers use donkeys almost on daily bases and 16 % everyday during the ploughing season. During the dry period they use them mostly for transport. 10 %, 25 % and 2 % of the farmers use them weekly, once every other day and when need arises respectively. This underlines the importance of donkeys to the residents of the NCD. Some of the farmers even mentioned that abattoirs for donkeys should be opened so as to reduce donkey's numbers and allow people free access to donkey meat.

Figure 3: Survey Frequency of Donkey Use for Households Who Own Donkeys



5.1.6 Donkey Supply and Demand

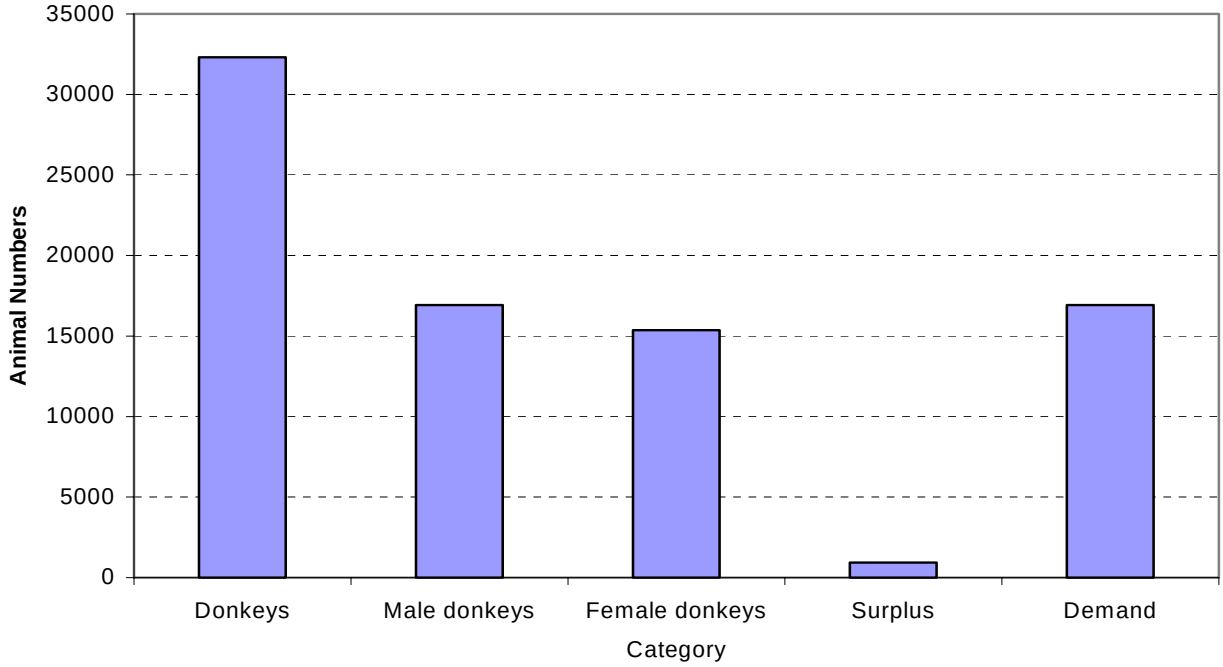
Figure 4 shows a summary of donkey population, demand and surplus for the interviewed households in the four regions. The trend is generally the same for each region.

There are more male donkeys than female donkeys in the NCD. Only 943 donkeys are on offer for sale in all the regions while 16 926 more donkeys are demanded within the division. Therefore there are no surplus donkeys in this division. It means that the farmers in this division will not be able to sell their donkeys to the needy farmers in other regions. In fact 15 983 more donkeys are required to satisfy the demand within the region. The names and location of farmers, total number of donkeys for sale and those demanded in the division are shown in Annex 1. If this demand is met the total number of donkeys for the households interviewed would rise to 48 280. However the demand should be interpreted with care as most farmers who had many donkeys indicated that they still required even more donkeys.

Whilst there is no donkey surplus in the division, those farmers who are willing to buy the few donkeys available for sale either drive them on foot or use Meatco. As at February 2003 Meatco charged N$ 120 per head for every 300 km . However, there are other transporters who can be hired using their trucks to carry the animals but the charges are variable.

About a third of the farmers interviewed kept more donkeys than they required. They claim that donkeys die easily, therefore it is essential for them to keep a sizeable replacement stock. Donkey health care was among the three most important issues farmers thought required attention. If donkey management improves it implies that less donkeys will die and this can be an incentive for the farmers to reduce the size of the replacement stock. This scenario is envisaged to cut down on the demand and hence the total number of donkeys in the region.

Figure 4:Survey Donkey Population status



The buying and selling prices of donkeys for the interviewed farmers in the NCD are outlined in table 6.

Table 6: Mean buying and selling prices for donkeys for the Interviewed households.

ITEM	PRICE (N$)
Male Buying	500
Female Buying	540
Male Selling	560
Female Selling	610

The prices varied from one region to another however, buying prices were lower than selling prices in all the region indicating that farmers are prepared to spend less in buying and earn more from the sale of donkeys.

In other regions like Oshana and Ohangwena the selling prices were higher than the other two regions. This coincides with the low number of donkeys in those two regions, which implies that lower supply is pushing the prices up. The prices ranged from as low as N$ 100 to as high as N$ 2000 depending on the region and the farmer.

5.1.7 Breeding

Breeding of donkeys for sale is not a common practice in NCD. Only a few farmers, if any, breed their donkeys for specific purposes. Therefore there are no breeding policies within the households and donkey reproduction and multiplication is not controlled. Donkeys reproduce naturally hence issues like inbreeding, population explosions and diseases are left for nature to decide.

Based on the above statement there is need to therefore educate and train the farmers on the importance of proper donkey management to maintain better growth vigour, bigger size animals for DAP and reasonable populations that can be sustained by the grazing area.

5.1.8 Donkey Reduction and Measures to Control Population Increase

About 12 % of the households interviewed advocated for reduction of donkeys either by selling them to others who did not have or killing them for meat. Environmental degradation was cited as one of the major reasons for the reduction. Some of households were comfortable eating donkey meat and in Omusati region some even mentioned that it was a delicacy. In some cases proposals to open abattoirs for donkeys so as to reduce donkey numbers and to allow people free access to donkey meat were advanced.

However, measures to arrest donkey population increase in the NCD need a holistic approach. It is important to note that several factors are involved. Therefore, implementing just one may not adequately address the problem. The measures revolve around proper management and utilisation of donkeys which requires a change in attitude at the way the farmers look at animals in general.

The farmers need to be trained on various uses of donkeys so that they can effectively use them instead of leaving them idle. There is need to educate them on the importance of keeping enough donkeys for their draft power, replacement and meat requirements. Those breeding for sale should be made aware of the feeding and health limitations so that they keep a reasonable number at a given time. Therefore the most important goal to achieve is to change the attitude of farmers towards donkeys. This can be done through farmer interaction and participation, training, demonstrations and awareness campaigns. Intensive extension and research programmes are also imperative.

Introduction of a stock card and grazing fee is believed to help in the reduction of not only donkeys but also other livestock which are competing for the same resources. The card and fee system needs to be supported by a policy that stipulates the maximum number of animals each household can keep before paying the grazing fee is applicable. In addition, farmers need to be educated on the advantages of such a system so that implementation becomes participatory and less expensive.

Controlled breeding programmes need to be introduced so that at any point in time the number of donkeys do not exceed the veld carrying capacity and the intended uses. This should take into account supply of donkey meat to abattoirs/processing units if need arises.

Establishment of a donkey abattoir and processing unit in an area where donkeys are consumed would assist in reducing the numbers.
The processing unit should look at markets beyond the borders of Namibia to make the enterprise sustainable. This is envisaged to increase the value of the donkey, which would have a positive influence of management of the donkey.

In NCD the culture of consuming donkey meat is not traditional, therefore promotion of the idea will see those who are eating donkeys behind the doors coming open. If donkey meat becomes no secret then butcheries and any other selling places of the meat can be established as is with beef and goat meat.

5.1.9 Impact of Donkeys on the Environment

A traverse of the NCD region at the beginning of the survey revealed that there was virtually no grazing for the animals in communal grazing areas. One could easily notice that the pastures were overgrazed.

Plate 7: During the dry season donkeys can be seen scrounging for grass

Plate 8: Donkeys scrounging for grass

The observation was further reinforced by 29.3 % of the farmers interviewed who said that donkeys caused overgrazing. However, donkeys are not the only form of livestock using the grazing.

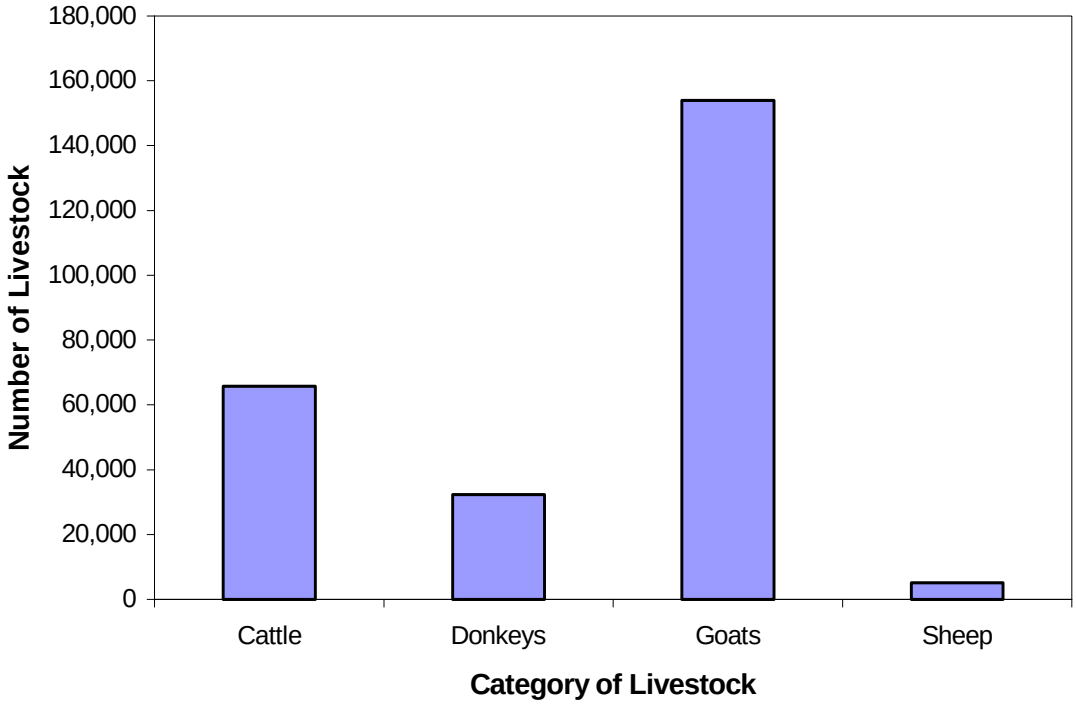
A comparison of livestock utilising the same grazing is illustrated in Figure 5. Goats are 4.5 times the number of donkeys in the region. Donkeys are half the number of cattle. Therefore based on the numbers, donkeys are just a small fraction of the agents causing environmental degradation and cannot be blamed alone for over-grazing.

Goats are known to be heavy browsers and scavengers. Under these conditions, chances are that they are out-competing the other livestock for the grazing since they are many in numbers than any of the livestock in the four regions. Cattle and sheep enjoy feeding on short grasses, it is assumed that these are clearing the grasses leaving the donkey who is a slow feeder to graze on the grass stubs. Because the donkey is a slow feeder and the grass is not available in sufficient quantities, they even graze at night and pull out the stubs from the ground hence they are labelled heavy grazers. During the summer when grass is available all animals graze in the communal areas around the homesteads, and when the grass is finished cattle and goats are moved to the cattle posts while the donkey is left to feed on the remaining scarce grass.

Therefore when farmers observe, they allege that the donkey to feeds 24 hours and uproots the grasses which is translated as overgrazing. If cattle were to be left under the same conditions may be they would equally do the same or even suffer more since donkeys are hardier than cattle.

It is also clear that in the communal grazing areas, no rotational grazing is being practised. Therefore, the pastures are not given the chance to recover. This, in turn, leaves the pastures to yield low foliage per unit area and becomes the starting point for overgrazing. Donkeys, cattle and goats have been observed to graze in separate clusters. This may suggest preferential grazing on the part of the different livestock. A study into the feeding behaviours and the relationships of the livestock under these grazing areas will help in strategizing grazing regimes in order to minimise environmental degradation.

Figure 5: A Comparison of the Livestock Utilising the Grazing For the Interviewed Households



The grazing areas' carrying capacities need to be established taking into consideration all the types of livestock in the areas. Once the carrying capacities are known, either rotational grazing or reduction of livestock numbers can be used to regulate the grazing pressure on the pastures.

Whilst there are large numbers of animals in NCD, the problem is also compounded by the general dryness of the area. This requires that the correct livestock units be matched with carrying capacities of the areas. Farmers suggested that one way of controlling overgrazing is to kraal the donkeys so that they do not continue to graze at night. However, this requires that supplementary feeding be considered so that the donkeys do not starve.

During the rainy season, there is a general improvement on the veld and there is sufficient grass for the livestock to graze. Farmers also mentioned that during that period there is abundant grazing for the animals.

Below (Table 7) are the suggested solutions by the farmers to the environmental problems.

Table 7: Survey Number of farmers and solutions to environmental problems

POSSIBLE SOLUTIONS	NUMBER OF RESPONDENTS
Reduce numbers	1016
Improve management	343
Fence road side	44
Train farmers	9
Herd the donkeys	78
Isolate them in camps/paddocks	9
Kraal them	871
Supplement	49
Rotational grazing	15
Tie legs of donkeys	5
Put them at cattle post	1

5.1.10 Gender issues in Donkey Ownership and Use

Generally all members of the family used donkeys although the larger percentage of farmers who use donkeys are males (Table 8). There are generally no restrictions to use by women. In-fact farmers mentioned that donkeys were friendly, easier to handle and women could handle them easily.

Table 8 gives the information on members of the family using the donkeys as draft animals.

Table 8: Distribution of donkey use within the household for the interviewed households

GENDER	HOUSEHOLDS
Male	1436
Female	441
Children	2018
Family	2697

From the households that were interviewed, there were 2691 female-headed households and 7466 male-headed households. Children headed only 15 households. Of the households headed by females 55.9 % owned and used donkeys while 70.5 % of the male-headed households owned and used donkeys.

5.1.11 Management of Donkeys

During the dry season donkeys are left to roam around to fend for grazing since grass will be scarce. It is generally believed that the donkeys won't destroy other farmers' crops as there will be no crops in the fields. 72 % of the farmers interviewed said that they only kraal their donkeys at night during summer season so that they can protect their crops in the field. During the daytime the donkeys are herded and usually by children.

About 76.8 % of the households who own donkeys said that they castrate their donkeys. The farmers said if donkeys are not castrated, they easily get lost as they search for female donkeys. This complements Trawford's (1997) observation that castrated male donkeys make better draft animals through improved temperament, body fat distribution and availability when need for use.

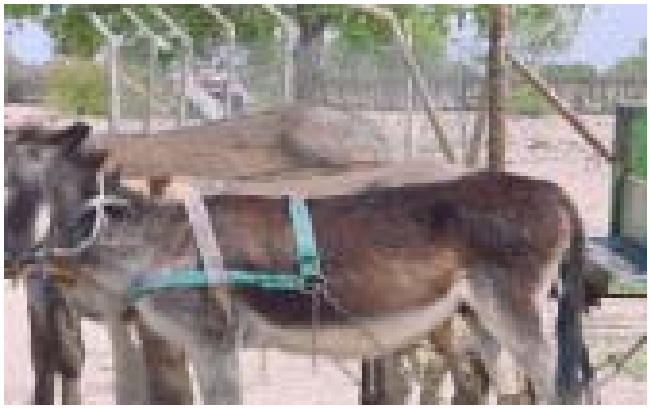
Plate 9: Donkey tied in the front legs

Plate 10: Harnessing donkeys with yokes

Plate 11: Overloading donkeys

Plate 12: During the ploughing season some farmers do kraal their donkeys

Plate 13: Proper harnessing



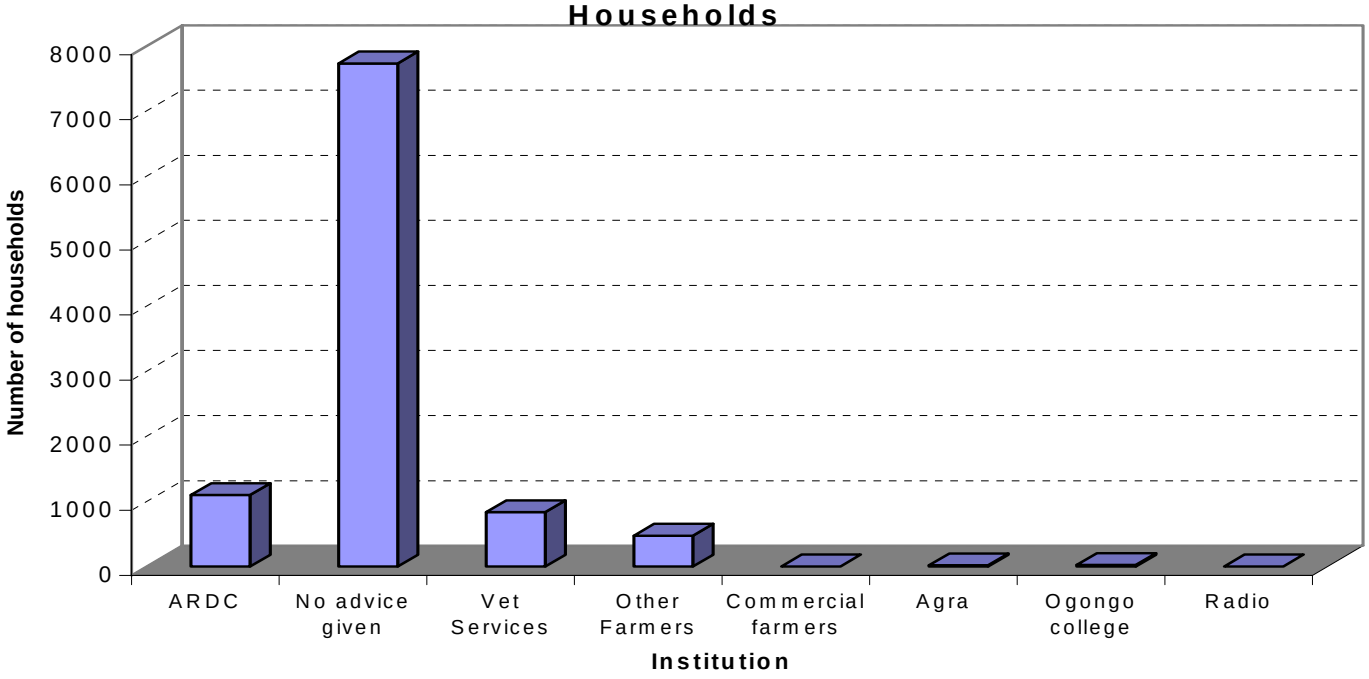
5.1.12 Health Care

Generally farmers do not care for their donkeys. Most farmers said that they would leave them to die if they fall sick.

Plate 14: An unhealthy donkey

Most farmers mentioned animal health as a major concern and some farmers who own donkeys mentioned that their donkeys suffer from internal parasites. However, they said that sometimes they use traditional methods to cure donkeys if they fall sick. Such traditional methods include the use of umupopo and snake medicine just to mentioned a few. A few farmers mentioned the veterinary services and the agricultural office as the source of health advice. See Figure 6. Some even farmers mentioned the pharmacy as their source of health advice.

Figure 6: Source of Animal Health Advice For the Interviewed Households



5.1.13 Feeding

More than 58.8 % of the households who own donkeys said that the pastures were not adequate. Most farmers do not provide supplementary feed for their draft animals. They leave their donkeys to fend for themselves. Distances to grazing range from less than a kilometre to 10 kilometres as cited by the farmers. They sometimes have to take the donkeys to far away places just to look for better grazing. The places that farmers mentioned where their donkeys graze include around the homestead, in the fields, in the oshanas and at the cattle post.

The supplementary feeds that farmers mentioned are crop residues such as stover from mahangu or sorghum. Some will also give palm leaves, groundnut leaves and hay.

Supplementary feeding of the donkeys and other livestock also need to be considered seriously. Supplements can be in the form of stover from the crops that they are already growing, wild trees/leaves and grass. A study into the local grasses, means of processing the hay and storage need to be conducted.

5.1.14 Sources of Advice on Livestock Production

The sources of advice that farmers get are given in the table below. Most farmers are not getting any advice at all. Table 9 shows that 91.0 % of the interviewed farmers said that they were not getting any advice. Only 4.3 %, 0.1 %, 0.4 %, 1.7 % and 0.1 % get advice from ARDC, Department of veterinary services, other farmers, radio and Ogongo College respectively. This demonstrates the need for the service providers to come up with strategies that ensure a wide coverage of the clientele. Pilot programmes can be considered in nuclei constituencies to try and reach as many farmers as possible.

Table 9: Institutions mentioned by the interviewed farmers as their sources of advice on Livestock Production

INSTITUTION	NO OF REPSONDENTS	PERCENTAGE OF THE INTEINTERVIEWED FARMERS (%)
ARDC	440	4.3
DEPT VET	14	0.1
RADIO	42	0.4
OTHER FARMERS	175	1.7
NO ADVICE GIVEN	9280	91.0
OGONGO COLLEGE	4	0.1

Of the farmers interviewed only 4.1 % received or attended some training on general draft animal power. Most farmers mentioned that they had been trained on weeding using an animal drawn cultivator. 54.3 % of farmers indicated willingness to be trained in animal draft power. Therefore this means that training in animal draft power is required in the NCD to satisfy the demand for training indicated by the farmers' willingness to attend the course. In fact an intensive training programme would assist in improving the use of draft animals in the NCD and counter the perceived problems by the general public and other stakeholders.

The training should consider general animal production and management with particular emphasis on donkeys and training of animals for draft power. The animal production and management is envisaged to deal with issues related to the environment and populations. While the draft animal power courses will take care of the draft requirements for tillage and transport purposes for the farmers.

The following training and extension programmes should be initiated for farmers:

1. Training of donkeys and draft animals in general.
2. Management of donkeys and other animals
3. Donkey harness making and use
4. Use of implements
5. Rural Transport- packing and carting (Cart and saddle pack making)
6. Tethering hobbles

These courses should be backed with strong dissemination (extension) programmes to ensure that technology exchange between farmers is encouraged and strengthened. Activities like demonstrations, competitions, field days and shows need to be promoted to give an incentive for the farmers to manage and use the animals effectively and efficiently.

It is however important to mention that extension technicians have been trained before and below is the total number of extension technicians and farmers trained in the four regions. Whilst there are more extension technicians who have been trained in the four regions, the AETs are not only advising on DAP as they have other agricultural subjects to take care of.

Table 10: Total number of Extension Technicians and farmers Trained in DAP between the period 1996 to 2002

Region	No of AETs trained	No of AETs not trained	No of farmers trained	No of animals trained
Oshikoto	12	1	365	120 oxen 201 donkeys
Ohangwena	12	1	297	210 oxen
Omusati	13	5	667	543 oxen 283 donkeys
Oshana	8	2	297	136 oxen 159 donkeys
Total	86	24	1626	

5.1.15 Accidents

Plate 15: Accident with a donkey

Plate 16: Donkey hit by a vehicle

Plate 17: Donkeys roaming around the shopping area. This can be dangerous to pedestrians and drivers.

On average 5.5 % of the interviewed farmers in the NCD said that donkeys caused accidents. The distribution of the accidents is as follows:

Omusati	10 %
Ohangwena	2.85 %
Oshana	7.71 %
Oshikoto	1.66 %

Some even said that other farmers leave their donkeys roaming around and only look for them when they want to use the donkeys particularly during the ploughing season.
This was confirmed by the high number of the donkeys the team saw on or near the road in November 2002 when the survey kicked off. As soon as the first rains fell, no donkeys were seen roaming in Oshakati town and a few could be seen roaming along the roadside in NCD.

The farmers use several methods of donkey identification. Donkeys are identified by colour, brand marks, ear tags, ear notches and the name. However, some farmers complain of their donkeys being stolen, which can be attributed to lack of identification.

Some farmers mentioned that their donkeys get lost forever. Since farmers leave their donkeys to roam around during the dry season they are prone to theft and also to accidents.

5.2.0 Findings from Other Stakeholders

5.2.1 Police, accidents and stray donkeys

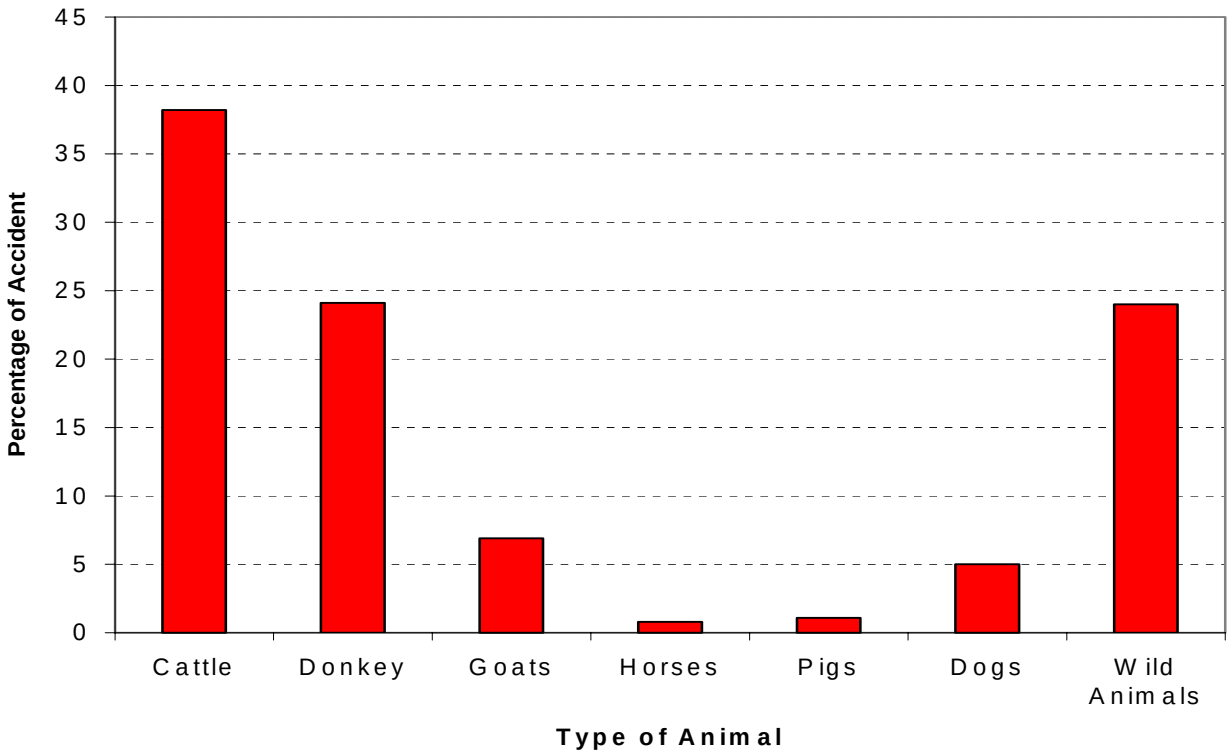
The Police that were interviewed in all the four regions of the NCD were interviewed and they said that all forms of livestock were generally causing accidents in the roads. They mentioned that during the time when donkeys are mating they chase each other and so they run crossing roads thereby causing accidents. In addition the police said donkeys are generally insensitive to danger therefore they move off the road slowly if at all when traffic approaches, this also results in accidents.

They also pointed out that speeding is one of the biggest contributing factors. Vehicles are normally driven at high speeds in such a way that should an animal cross the road unexpectedly, avoiding an accident becomes difficult. The police did not perceive donkeys as the main cause of accidents on the roads (Figure 7).

In fact donkeys only caused 24.1 % of the accidents that happened between 1998 and 2002 whereas cattle caused 38.2 %.

In Oshikoto region the police reported that kudus are on top of the list followed by cattle. In Omusati region donkeys cause more accidents than other livestock in the region because they are not taken care

Figure 7: A Comparison of Accidents Caused by Various Animals in the four regions of the NCD



of particularly in summer and that is the region with the highest number of donkeys when referring to the theoretical population

In Ohangwena, the police cited that cattle cause more accidents than donkeys.

The police also mentioned that some members of the public were not reporting the accidents if they are minor especially, when the vehicle occupants are not injured.

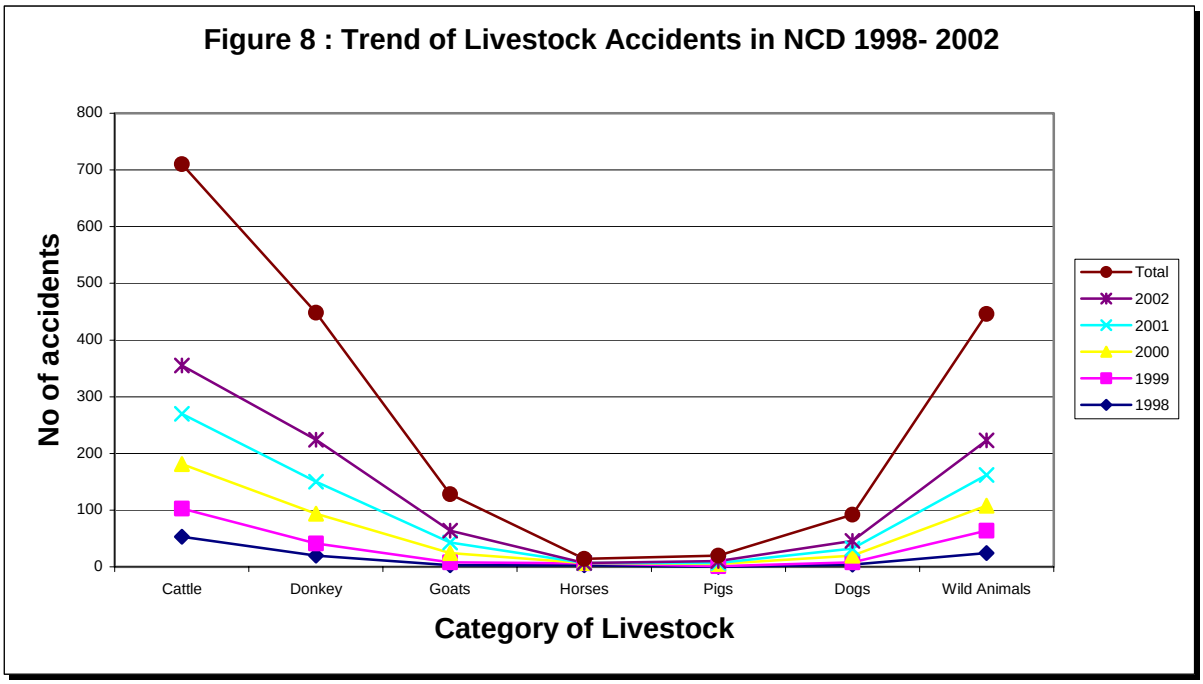


Figure 8 shows the trend of increase or decrease of accidents caused by various livestock in the NCD between 1998 to 2002.

The following are the possible solutions to road accidents raised by the police:
Meetings should be organised with communities to educate the public on management of their animals so that they can take care of their stock. The police acknowledged that donkeys are very important especially to the poor people since they pull carts to collect water, transport the sick to the hospital and plough the fields. Therefore taking away the donkeys was not a good option.

People with homesteads close to towns should be relocated so that their animals will not roam in town.

Introducing legislation that punishes those with livestock that get involved in accidents would encourage farmers to take care of their donkeys although they felt that it would be difficult to implement.

Erecting fences along the roads to cut on the number of accidents caused by donkeys and other livestock. This solution was considered a temporary measure as the fence will eventually be stolen.

5.2.2 Municipality and impounding of Livestock

The municipality of Oshakati impounds any animal that they see or is reported to be roaming in town. Four casual workers are employed by the municipality to impound the livestock found roaming in town. If the livestock are impounded the owners are fined before collection of the animals.

The municipality said that, of the livestock they impounded 50 % were goats, 30 % cattle, 15 % donkeys and 5 % the rest of the stock. This generally shows that all types of livestock roam around the town area and can cause accidents. Based on the numbers, goats and cattle have a higher probability of causing accidents than the donkey.

During the dry season farmers leave their donkeys to roam around and if the Municipality impounds them, farmers do not come to collect them. They actually let them die. So the Municipality is no longer impounding donkeys during that period, they try to chase them away from the Municipality area.

The municipality suggested fencing off municipal area and resettling farmers who are within the municipal area to other areas to avoid livestock that roam in town.

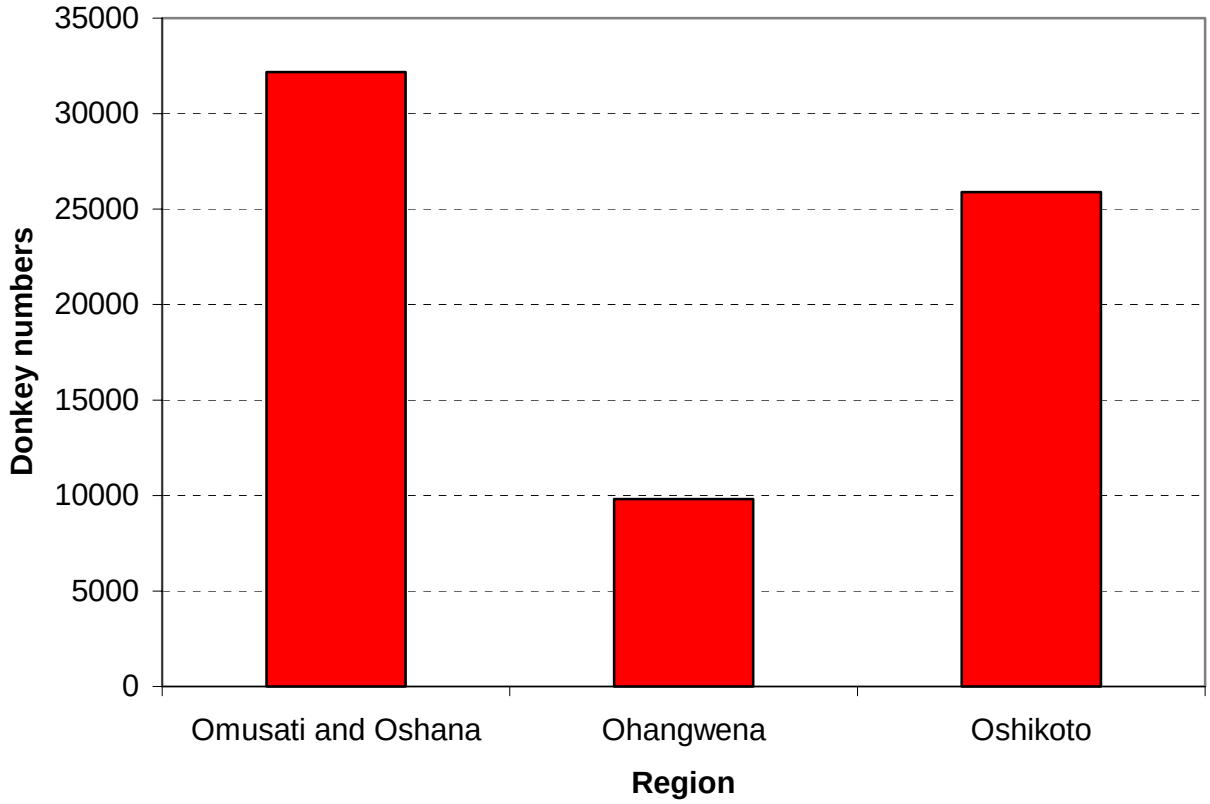
5.2.3 Veterinary Services

The Veterinary Services whose role mainly rests in animal disease surveillance is more of a regulatory body. They only deal with reported cases unless an out-break of a disease with an economic significance occur such as foot and mouth disease (FMD). This means veterinary doctors do not deliberately go out to inform farmers about livestock health. They say there is a general problem of inadequate personnel. Livestock to veterinary doctor ratio is too high. One Veterinary doctor has to take care of 33 000 households. There are only 3 veterinary doctors in NCD yet they are supposed to be 8 in total. The distances that they travel to their clients are also very far and difficult to manage. The chief Animal Health Technicians are also few and there are only 4 Animal Health Technicians in the whole region.

Animal production issues, including livestock management belongs is left to the Extension Directorate. As far as the vets are concerned there are no big problems with donkeys, there are no infectious diseases. They have problems of internal parasites particularly during the dry season. There has not been an outbreak on donkeys dying because of internal parasites. Rabies in donkeys is a problem in the area. There have been cases of children being bitten by rabid donkeys. Because donkeys are resistant to many diseases they are not included in the annual vaccination programme.

Figure 9 below shows donkey population figures in the four regions of NCD from the veterinary services.

Figure 9: Donkey population as at December 2002 (Source: Veterinary Services)



Veterinary doctors get figures on livestock numbers from farmers during vaccinations and they normally get figures from farmers who own cattle. Those who do not own cattle do not come to the crush pen for vaccination therefore their livestock including donkeys are not counted.

NB The Veterinary Services figures will be validated by the figures from the current census on donkey numbers in the NCD.

5.2.4 Chief Agricultural Extension Officers (CAEOs)

The CAEOs thought that tractors are increasingly becoming expensive and draught animal power should be considered seriously for provision of tillage and transport energy. Therefore donkeys come into lime light as they can easily be used by all members of the family. They felt that this issue needed careful handling since it involved many other issues. They pointed out that as the donkeys are increasing on one hand human population is also increasing on the other hand and its only normal that the population of animals also increases too.

One of the chiefs mentioned that the donkeys were increasing in numbers and there was pressure on grazing and therefore felt that the numbers should be controlled.
He went on to mention that long ago males were castrated, and that's how numbers were kept under control but nowadays many of them are not castrated, therefore the numbers keep increasing.

However, one of the general consensus identified was poor management of livestock because most farmers are not looking after their donkeys well. The donkeys roam around looking for water and food. In fact some farmers are even buying donkeys from as far as Rehoboth to Oshakati which means the number of donkeys is not enough. Once the donkeys are brought in, the owners usually do not look after them.

The CAEOs felt that cattle were causing more accidents than donkeys and they also felt that the problem is not with the donkeys but with the people who do not manage their stock well.

As far as donkey meat is concerned they said that people in NCD generally do not slaughter donkeys for meat like they do with other animals like cattle. Normally they want to use them for ploughing and transport. They mainly eat donkeys killed by accidents or other causes.

They expressed dissatisfaction at the manner in which the donkeys are treated. The owners do not care for them, they even leave them to die in cases of illness. Some farmers use inappropriate harnessing such as yokes on donkeys, some tie the donkeys' front legs to immobilise them. This restricts the donkeys' feed intake as they cannot move in search of grazing. The rope that the use to tie cuts deep into the skin, thereby causing wounds which are painful for the donkeys. It is important to note that it's not only the donkeys that suffer like this. It is common to see other animals like pigs and goats with Y-sticks on their necks which makes grazing difficult. Unfortunately there is no institution which deal with animal rights.

The CAEOs also mentioned that farmers are only trained on draft animal uses and not on management issues. Animal health related issues are referred to the Department of Veterinary Services and range management issues to the Department of Research.

They recommended that a legislation should be put in place to encourage farmers to keep their animals out of the roads and that the stray donkey issue should be approached from the political side. A law should enable those donkeys which are not claimed to be taken away and sold to the needy.
The community's attitude towards animals is not good therefore they recommended a major drive towards changing the attitude to improve on the management of the animals in general. This could be in the form of farmer interaction and partcicipation, awareness campaigns and establishment of animal rights institutions.

5.2.5 Kings and Chiefs

The local leadership acknowledges the usefulness of donkeys as they play a major role in ploughing particularly because of the introduction of the animal drawn plough. The donkeys are also used for transport. They confirmed that consumption of donkey meat is becoming popular in some areas in Omusati, Oshana and Oshikoto and to a lesser extent in Ohangwena. The fat oil from donkey meat is said to have medicinal value. It can cure wounds especially those caused by burning.

All the kings and chiefs interviewed share the same sentiments that the number of donkeys are too many in NCD particularly in Omusati, Oshana and Oshikoto regions. They feel that donkeys are responsible for overgrazing except the Chief of Okalongo who stated that cattle are heavier grazers than donkeys.

Because of the increased use of donkeys in the area, it is believed that the grazing area can no longer sustain the number of livestock. As a result farmers have to take their animals (cattle) to the cattle post and in most cases leaving donkeys behind.

They also stated that donkeys are stubborn animals that like sleeping in open spaces like roads. Donkeys do not easily get scared when there is an on-coming object. They alleged that donkeys are causing accidents and death to people especially in Omusati, Oshana and Oshikoto. “They nearly caused an accident to the presidential convoy at Oshuuli village” said one of the Chiefs.

The Kings and Chiefs said donkeys are considered of less value in their communities because they can not be used to pay fines, lobola and cannot be slaughtered for ceremonies. When compared to other livestock donkeys fetch a lower price on the market.

In their communities those who do not have donkeys are associated with poverty and hunger.

The kings and chiefs recommended that the maximum number of donkeys per house household should be reduced to about 5 or 6.

5.2.6 Governors in NCD

The four governors mentioned that donkeys play an important role in their regions because they are used for ploughing and transport. They thought that tractors are complementing the draft animals in tillage and transport although they are expensive. The governors emphasized that donkeys are important particularly for poor farmers because they are cheaper to own than cattle.

The governors also noted with concern that grazing space is limited. They felt that grazing space insufficiency, forms the basis for the farmers to accuse the donkeys of overgrazing. In fact NCD is semi-arid areas therefore drought and hardy conditions are a common phenomenon. They believe that cattle and goats are reducing in numbers due to inadequate grazing whereas donkeys are on the increase because they can withstand the hardier conditions. Water is not enough and donkeys can survive in dry spells so donkeys are surviving more than other livestock.

They mentioned that donkeys cause accidents but they are not the only ones responsible for accidents. Other livestock are also involved. The governors also pointed out that, in Oshakati and Ondangwa donkeys and other livestock are found roaming in town. They apportioned the blame on close proximity of villages to towns, however, they say municipalities are trying to talk to the communities around the towns to look after their animals.

They also mentioned that the attitude of drivers on the roads is bad particularly during the day because they do not make an effort to avoid donkeys. They cited accidents that occurred in their regions where donkeys had been involved and some of them had been fatal causing deaths of people. In some cases the governors called for people to look after their donkeys and put them in kraals but people only did that for a few days.

They said that the population of donkeys is high and continue to increase causing concern due to increased traffic accidents and limited grazing resulting in overgrazing. There is a tug of war on this issue particularly in Omusati region where members of the community want the donkeys to be reduced

whilst some want more donkeys. The governors think donkeys are many and need to be reduced but the method used should not offend the community's interests, instead it should benefit them.

In Omusati some people even thought that the Government wanted to kill their donkeys but they had managed to explain to the communities these were mere rumours. Whilst the population of donkeys is increasing and is thought to be causing accidents, they think that the real issue is that farmers are not caring for their animals.

The governors also mentioned that traditionally it is a taboo to eat donkey meat. Donkeys were not deliberately slaughtered for meat like other livestock. They say in the south people deliberately slaughter donkeys for meat but in the NCD particularly in Oshana donkeys are eaten after they have been run over by the vehicles.

Traditionally people never used to slaughter even cattle except at weddings, parties and other ceremonies. Cattle were kept for pleasure and status but now they slaughter them for meat. If the same principle is used, the communities can be encouraged to slaughter donkeys for meat and other products.

The governors recommended sensitization of the communities on donkey meat as a source of dietry protein. This it is thought could create a local market for donkey meat therefore reducing the number of donkeys. Incentives should be put in place to open abattoirs and butcheries for processing the meat and other products. This programme should look beyond the boundaries of Namibia. The governors suggested limiting the maximum number of donkeys a household can keep at any given time to 4 donkeys, this is in line with Person, Nengomasha and Krecek 1995 who recommended that 4 donkeys are adequate for ploughing.

The governors would like to see legislation put in place that would punish drivers who deliberately run over donkeys and donkey owners who let their livestock roam on the roads. This would require educating the communities in good livestock management to compliment the legislation.

6.0 AREAS FOR FURTHER RESEARCH

- A study into the feeding behaviours and the relationships of the livestock under NCD grazing areas is required to assist in strategizing grazing regimes to minimise environmental degradation. This should be complemented by studies on carrying capacities.
- Research need to be conducted to find out the required maximum number of donkeys per household to carry out different farming and other activities.
- Investigate marketing opportunities/channels i.e. areas where donkey meat is consumed and establish butcheries.
- Study on the use of donkey's by-products need to be carried out. (e.g. soap from the fat, oil for treating burn wounds). This is envisaged to improve the donkey's value leading to better management of the animal.
- A reasonable number of the respondents mentioned that they use indegionous/traditional methods for treatment of their donkeys when they fall sick. There is therefore need to identify the traditional methods, test and screen them for efficacy so that they can be availed to the farmers, as they are cheap and locally available. Issues like the dosages and methods of administering the treatment should be explored. Research into the feeds that are available to farmers to feed the donkeys, the nutritional value of the feed, daily nutrient requirements and the feeding regime need to be conducted. This can help in avoiding overgrazing. Indigenous grasses of high nutritional value that are suitable for fodder have to be identified and their storability determined. This should however be done for both cattle and donkeys.
- Farmers mentioned that they use crop residues such as mahangu, sorghum and palm leaves and fruits to supplement their donkeys. It is necessary to find out how farmers use them; the effects of work on the animal itself and the effects of supplementation on health and work output.
- There is need to investigate the economic impact of diseases on donkeys. This lack of information makes it impossible for policy decisions on disease control and prevention.
- An investigation into breeding programmes for donkeys which can be used for meat purpose
- PRAs to be carried out to establish the exact needs of the farmers with regards to donkeys use.

7.0 CONCLUSIONS

Assuming that the survey samples and the trends there in, were a good representation of the donkey population in NCD, the following conclusions were made.

The survey revealed that generally donkeys are not the only animals causing accidents in NCD. Overall, cattle are the major cause of accidents constituting 38.2% of the accidents recorded over a period of five years followed by donkeys and wild animals with 24.1 % and 24 % respectively. In Oshikoto wild animals cause the greatest number of accidents followed by cattle then donkeys whereas in Ohangwena and Oshana cattle come first followed by goats then donkeys. It is in Omusati region only where donkeys caused the highest number of accidents.

Contrary to the perceptions of several stakeholders there are no surplus donkeys to be exported to other regions. Within NCD and the Caprivi and Kavango regions the number of donkeys the farmers demanded by far exceeded the number of donkeys on offer for sale. This is confirmed by the donkeys which are still being brought into NCD from the southern parts of the country and Kunene region.

There is no evidence that donkeys are the only animals causing overgrazing which eventually leads to environmental degradation. In terms of numbers donkeys are out weighed by goats and cattle. In fact goats are five times more than donkeys in each of the regions in NCD and cattle are twice the number of donkeys. All these animals use the same grazing space therefore they all contribute to overgrazing in one form or another. Cattle and other livestock are sent to cattle posts when grazing is depleted and donkeys are left to graze on the depleted grazing forcing them to uproot the grass stubs for survival. Because they are seen uprooting the grass stubs the farmers label them as animals causing overgrazing.

The main problem established in the NCD was that of livestock management in general and the negative attitude of the farmers towards animals. However donkeys are more neglected than the rest. A better understanding of the issues surrounding the livestock management and use of donkeys is needed in NCD. Farmers leave their donkeys to roam around particularly during the dry season. They also do not make an effort to feed them or to treat them when they are sick like they do to other livestock.

There is generally lack of awareness on donkey care and appropriate use in the four regions of NCD. It was evident from the outcome of the survey conducted in NCD that training on donkey use and management was way below expected standard.

Donkey meat is consumed in some parts of NCD and is more pronounced in Omusati region though some of the community members interviewed could not come open and accept eating the meat.

The on-going census in the NCD on donkeys, once complete, the figures will be compiled and distributed to all stakeholders.

8.0. RECOMMENDATIONS

- There is need to change the farmers' attitudes towards care and management of livestock and in particular concerning donkeys in NCD e.g. through interaction and participation of farmers, aggressive awareness campaigns, training and demonstrations. This should be strongly supported by policies that are geared towards rural technologies.

- Intensive participatory extension and research programmes in DAP technology need to be put in place to address feeding, health, animal drawn equipment and marketing of donkeys including demonstrations on the handling and preparation of donkey meat

- The farmers need to be trained on various uses of donkeys so that they can effectively and efficiently use them instead of leaving them idle. This will enable those households with large numbers of donkeys to cut on the number of donkeys they own and those without to have access to some donkeys for DAP purposes.

- There is need to discuss with farmers on the importance of keeping enough donkeys for their draft power, replacement and meat requirements.

- It would also be important to develop entrepreneurship among farmers so that they can use their donkeys for hiring services in rural transport and harness making. Rural artisans can make animal drawn implements and their spare parts.

- Those breeding for sale should be made aware of the feeding and health limitations so that they can keep a reasonable number at a given time. In addition breeding at institutions can be implemented to cater for the demand of donkeys identified in the Kavango and Caprivi.

- A study into the feeding behaviours and the relationships of the livestock under NCD grazing areas will help in strategizing grazing patterns to minimise environmental degradation.

- A system of livestock record keeping including donkeys should be introduced in every extension technician's ward to establish livestock numbers at any given time. However this should not interfere with records kept by the directorate of veterinary services. The veterinary services should enforce the use of the stock card. The system will ensure that livestock records are updated without carrying out expensive surveys.

- Legislation to control accidents caused by livestock and overgrazing of the pastures should be put in place and be managed at local level. This can be in the form of a stock card which stipulates a certain number of animals a household can own before a fee can be charged for the excess stock. Legislation can also be put in place for rural transport and this can be in the form of paths for animals and carting. This could also be managed at local level for sustainability.

- Mechanisms should be put in place to reduce mistrust between farmers and government officials with regards the declaration of correct livestock numbers. This can be achieved through traditional leaders and their structures.

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10 .0 Appendices

10.1 Appendix 1: list of Acknowledgements

Traditional leaders
King Japhet Munkundi
King Josia Shilongo Taapopi
Chief Daniel Shooya
Chief Matias Walaula
Chief Oswin Mukulu
Chief Herman Ndilimani Ipumbu
Senior Headman Lukas Shinedima
Regional Councillors (NCD)
Regional Governors (NCD)
Headmen

Regional Governors
Honourable Clemens H Kashuupulwa - Oshana
Honourable Vilho E Kamanja – Oshikoto
Ohangwena
Honourable Sarky Kayone -Omusati

Agricultural Extension Staff
Martin (Acting Regional Director)
Ndilimeke (Acting Chief Ohangwena Region)
Imalwa (Chief Extension Officer Oshana)
Nantanga (Chief Extension Officer Omusati)

Draft Animal Power Co-ordinators
Gottfried Keib
Haufiku Nestor
Naunyango Silvanus
Tyapa Martin
Kaholongo Lukas

Agricultural Extension Technicians
Nandango Gideon
Amunime Ananias
Nuuyoma Erastus
Nghishidimbwa Veronica
Shileka Hambeleleni
Kaambu Marina
Amufufu Kristof
Mukwahima Gerhard
Handunge Wilhelmina
Tobias Robert
Uusiku Salomo
Nghipangelwa Hilya
Nhoni Vilho

Sheehama Patricia
Kamati Taimi
Shipvota Berhard
Haludilu Magdalena
Nghiilwamo Kaarina
Shipo Paulus
Endjala Victor
Mwaetako Charlie
Ipinge Lucia
Mbidhi Mvoyaha
Endjala Loide
Nghipondoka veronica
Iyambo Erikis
Haishonga William
Endjala Nicklaus
Nghishiiko Evelyn
Weyulu Ndinelao
Nembiya Festus
Negombo Beatus
Eelu Immanuel
Nghipunya Hambeleleni
Nicodemus Natanael
Nawa Otilie
Aiyambo Liina
Ashikutuwa Abraham Chacks
Shitwomunhu Erikki
Elindi Kaunapawa
Autanga Abrosius
Moses Monica
Ipinge Andreas
Shigwedha Julia
Anguwo Rachel
Nambinga Eliaser
Naunyango Lucia
Mwanyangapo Brucelia
Uusiku Aina
Shinane Mirjam
Sakeus Lydia

Police
Detective Sgt Samuel Paulus of Outapi Police Station
Commissioner T. J Mulukeni Ohangwena Region
Regional Commander E .H Shishanda

Municipality of Oshakati
John Ungwanga

10.3 Appendix 2: Draft Animal Power Training Programme

i. AET TRAINING

Introduction
This comprises a three week course that is run at Mashare by regional co-ordinators and the DAP unit at Mashare. This is a compulsory course for all the Extension technicians working in northern communal regions where crop farming is practised.

Course content
1. Selection and care of draught animals
2. Feeding
3. Tillage and transport equipment
4. Harnessing and Harness making
5. Training of draught animals

This course is a basic draft animal power course, which consists of 30 % theory and 70 % practicals.

Cost
The course intake is 15-20 participants per course. Seven trainers and four assistants are involved in this training. Since there are all government employees, they do not pay accommodation and meals so everything is provided from Mashare Training budget.

The total cost involved for AET training at Mashare for three weeks is N$ 16000 – N$18000.

ii. FARMER TRAINING

Introduction
Farmer training is a community-based training programme. Farmer training courses are demand driven through awareness campaigns. Courses can run for either one or two days, one, two or three weeks depending on demand by the particular community.

Course Content
1. Selection and training of draft animals
2. Planting methods
3. Weeding with cultivators
4. Plough setting and adjustments
5. Yoke making (weeding yoke)
6. Feeding – feed conservation
7. Health Care

This farmer course consists of 80 % practicals and 20 % theory

Cost
The average course intake is around 15 farmers per course. One to two extension technicians are involved in training of farmers in various communities where training would have been identified.
The cost is normally N$ 20.00 per meal per person. Most of the farmers will be coming from their homes so they are only provided with lunch and teas.

10.4 Appendix 3: Questionnaires used to interview farmers.

1. QUESTIONNAIRE FOR DONKEY SURVEY IN THE NORTH CENTRAL REGIONS OF NAMIBIA

RESPONDENT'S NAME:……

REGION:……

CONSTITUENCY:……

VILLAGE NAME:……..

INTERVIEWER'S NAME:……

DATE:……..

A. GENERAL INFORMATION

1. Which region do you come from?
a. Omusati b. Ohangwena c. Oshikoto d.Oshana

2. How long have you lived in the area?
a. 0-5 years b. 6-10 years c. More than 10 years

3. How many people live with you at your homestead?

	Male	Female
a. Children (below 18 years)	……	……
b. Adults (above 18 years)	……	……

4. Who is the head of the household?
a. Male …… b. Female …… c. Child ……

5. List 3 major sources of income, starting with the most important one
……

……

……

6. Do you own a piece of land for cultivation?
a. Yes…….. What size?……..
b. No

B. CROP PRODUCTION

7. Which crops do you grow?

Crop	area	yield
……	……	……
……	……	……

8. Do you normally have surplus for sale?

Crop	quantity	Use
……	……	……
……	……	……
……	……	……

C. LIVESTOCK

9. Which livestock do you keep?

Type	Numbers
a. Oxen	……
b. Donkeys	……
c. Chicken	……
d. Goats	……
e. Sheep	……
f. Other (please specify)	……

10. What do you use as a source of draught power at your farm?

……

11. What are the major forms of transport at your farm in order of importance?

……

D. FARMERS OWNING OR USING DONKEYS

12. How many donkeys does your household have?

Male donkeys

a. 1-2 years old	…….
b. 2-5 years old	…….
c. 5-10 years old	……..
d. more than 10 years	……..

Female donkeys

a. 1-2 years old	……
b. 2-5 years old	……
c. 5-10 years old	……..
d. more than 10 years	……..

13. How did you get these donkeys?

a. Inherited from relatives
b. Bought from donkey traders
c. Bought from neighbouring farmer
d. Barter trade
e. Other (please specify)

14. Do you keep donkeys for reproduction purposes only?
a. Yes …… b. No…….

15. How many donkeys do you use for draught power?
……

16. Who uses donkeys in your household?
a. Women …….. b. Men …… c. Children – Boys…….
-Girls …….

17. How often do you use your donkeys?
a. Everyday …… b. Once every other day ……
c. Weekly …… d. Bi- monthly ……
e. Other (specify) ……

18. What are the uses for your donkeys?
a. Tillage ……..
b. Transport …….
c. Hire ……. what is your hire price?) ……
d. Others …….

19. Would you like to sell some of your donkeys?
a. Yes …….. (why?) ……
b. No …… (why not?) ……

20. If yes how many?
a. Male…… (why) ……..……..
b. Female …… (why) ……..……..

21. How much would you be prepared to sell the donkeys for?

Male donkeys
a. 1-2 years (N$)……
b. 2-5 years (N$)……
c. 5-10 years (N$)……
d. More than 10 years (N$)……
Female donkeys
a. 1-2 years (N$)……
b. 2-5 years (N$)……
c. 5-10 years (N$)……
d. More than 10 years (N$)……

22. Would you like to own more donkeys?
a. Yes
b. No
If yes, how many:
Male donkeys ……
Female donkeys ……

23. When did your family get the donkeys you own/use now and from where?

	When	Where from
a. Less than one year ago	……	……..
b. 1-5 years ago	……	…….
c. 5-10 years ago	……	…….
d. more than 10 years ago	……	…….

24. How much are you prepared to pay for:

Male donkeys
- a. 1-2 years? (N$)…….)
- b. 2-5 years? (N$)…….)
- c. 5-10 years? (N$)…….)
- d. More than 10 years? (N$)…….)

Female donkeys
- a. 1-2 years? (N$)…….)
- b. 2-5 years? (N$)…….)
- c. 5-10 years? (N$)…….)
- d. More than 10 years? (N$)…….)

E. TRAINING IN DAP

25. Where do you get advice on donkey use and management?
……

26. Have you ever attended a draught animal power course
a. Yes …….. b. No……(If no, go to question 30)
27. If yes what did you learn on donkey use?
……

28. Do you think that the course was useful?
a. Yes
b. No
Give reasons for either answer
……
……
……
29. Do you think such a course should be run again?
a. Yes…….. b. No……..

30. If not are you willing to attend any draught animal power course?
a. Yes…… b. No……

Give reasons for either answer
……
……

31. List the institutions available in your area that in one way or the other are involved in DAP for example in the following areas:

a. Training of draught animals……..
b. Management of draught animals……...
c. Tillage……
d. Transport……
e. Manufacture of equipment and harnesses……

F. ENVIRONMENTAL ISSUES

32. What are the positive or negative effects caused by the donkeys to the environment?
……
……

33. If there are any problems how do you think they can be solved?
……
…….

G. MANAGEMENT ISSUES

34. Where do your donkeys graze?
……

35. What distance do you travel to graze the donkeys?
a. 1 km…… b. 2-5 km……
c. more than 5 km…… d. Other (specify)……

36. Are the pastures sufficient to feed your donkeys throughout the year?
a. Yes…… b. No……..

37. How do you supplement your feeding?
……..……
……..

38. Where do you get help/advice when your animals fall sick?
……
……

39. What type of harnesses do you normally use for harnessing your donkeys?
……
……

40. Do you kraal your donkeys at night?
a. Yes
b. No…….. (If no. why?)……

41. Do you castrate donkeys as part of your management practice?
a. Yes……. b. No……..

42. How do you identify your donkeys when they are needed for work?
……
……

H. COMMENTS

43. Please list in order of priority the three (3) issues, which you feel are most important in your region about donkeys
……
……
……

I. FARMERS/ HOUSEHOLDS WITHOUT DONKEYS

44. Have you ever owned donkeys before?
a. Yes…….. b. No……

45. If No what are the reasons for not owning some
a. Too expensive b. Cultural
c. Diseases d. Not readily available
e. Other (please specify)

46. Would you like to replace or own donkeys?
a. Yes…….. b. No……

47. If yes why do you want to own them?
……
……..

48. How many donkeys would you like to have?
a. Male donkeys …… b. Female donkeys ……

49. Would you be able to pay for the donkeys if they are made available?
a. Yes …… b. No……..

50. If yes, how much would you be prepared to pay for:
Male donkeys
a. 1-2 years? (N$)…….)
b. 2-5 years? (N$)…….)
c. 5-10 years? (N$)…….)
d. More than 10 years? (N$)…….)

Female donkeys
a. 1-2 years? (N$)…….)
b. 2-5 years? (N$)…….)
c. 5-10 years? (N$)…….)
d. More than 10 years? (N$)…….)

51. What work would you use the donkey for?
a. Draught power b. Transport c. Other

52. What would you look for when selecting a donkey to buy?
……
……
53. Have you or any of your household members worked with donkeys before?
a. Yes …… b. No……

54. If yes for what use?
……

55. If you acquired donkeys would you need assistance in training them?
a. I will need assistance
b. I will train them on my own
c. Other (Please specify)

56. a. What positive things have you heard about donkeys before?
……..

b. What negative things have you heard about donkeys before?
……

c. What is your own perception about donkeys? …….

THANKYOU

Appendix 4 : Questionnaires used to interview farmers by Headmen

2. OMAPULOKONAAKONO GENASHA NOMIYALU DHOONDONGI MOMUSATI, OSHANA, OHANGWENA NOSHIKOTO (Donkey Census in Omusati, Oshana, Ohangwena and Oshikoto)

Oshitopolwa: ……..
(Region)

Oshikandjohogololo: ……
(Constituency)

Edhina lyomukunda: ……..
(Village)

Edhina lyamwene womukunda: ……
(Name of Headman)

OMAUYELE GAPUMBIWA
(Information Required)

Omwaalu gwomagumbo momukunda: ……..
(Number of households in the village)

Omwaalu ghomagumbo gena oondoongi: ……..
(Number of households with donkeys)

Omwaalu gwoodongi adhihe momukunda: ……
(Total number of donkeys in the village)

Appendix 5: Workshop Programme

WORKSHOP ON DONKEY CENSUS AND SURVEY IN NORTH CENTRAL NAMIBIA

Date: 24 April 2003

Venue: Cresta Lodge, Ondangwa

Time	**Activity**	**Facilitator**
08:00	Arrival and Registration	E. Namalambo / J. Chigariro
Chairperson: P. Jessen		
08:30	Introductions and workshop purpose	E. Namalambo
08: 45	Official Opening	Minister of MAWRD
09:00	Presentation of the Findings from the Donkey survey	R. J. Chitsiko
09:45	Clarifications and questions	Survey Team
10:15	**TEA/COFFEE BREAK**	
	Pictures Presentation	DAP Regional Coordinators
10:30	Clarifications and questions	Survey Team
11.00	Presentation Discussion	Survey Team
Chairperson: Professor Simalenga		
11:30	Group Discussions	L. Muswema/E. Namalambo
13:00	**LUNCH BREAK**	
14:00	Continue Group Discussions	Survey Team
14: 15	Group Presentations	Survey Team
15.15	**TEA/COFFEE BREAK**	
15:30	Plenary	Survey Team
16:00	Recommendations and Conclusions	Prof. Simalenga
16:30	Closing Remarks	Governor of Oshikoto Region

Appendix 6: Opening Speech by the Honourable Minister of Agriculture Water and Rural Development

First and foremost I would like to welcome you and thank you for attending this important workshop on the Donkey Survey and Census in the North Central Division. I am aware that you had other important issues to attend but today you decided to put them aside and attend this workshop. This to me is a sign of your unwavering commitment to agricultural development in this country.

It is with great pleasure that I announce the completion of the Donkey Survey and census which spanned a period of 3 months. This Survey and Census was conducted jointly by the Ministry of Agriculture Water and Rural Development of Namibia and the Ministry of Lands Agriculture and Rural Resettlement of Zimbabwe. This workshop's purpose is to present to you the findings and recommendations of the Survey.

The Honourable Minister of Agriculture, Water and Rural Development Officially Opening the Donkey Survey Workshop at Cresta Lodge in Odangwa

The survey was commissioned to address concerns raised by the public and politicians that donkeys were causing traffic accidents and overgrazing which to some extent resulted in loss of human lives and environmental degradation.

As we deliberate on the Survey Report, I would like you to keep at the back of your minds that donkeys form part of Draft Animal Power technology which is a vital component for any successful crop production system. In addition, donkeys play a very important role in providing transport for our communal farmers to ferry wood, water, the sick to the hospital, the elderly to collect their pension and many other things. About 60 - 89 % of the farmers in the northern communal areas use draft animals for their farm tillage and transport. This practice can be traced back to more than 100 years ago when farmers started using oxen and donkeys as their draft power source. Therefore the Republic of Namibia has recognised the importance of DAP technology and policy statements relating to DAP have been pronounced in the National Agricultural Policy. To implement these policy statements Mashare Agricultural Development Institute was mandated in 1995 to the national DAP programme.

Farm mechanisation through tractor ploughing services programmes in the region failed to adequately meet the power supply needs of smallholders due to several reasons such as affordability technical complexity, breakdown problems, etc. On the contrary animal traction has proved itself as a dependable and versatile source of agricultural power for tillage and transport. With regard to technology output, the range of equipment including simple light-weight tools which can be used with donkeys (preferred by women) as well as capacity to package them for completeness needs to be explored. Packages will make it possible to exploit the complementary capacities of animal traction. Such packages will bring about the much-needed entrepreneurial creativity to make farmers' implements serviceable as well as available for hire by those who cannot afford to own them. Other complementary approaches like agro-forestry and water harvesting practices need to be brought on board if the socio-economic well being of all parties is to be fully enhanced.

Currently attention is being focused on irrigation, crop diversification, grain storage, processing of mahangu and indigenous fruits, livestock improvement, marketing and animal health specifically focused towards cattle, sheep and goats. All this is being done to achieve sustainable food security and raise the standard of livelihoods for the communities in this country. The ultimate aim is to achieve agricultural productivity growth rate, which is higher than annual population increase.

Given this scenario one would want to know what contributions DAP makes to the overall goal? What does the donkey in particular contribute to improving the livelihoods of the community yet:

a. It is alleged that donkeys cause road accidents, as they tend to sleep or stand in our public roads, ignoring traffic, thus causing loss of valuable human lives and damage to property.
b. It is also alleged that donkeys cause problems with sustainability of our rangelands due to their bad grazing habits, as they tend to pull out grass and shrubs.

The list of problems associated with donkeys is much longer than this but as we proceed in our deliberations we should also bear in mind the positive things about donkeys. We need to answer the question, would our farmers be worse or better off with or without donkeys?

The donkeys survey whose major objective was to carry out a donkeys inventory in the North Central Division and suggest ways of dealing with perceived large numbers of donkeys was part of an effort to address the above questions.

We should also not forget that while the developed world struggle to cope with the economic problems stemming from over production of food and worries about the environment, we haven't even reached the level of guaranteeing a stable supply of food and, when natural or man-made disasters occur, people starve.

We may not have an immediate solution to all our problems; but a solution must be found and, whatever recommendation we make on the problem of donkeys, I'm sure of the fact that it will affect us all.

Concerning food security, the need for draught power (especially for tillage and transportation), at the household level can not be over emphasized, as often the donkey may be the only affordable means for ploughing, weeding, wood and water collection. The donkey is also a source of protein as a number of our people eat 'donkey meat'.

Hence, the issue at hand is to review the findings and recommendations of the survey team and collectively agree on how best donkeys can be managed to effectively contribute to the socio-economic development of our country.

As I would not like to preempt the discussions, I would rather keep my speech short, therefore with these few remarks I now declare the workshop officially open and I wish you all fruitful discussions on this very important topic

I thank you very much.

Appendix 7: Speech by the Honourable Governor of Oshikoto Region -Mr Vilho E Kamanja

We, in the regions, take great interest in meetings of this kind; as we recognize the importance of bringing together representatives of the traditional communities and representatives of the government to discuss and/ formulate their views and positions on vital and at many times, difficult issues affecting our communities and the nation at large, as only in this way can the involvement of the people and communities in the development process be secured.

The Ministry of Agriculture, Water and Rural Development is to be commended for initiating the survey, as it is a demonstration of dedication to improving the livelihood of our communal areas by guaranteeing a stable supply of food, thus improving the standard of living of our nation at large.

I have listened to your discussions and I have been impressed by the way the discussions have been going and by the very constructive and open atmosphere that has surrounded the workshop. All parties have contributed in their best ways to this very important and sensitive issue that our regions and the country at large have to deal with.

It is not up to me to give my views or opinions on the recommendations made after this workshop. But allow me to make a few general remarks:

People at all levels must be given the opportunity to voice their concerns on any proposed legislation. So the recommendations made during this workshop must be brought back to the people, to the villages, to the remote areas and it's contents must be explained in a language that everybody can understand, as only by doing this will we get a solid base and cooperation necessary for the proposed policy to be implemented successfully.

We should also note that for any policy formulated to be successful, the role of women must be critically analyzed:

As women not only make up about half of our population, and as shown by the results of the survey, often the sole bread winners with enormous responsibility on their shoulders but are also responsible citizens and hard working; hence they constitute a valuable asset that should be taken into account for any reasonable success to be achieved in the implementation of any policy.

In conclusion, once more I would like to commend our Ministry of Agriculture, Water and Rural Development and the Ministry of Lands, Agriculture and Rural Resettlement of Zimbabwe and everyone else who contributed to the success of the survey thus the success of this workshop.

May God be with you on your journeys back home.

I thank you.

Appendix8: Workshop Recommendations

Ohangwena Region

RECOMENDATION	ACTIVITY	ROLE PLAYER	TIMING	ASSUMPTIONS
1. AWARENESS CAMPAIGNS	**Leaflets on**: -promotion on donkey meat -proper use of donkeys -proper feeding -**Meetings** **Video shows**	-DAP co-ordinators -Governors -Councillors -Traditional leaders	July 2003 onwards	All stakeholders will participate.
2. TRAINING AND DEMONSTRATIONS	-Castration -Harnessing -Management and animal care	DAP co-ordinators -VET Dept -Blacksmiths -Councillors -Traditional authority	May 2003 onwards	Tools for castration are available Trained blacksmiths available Information on animal management is available
3. POLICY AND LEGISLATION	-Drafting of policies and legislation -Community Meetings	R.C Traditional authority	June 2003 onwards	All stakeholders will participate
4. MARKETING	-Hold Auctions	-Farmer organs -Traditional authority -Extension personnel	June 2003 onwards	Auction facilities and animals available.

Omusati Region

RECOMENDATION	ACTIVITY	ROLE PLAYER	TIMING	ASSUMPTIONS
1. AWARENESS CAMPAIGNS	-Community meetings on negative attitudes about donkeys -Training sessions and demonstrations on donkey use shows	-DEES, DVS, DART and farmers	August 2003 onwards	Funding available.
2. INTENSIVE EXTENSION AND RESEARCH IN DAP TECHNOLOGY	Training of farmers in: -Feeding -Health -Harnessing -Equipment -Marketing	-DEES, DVS, DART and farmers	July 2003 onwards	Funds are available Trained personnel are available Co-operation from farmers and traditional leaders
3. POLICY AND LEGISLATION	-Make legislation on: -Identification marks -Kraaling of livestock at night -Enforcement of stock card for all livestock -Destocking of excess livestock Speedy implementation of land distribution	Regional Councillors Traditional authority MAWRD	August 2003 onwards	Co-operation of traditional leaders, regional councils and farmers
4. MARKETING	-Hold Auctions	-Farmer organisations -Traditional authority -Extension personnel	June 2003 onwards	Auction facilities and animals available.

Oshikoto Region

RECOMENDATION	ACTIVITY	ROLE PLAYER	TIMING	ASSUMPTIONS
1. PARTICIPATORY AWARENESS CAMPAIGNS AND DEMONSTARTIONS	-Awareness campaigns on: -importance, advantages and disadvantages of donkeys -feeding, health, housing , harnessing and economic aspects e.g. hiring and selling -Produce extension messages e.g. Leaflets, Posters , Booklets Video tapes , Radio programmes -Collection of information on donkeys	-DEES, DVS, DART and farmers -Regional Councillors -Mass media e.g. NBC	August 2003 onwards	DAP Co-ordinators are in place DAP Committee will involve farmers and regional councillors Funding available from National DAP programme
2. PARTICIPATORY TRAINING AND DEMONSTARIONS	Training and demonstrations of farmers on: -Donkey husbandry e.g. castration and feeding -Health -Handling of donkeys -Harnessing and harness making -Repair and maintenance of equipment -use of correct implements -Marketing	-DEES, DVS, DART and farmers, blacksmiths and implement dealers.	September 2003 onwards	Funds are available from the National DAP programme Implements are available and affordable (subsidise)
3. PARTICIPATORY POLICY AND LEGISLATION	-Make legislation on: -Branding and earmarking -Kraaling of livestock at night -Enforcement of stock card for all livestock -De-stocking of excess livestock e.g. maximum number of donkeys per household (8) Re-fencing of highways	-DEES, DVS, farmers and Policy makers	August 2003 onwards	Co-operation of other stakeholders e.g. traditional leaders, regional councils GRN and farmers

Oshana Region

RECOMENDATION	ACTIVITY	ROLE PLAYER	TIMING	ASSUMPTIONS
1. PARTICIPATORY TRAINING AND DEMONSTARIONS	Development of visual aids Awareness creation through meetings Training of trainees Training of communities on donkeys management	NNFU, DEES, DVS, DART -NNFU, Regional councillors, traditional councillors, extensionists, researchers and co-operatives NNFU, DVS, DEES, DART Trainees DVS DEES	July 2003 onwards August 03 onwards June 2004 onwards July 2004 onwards	Funds are available “” “”” “””””””

Independent Group

RECOMENDATION	ACTIVITY	ROLE PLAYER	TIMING	ASSUMPTIONS
1. ESTABLISH CORRECT NUMBERS OF LIVESTOCK IN NCD	Physical counting e.g. -Aerial survey -introduction of stock card	-Headmen -MAWRD -CAETs -DVS	June 2003 to September 2003	Farmers are willing to give correct figures Co-operation from traditional leaders Funds are available
2. AWARENESS CAMPAIGNS AND DEMONSTRATIONS	Extension messages Radio programmes Demonstration Leaflets Study tours	AETs, Farmers Mass media and DVS	On going	Funds are available Capacity e.g. trainers Co-operation of other stakeholders
3. RESEARCH	Research on general donkey management e.g. health feeding, harnessing , equipment and marketing and source of donkeys to supply Kavango and Kaprivi	Research officers, Farmers, Extension officers, Training Institutions, Artisans and DAP programme	ongoing	Funds available Capacity Co-operation of other stakeholders
4. Training of farmers	Harness making Harnessing Use of animal drawn equipment CART making Management e.g. breeding, nutrition , health and animal welfare	AETs, Farmers Training Institutions, DAP programme, Research officers/ CAETs VETs	ongoing	Funds available Capacity Co-operation of other stakeholders
5. LEGISLATION	Look at existing legislation Look at applicability of existing legislation and extend to other areas	Law enforcement and extension Local authority Traditional authority	May 2003 onwards	Funds available Co-operation from Govt Attorney's office
6. Identify high risk areas of accidents	Analyse accident reports Warning signs Move water points away from roads Erect throughways	Survey Team Regional authority and Regional council Rural water supply RCC	ASAP "	Funds available Co-operation of other stakeholders

Appendix 9: List of Donkey Survey Workshop Participants

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